

ADAMS COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE THIS PROFILE



Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

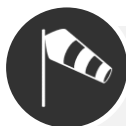
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



ADAMS COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

0.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

1.8 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

8.8 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

6.7% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

6.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

9.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

46.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

17.1 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

89.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

431.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY ADAMS COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

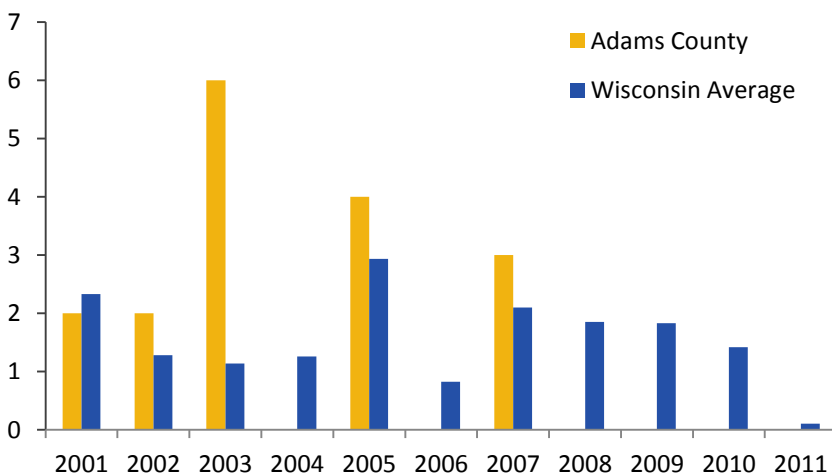
● 9.6

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

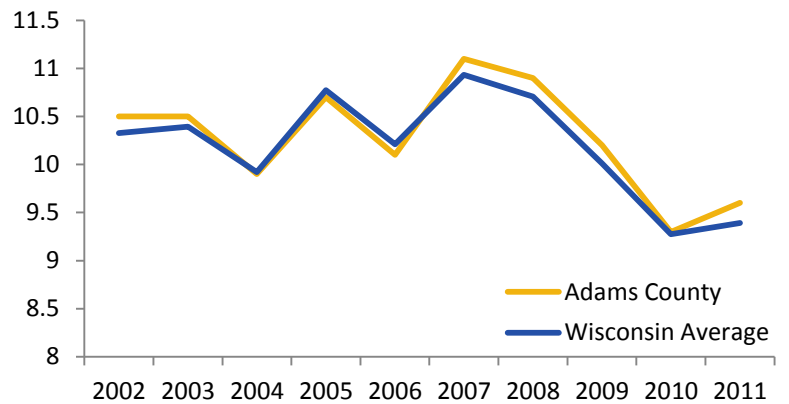
ADAMS COUNTY

PARTICULATE MATTER 2.5

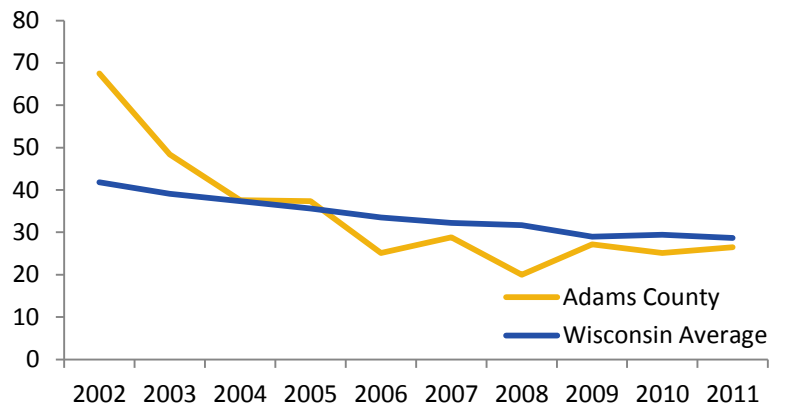
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

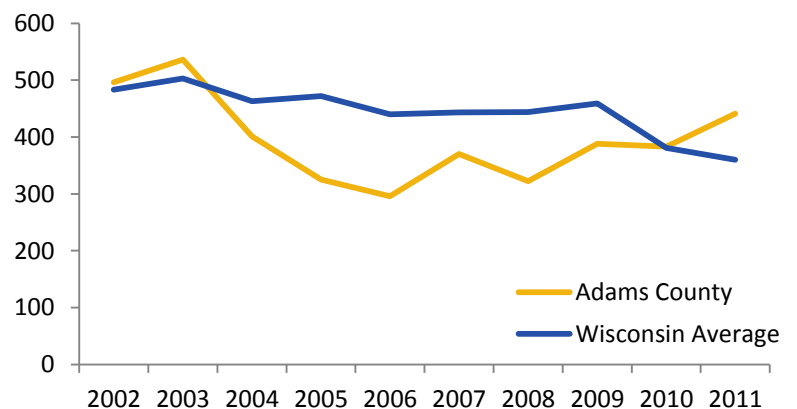
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



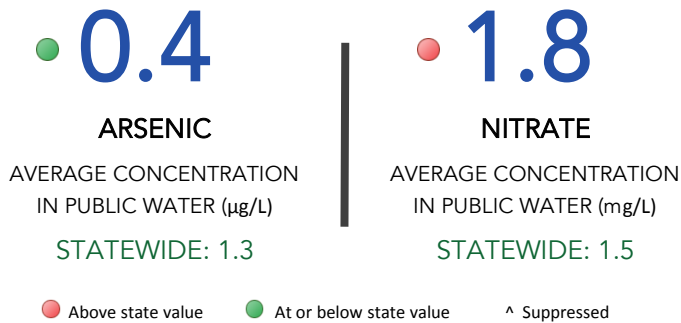
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY ADAMS COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

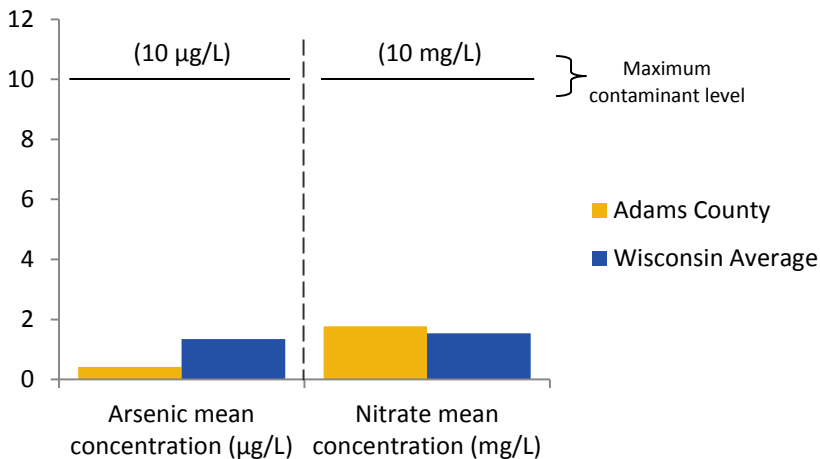
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY ADAMS COUNTY

PRIVATE DRINKING WATER

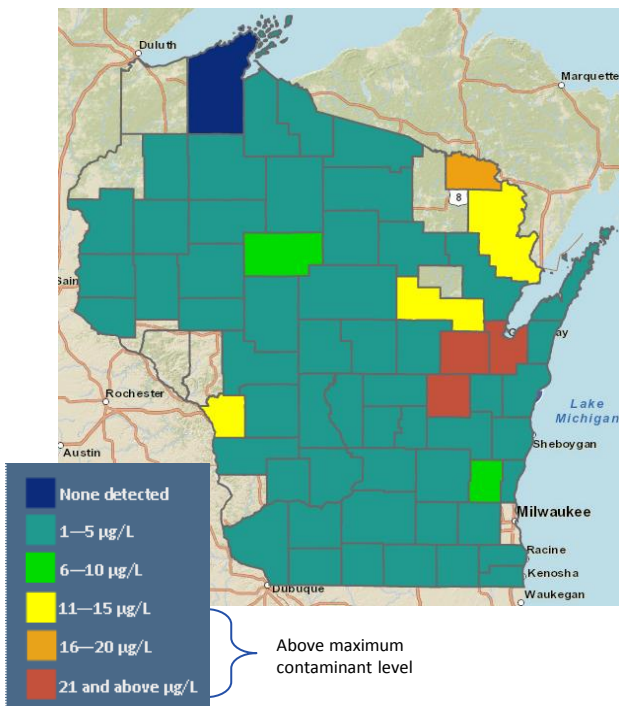
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

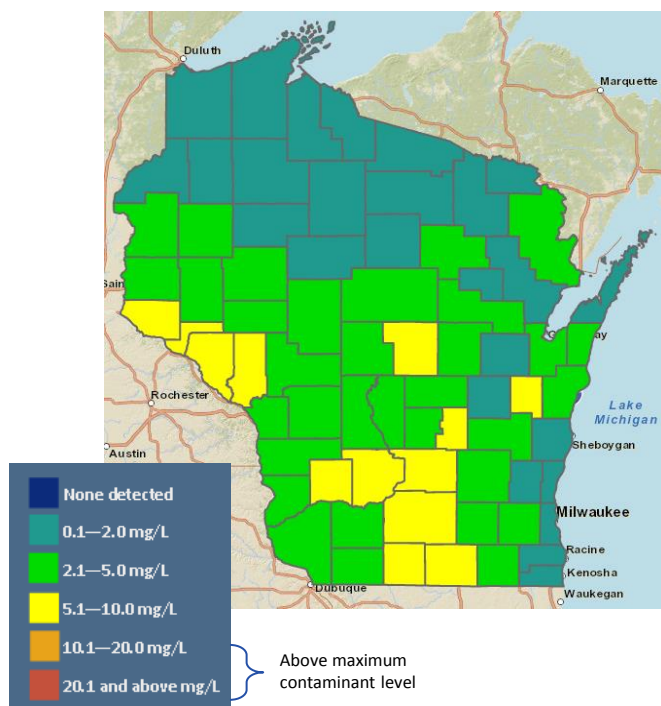
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

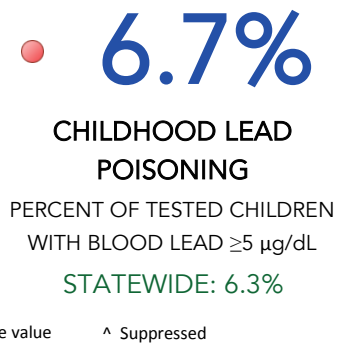
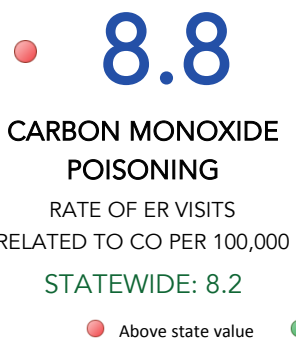


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS ADAMS COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

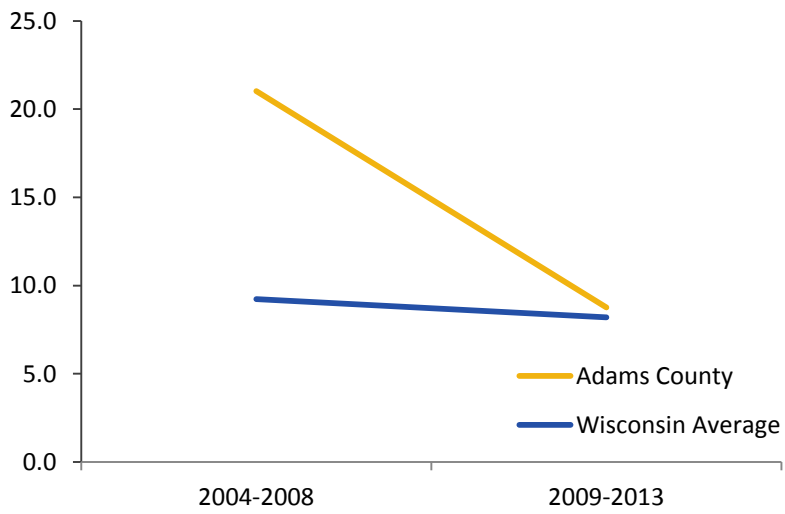


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

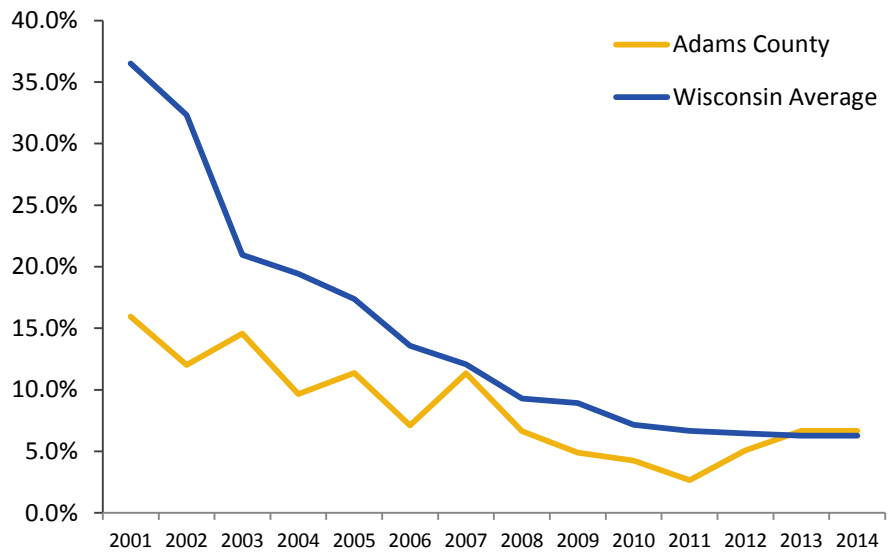
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

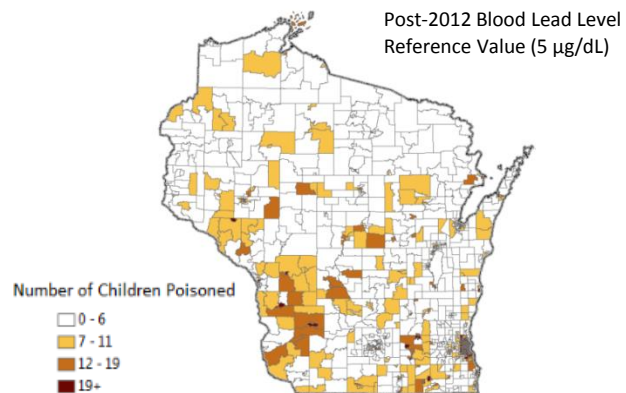
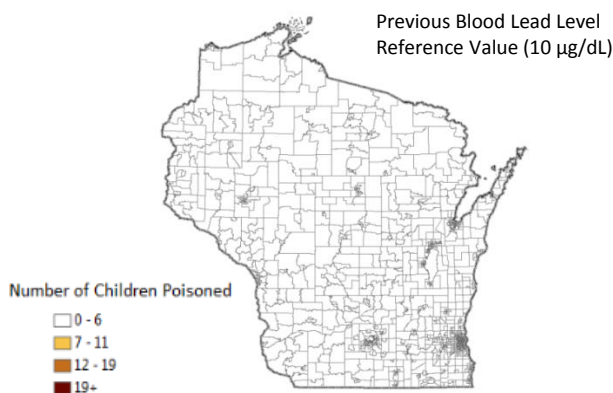
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

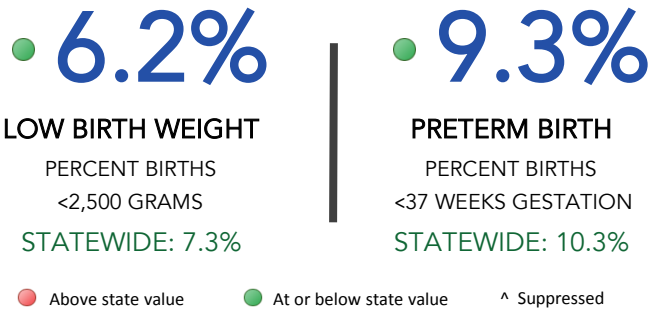
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES ADAMS COUNTY

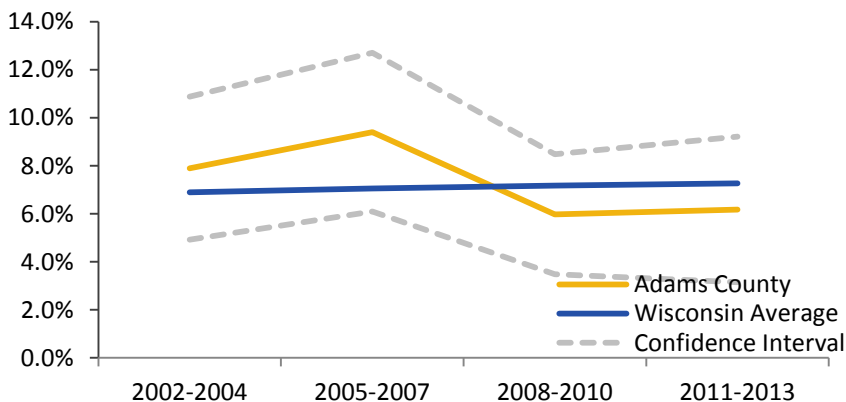
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES ADAMS COUNTY

PRETERM BIRTH

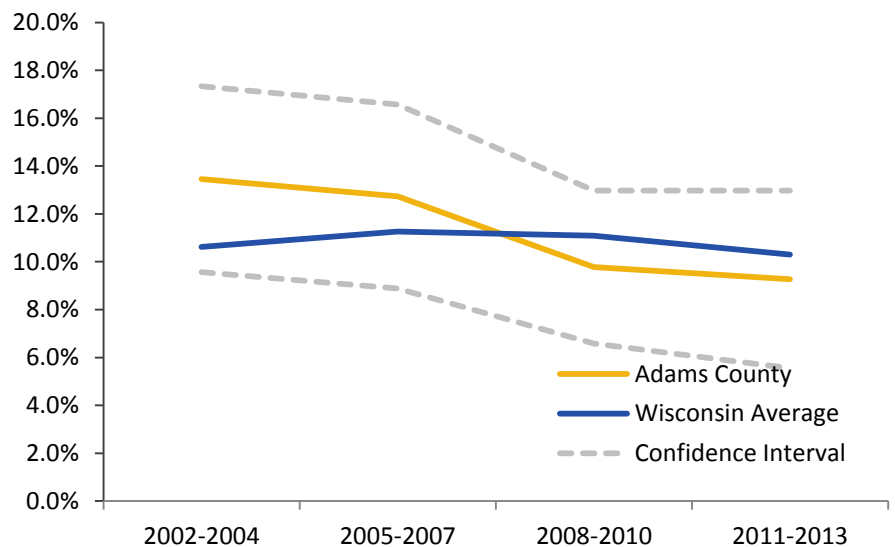
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

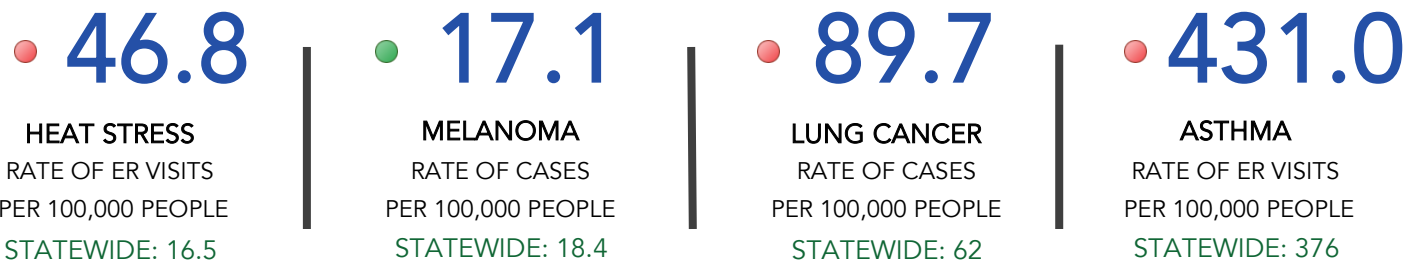
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS ADAMS COUNTY

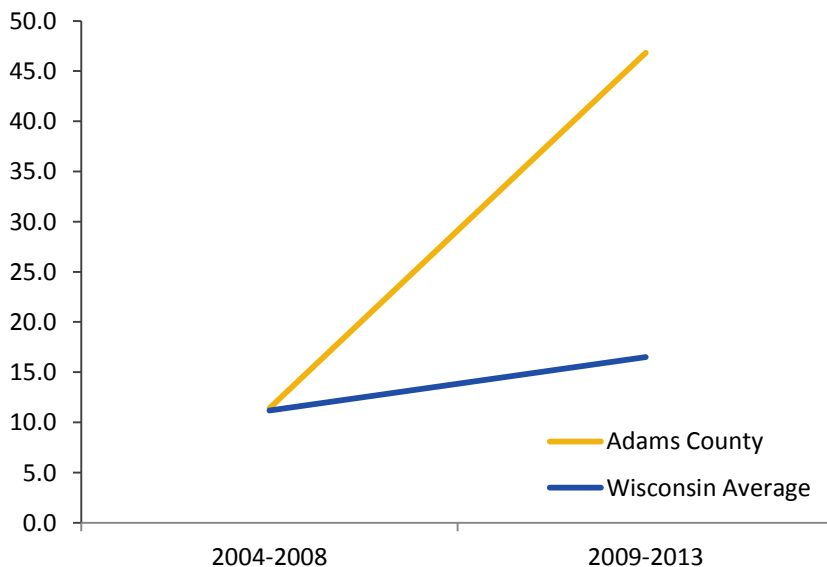
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



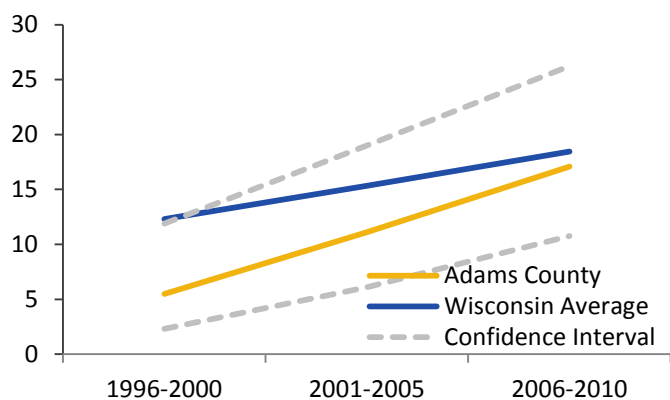


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



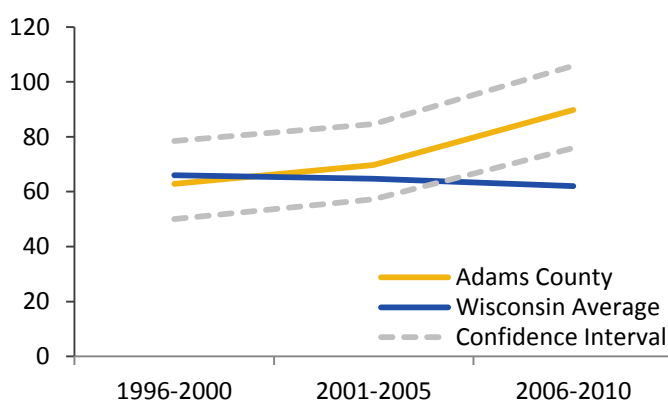
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



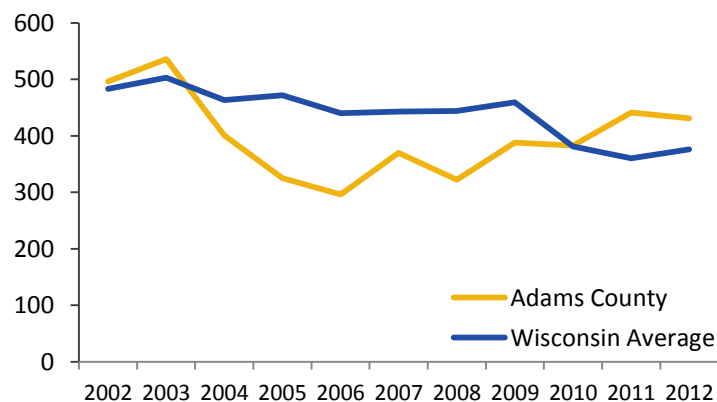
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

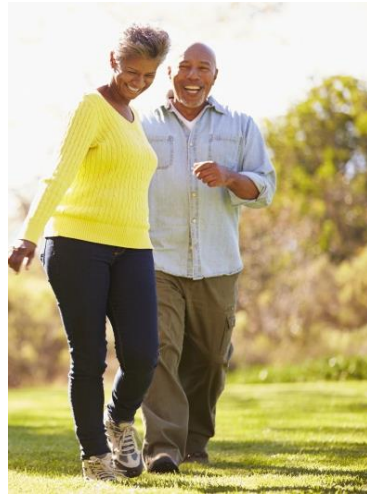
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
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MAY 2015 | P-00719



ASHLAND COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

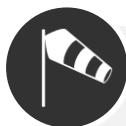
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



ASHLAND COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 14.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 5.2% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 4.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 30.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 10.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 66.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 298.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY ASHLAND COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

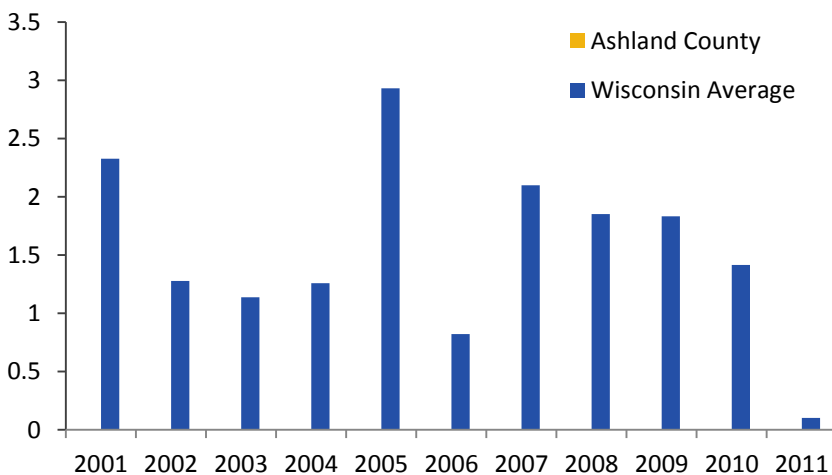
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **7.1**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

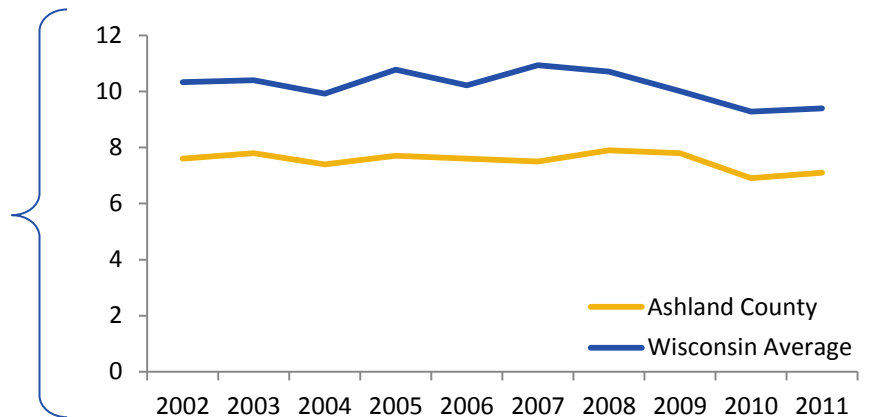
ASHLAND COUNTY

PARTICULATE MATTER 2.5

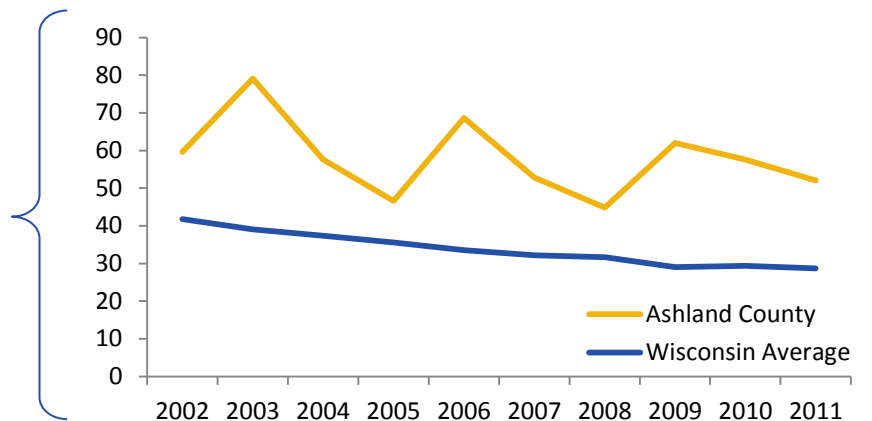
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

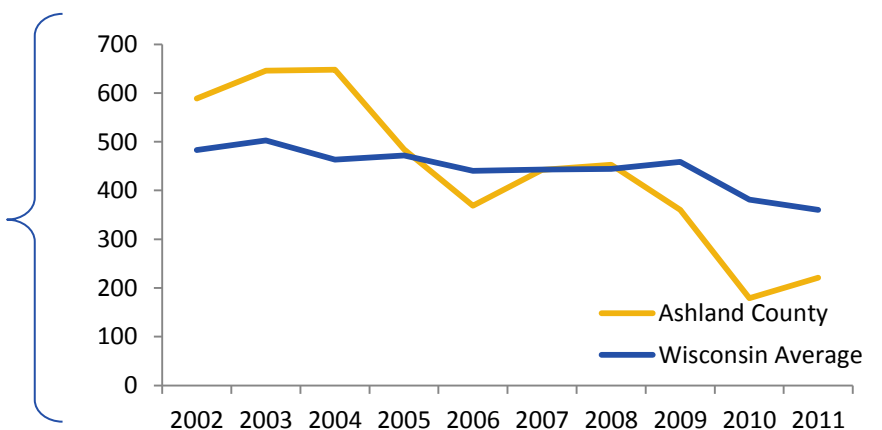
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



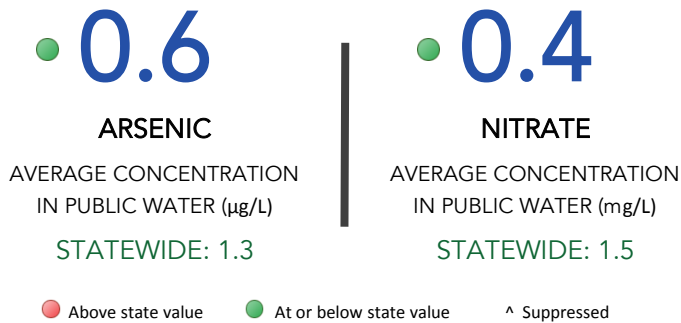
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY ASHLAND COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

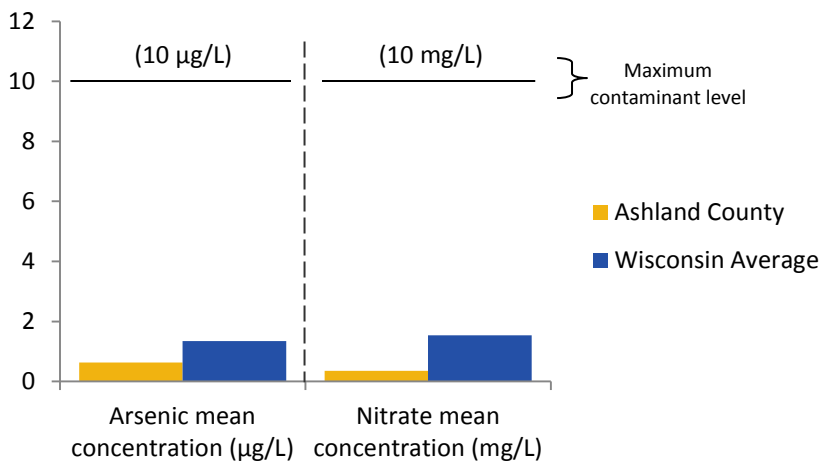
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY ASHLAND COUNTY

PRIVATE DRINKING WATER

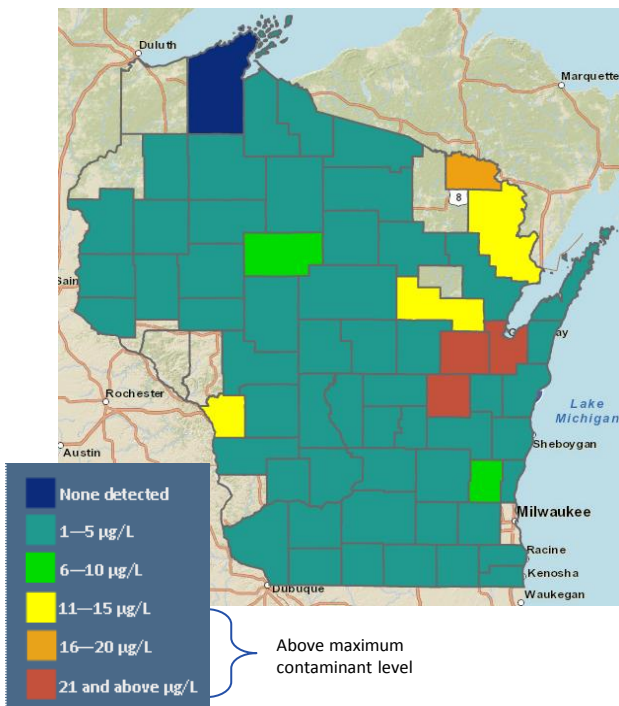
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

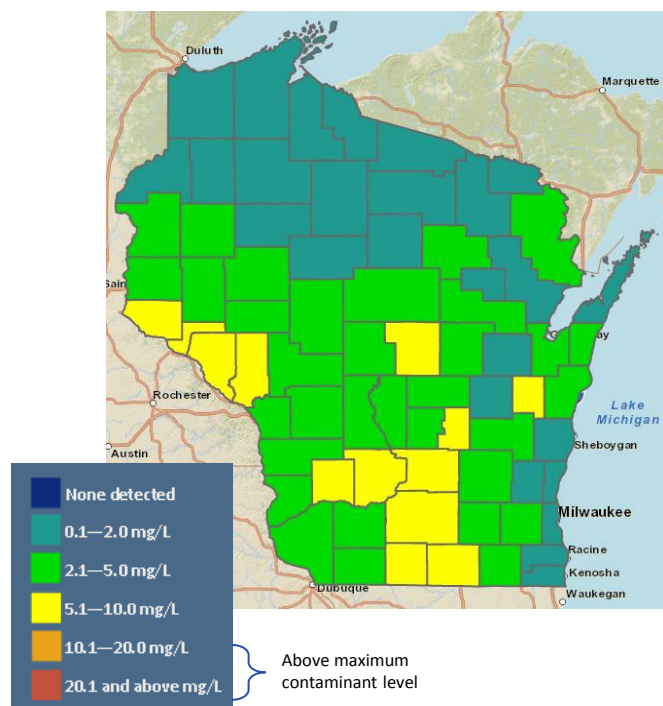
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS ASHLAND COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **14.5**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2
 ● Above state value

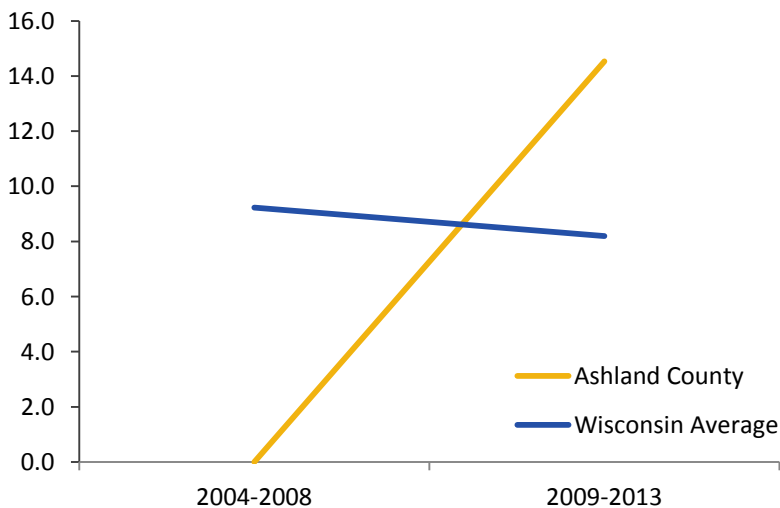
● **5.2%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%
 ● At or below state value

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

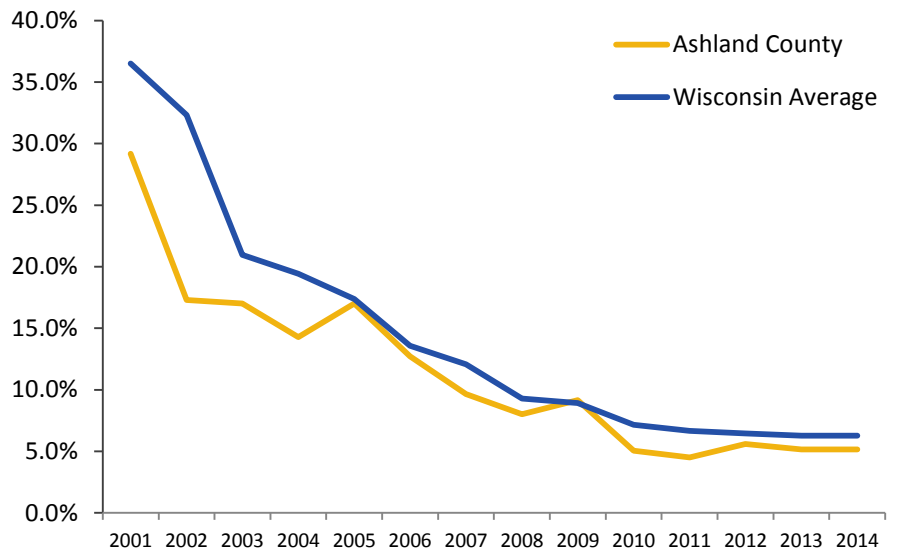
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

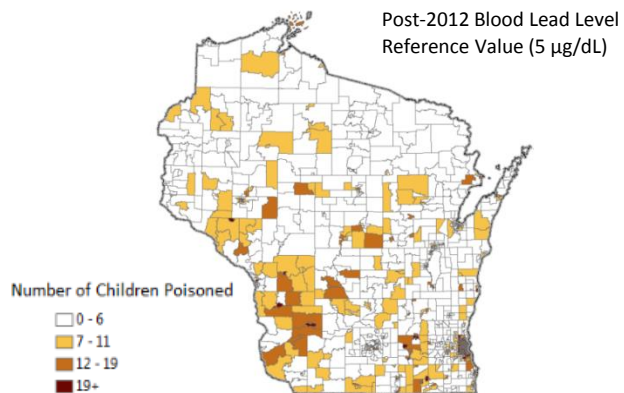
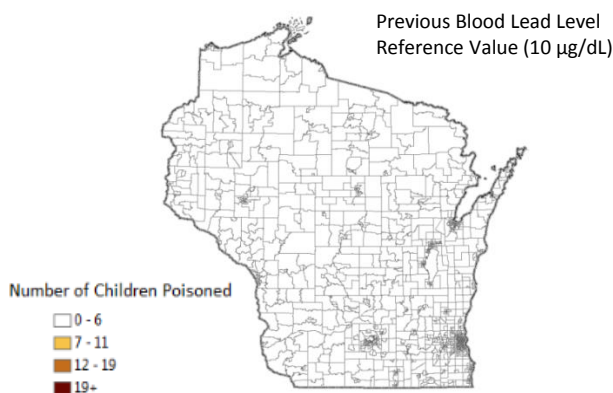
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES ASHLAND COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **4.4%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.1%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

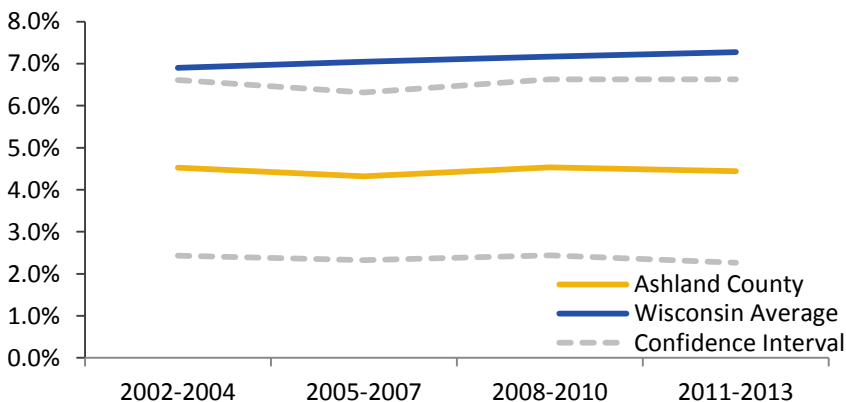
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

ASHLAND COUNTY

PRETERM BIRTH

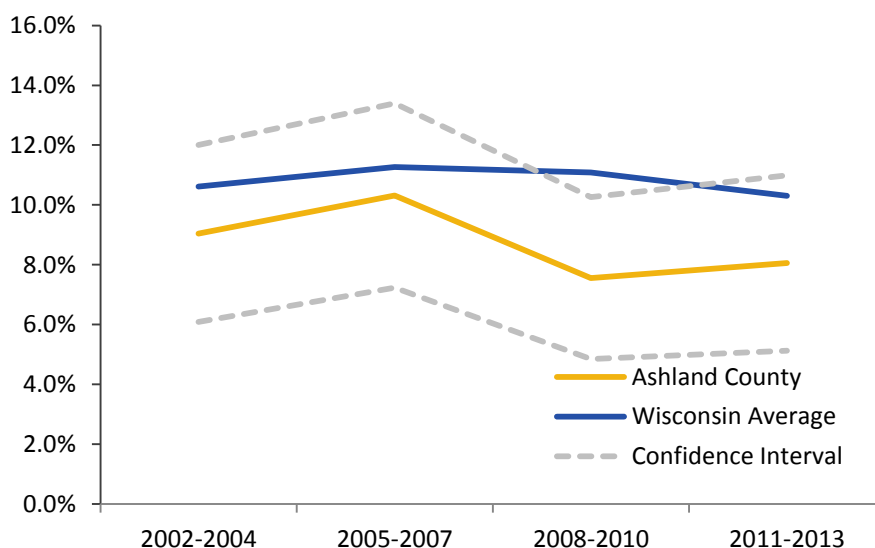
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

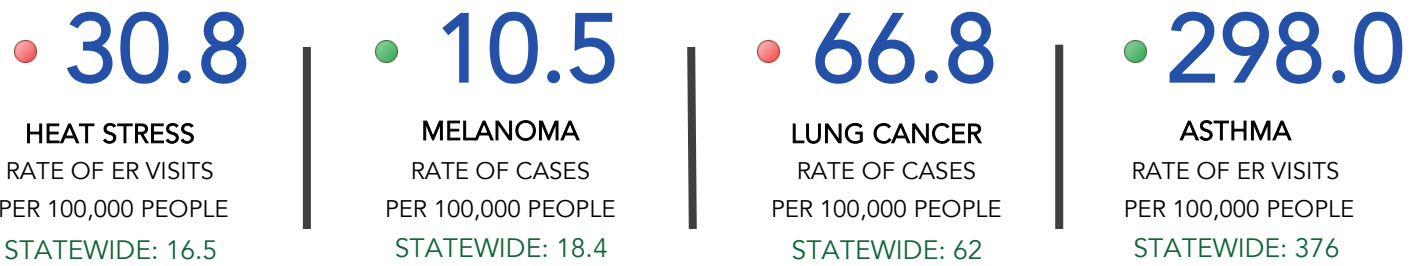
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS ASHLAND COUNTY

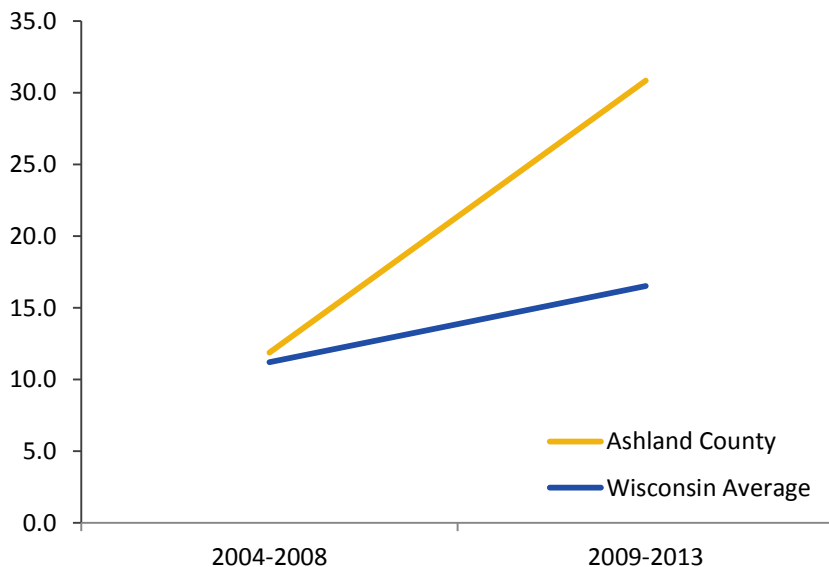
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



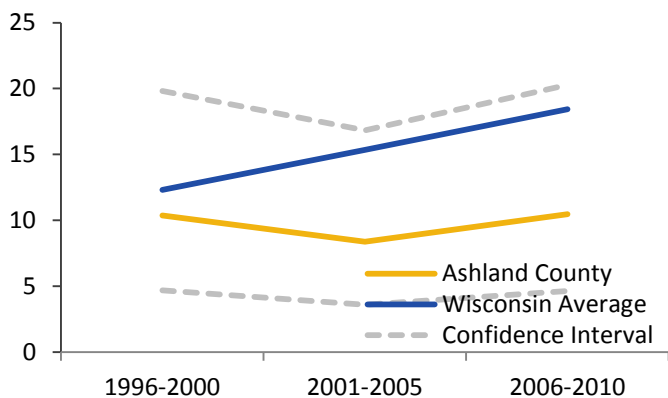


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



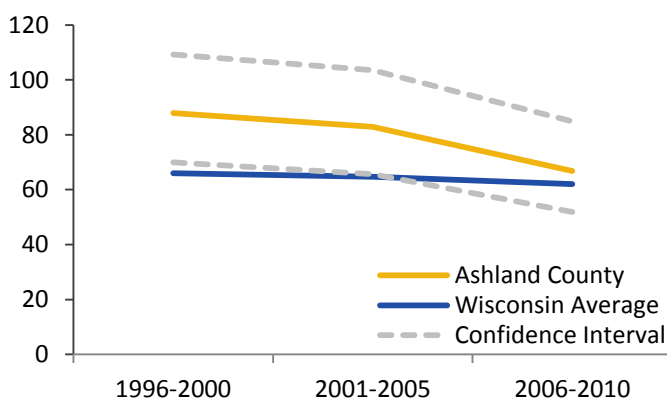
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



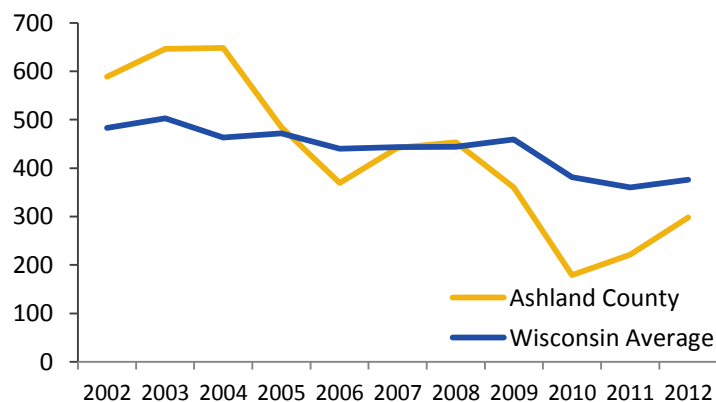
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

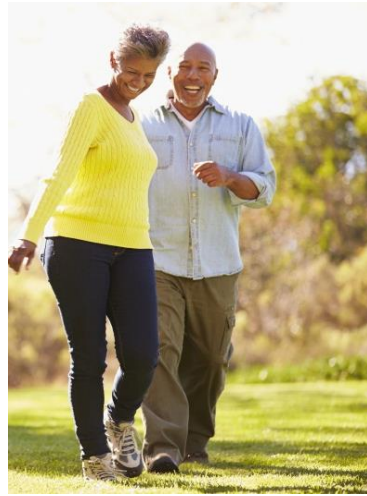
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



BARRON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BARRON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 3.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 9.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.5% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 23.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 19.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 64.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 312.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY BARRON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

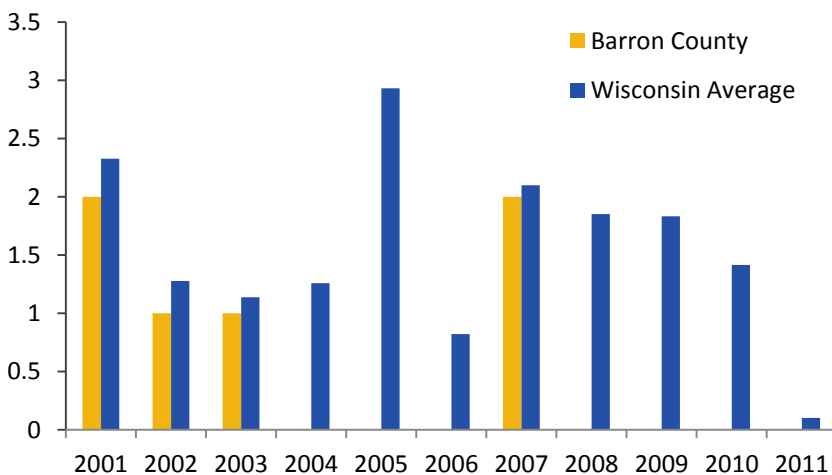
● 8.6

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

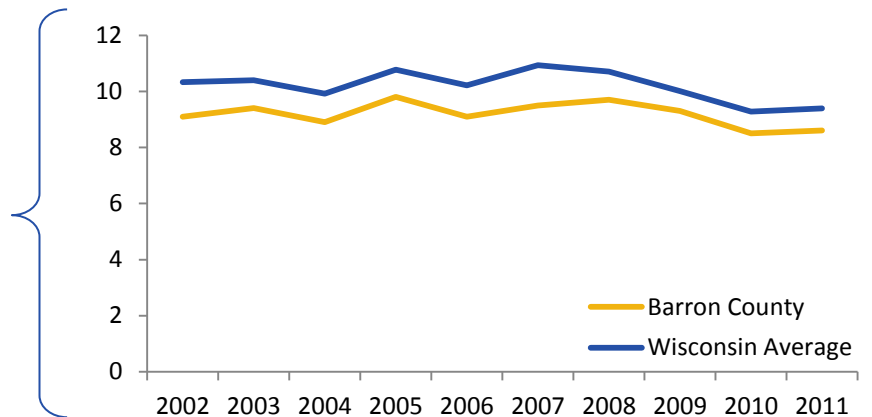
BARRON COUNTY

PARTICULATE MATTER 2.5

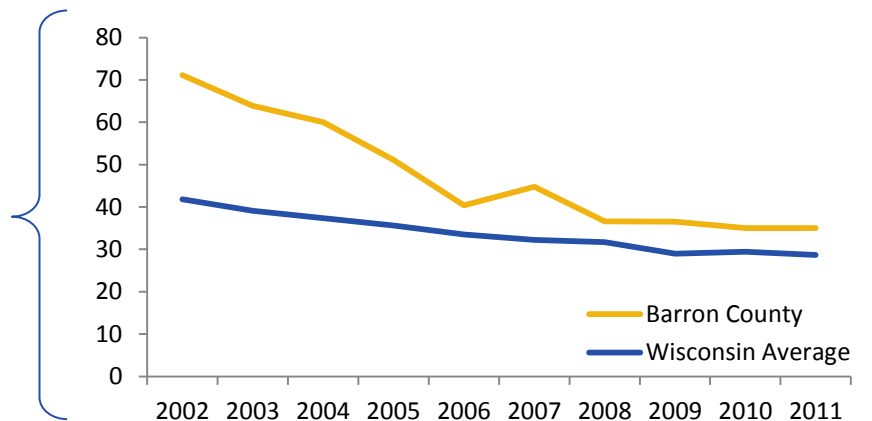
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

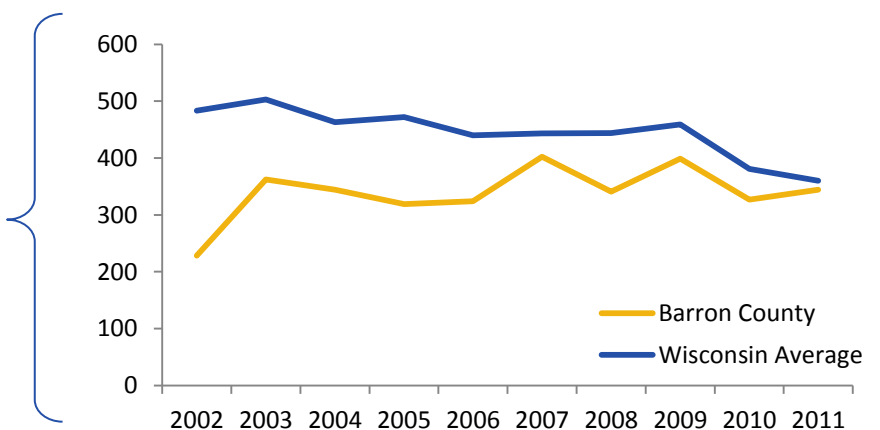
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



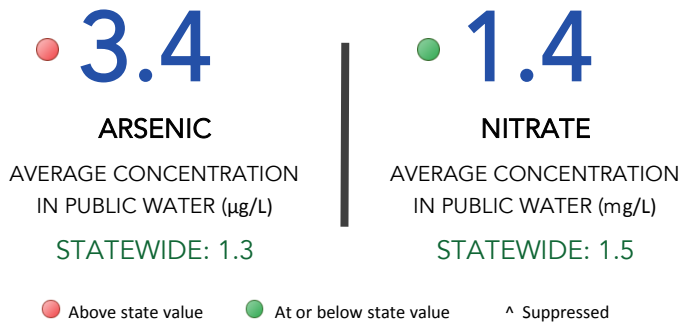
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY BARRON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

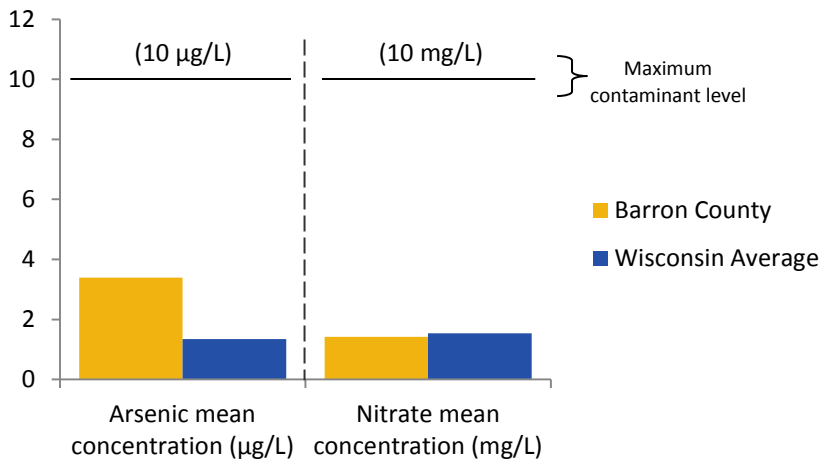
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY BARRON COUNTY

PRIVATE DRINKING WATER

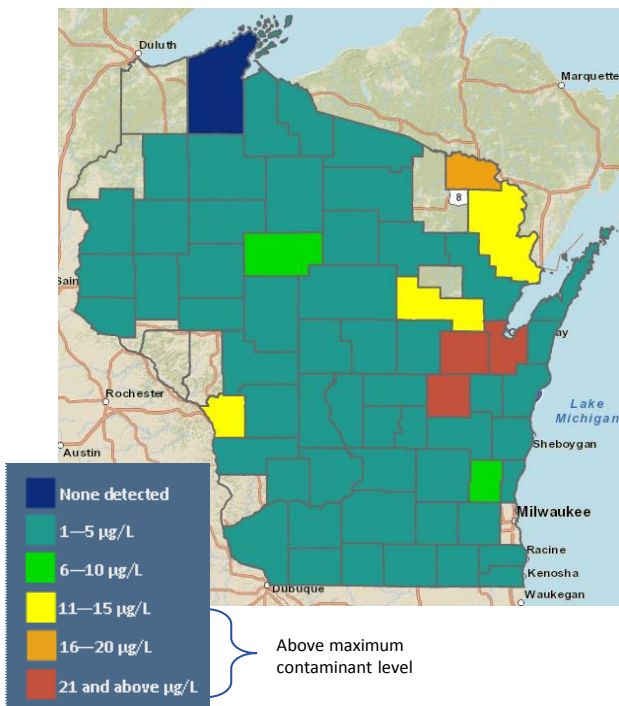
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

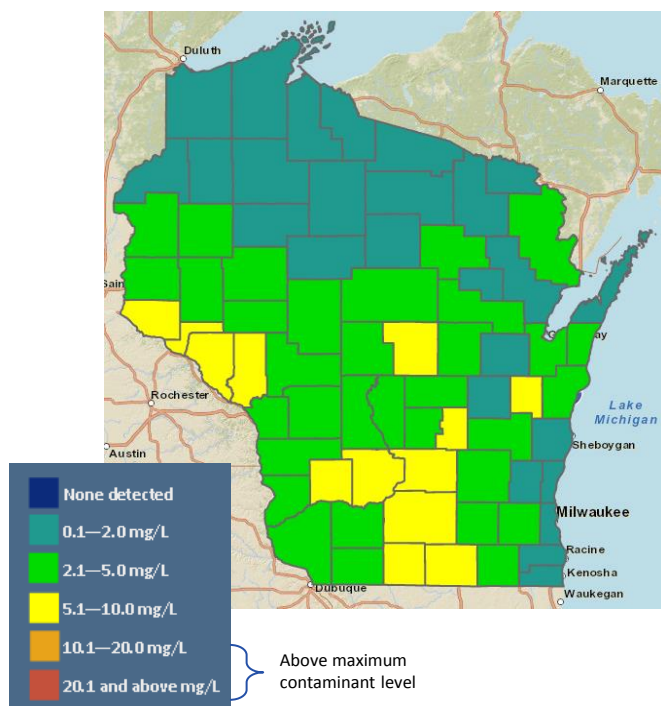
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

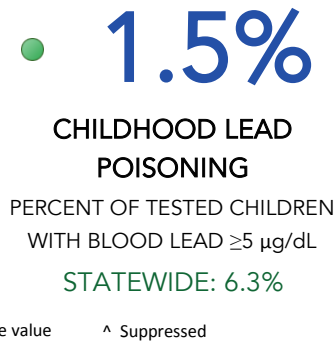
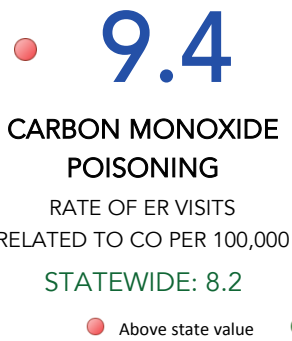


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

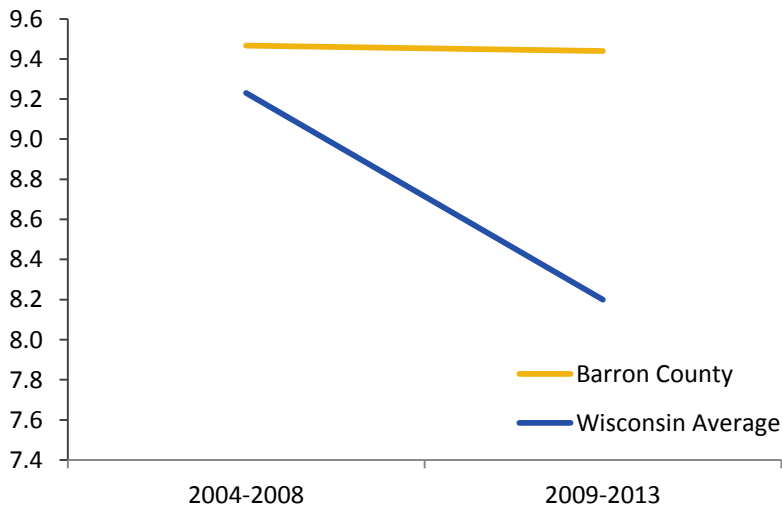


HOME HAZARDS BARRON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

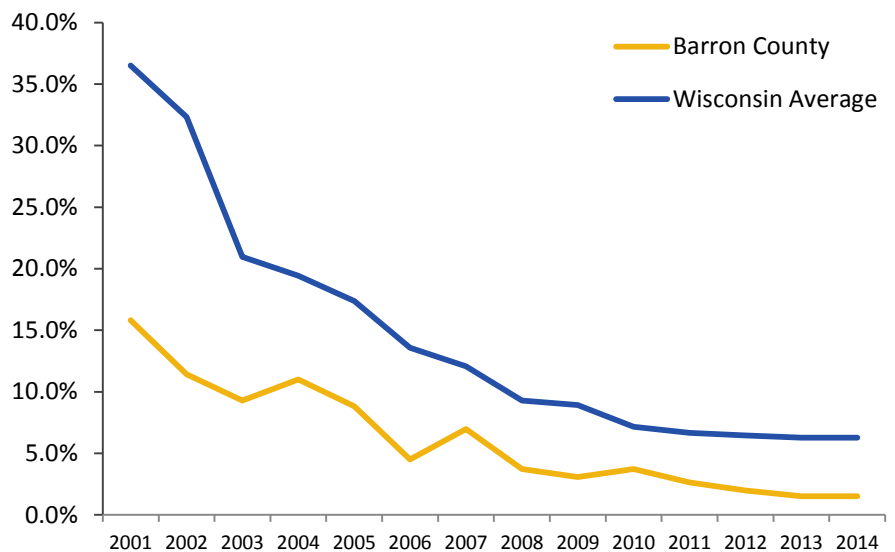
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

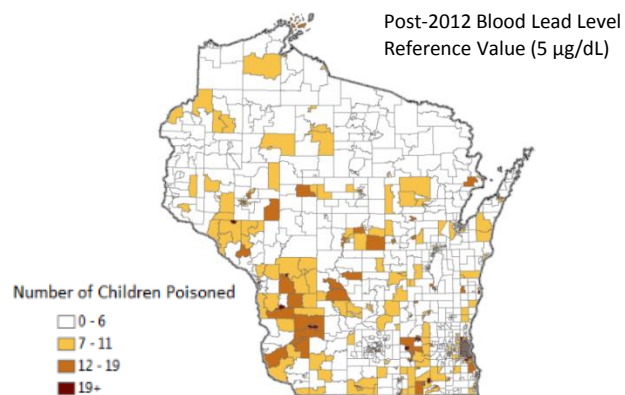
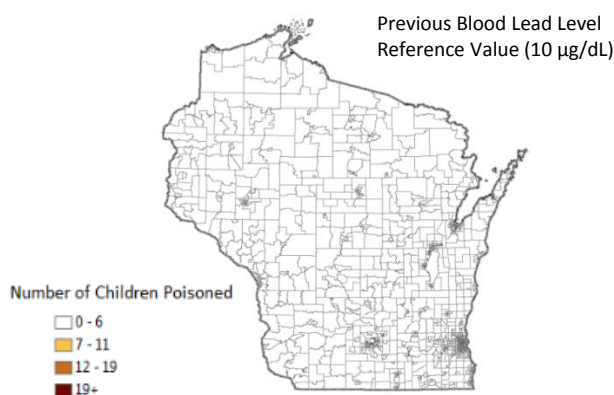
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES BARRON COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.5%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **10.3%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

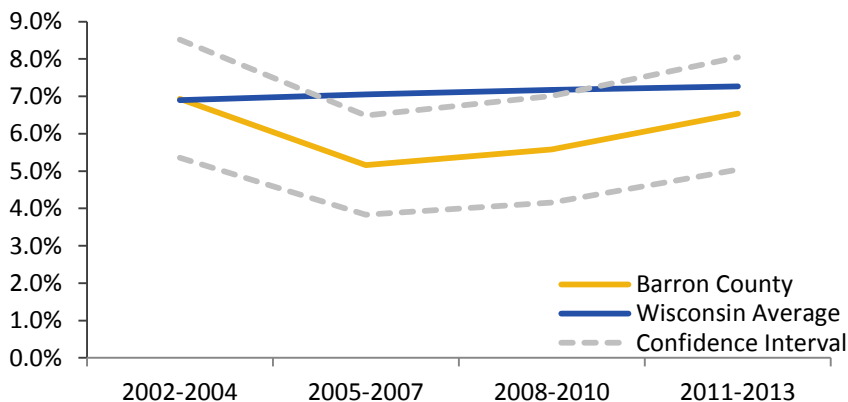
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

BARRON COUNTY

PRETERM BIRTH

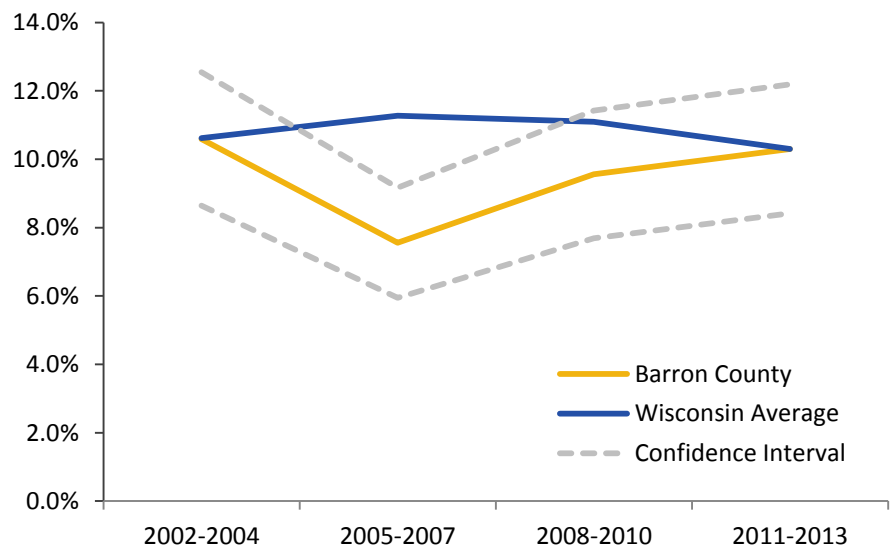
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

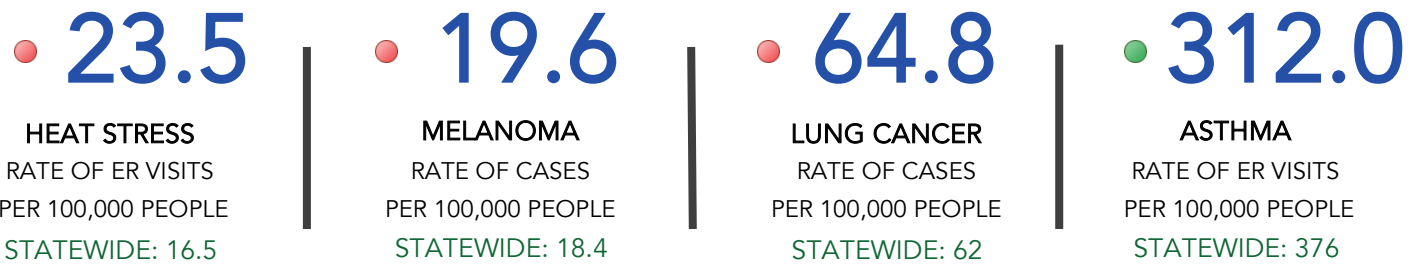
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS BARRON COUNTY

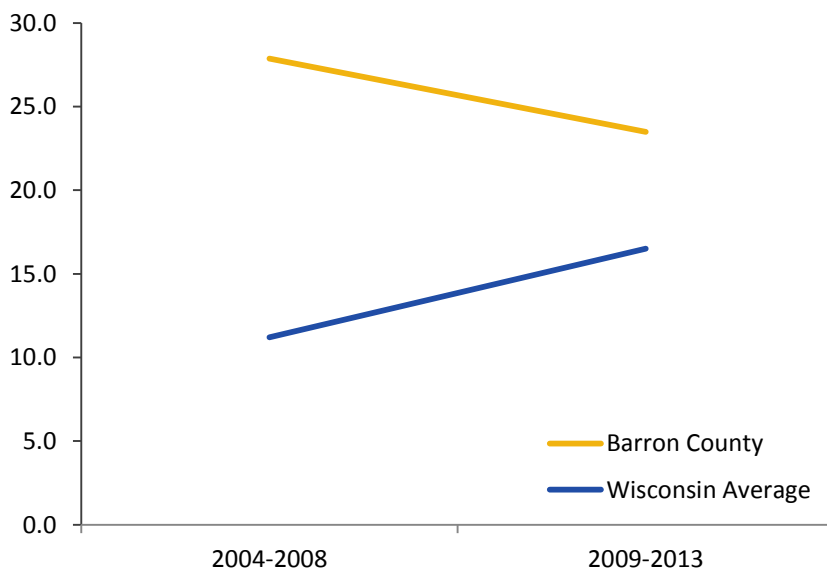
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



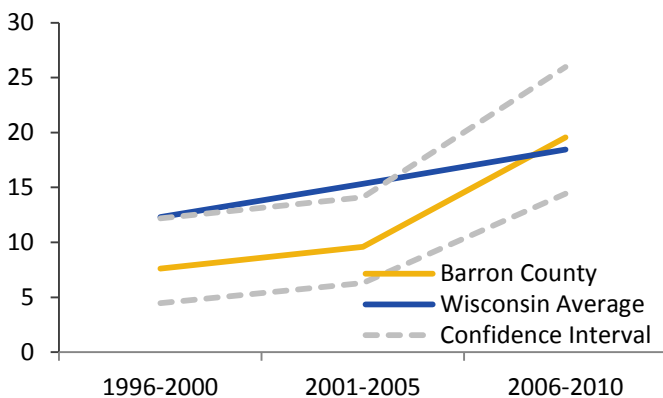


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



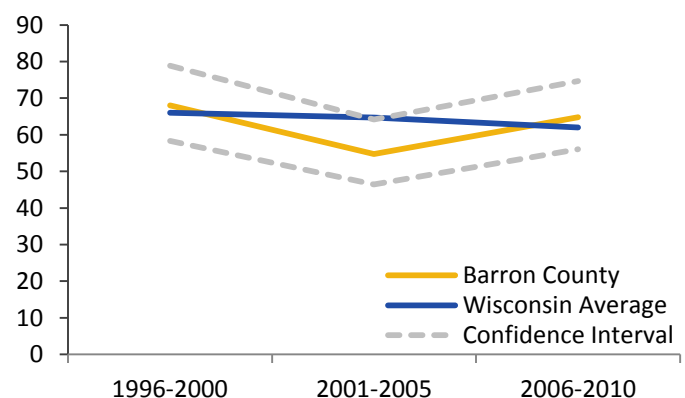
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



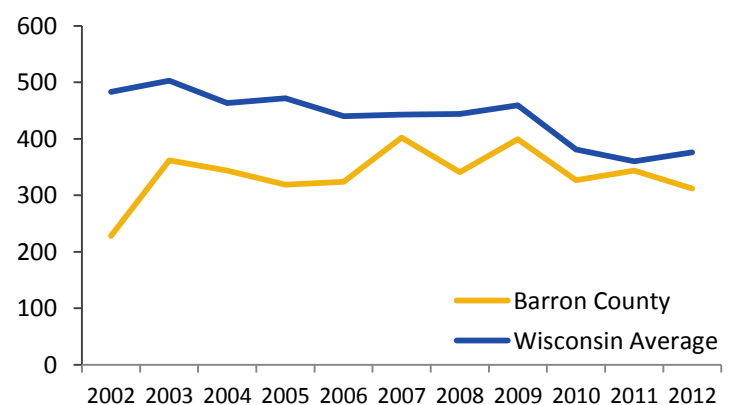
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

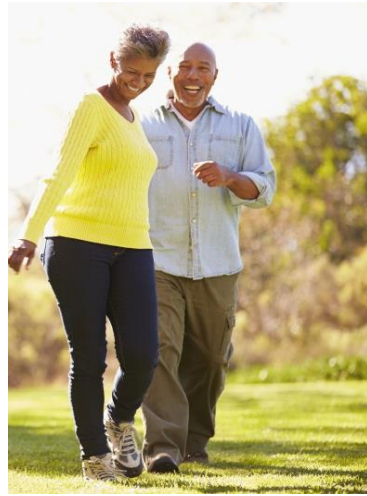
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



BAYFIELD COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BAYFIELD COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.5 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 14.7 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.8% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 8.8% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.6% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 15.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 14.7 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 58.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 244.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY BAYFIELD COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

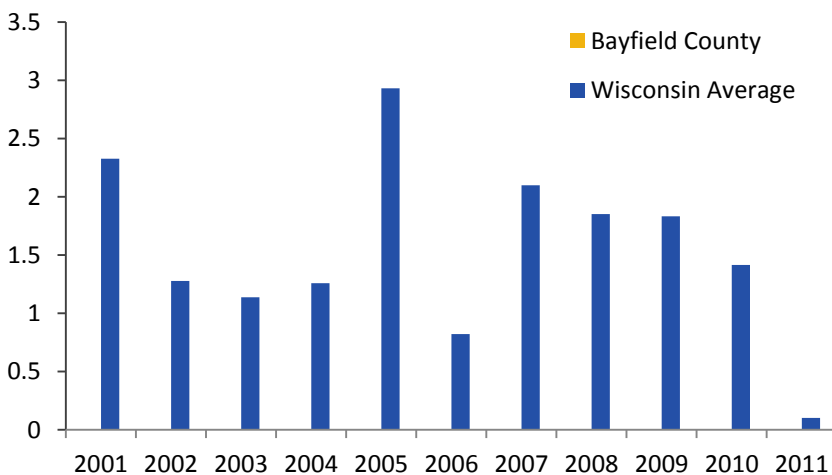
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **7.1**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

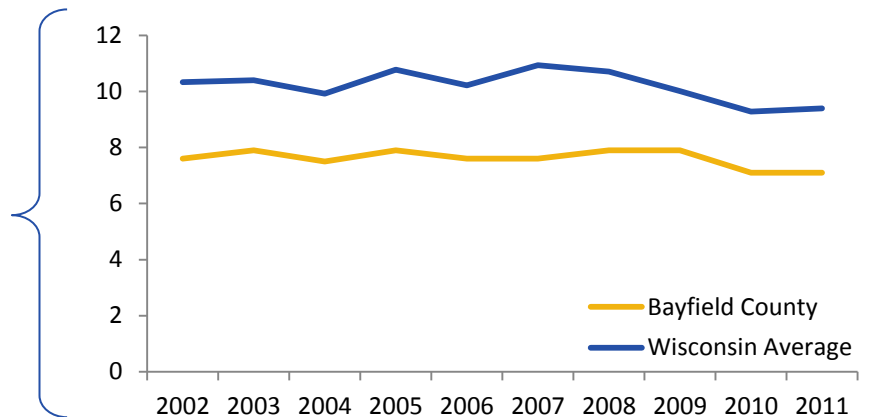
BAYFIELD COUNTY

PARTICULATE MATTER 2.5

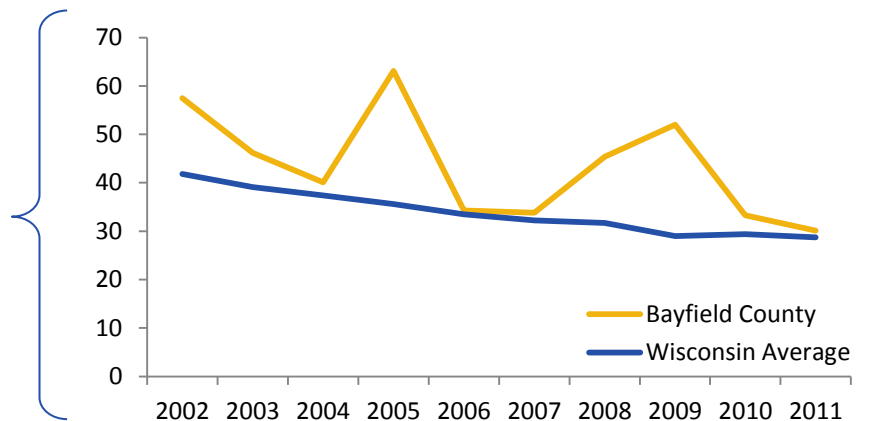
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

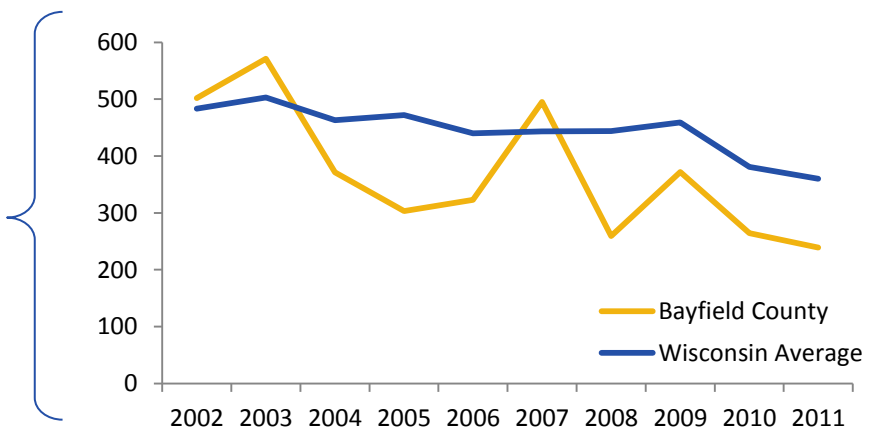
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



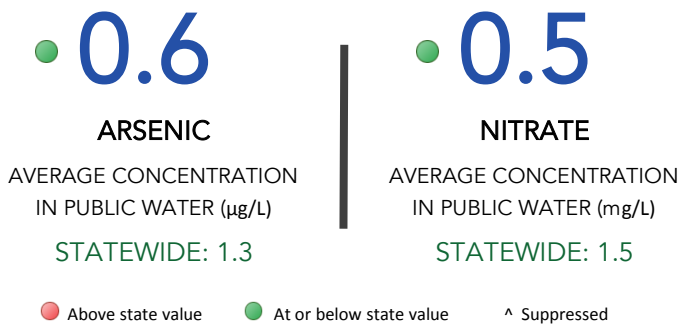
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY BAYFIELD COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

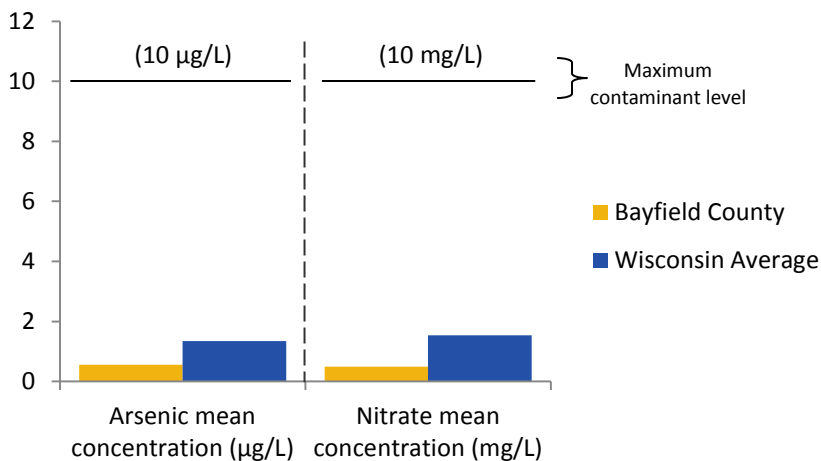
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY BAYFIELD COUNTY

PRIVATE DRINKING WATER

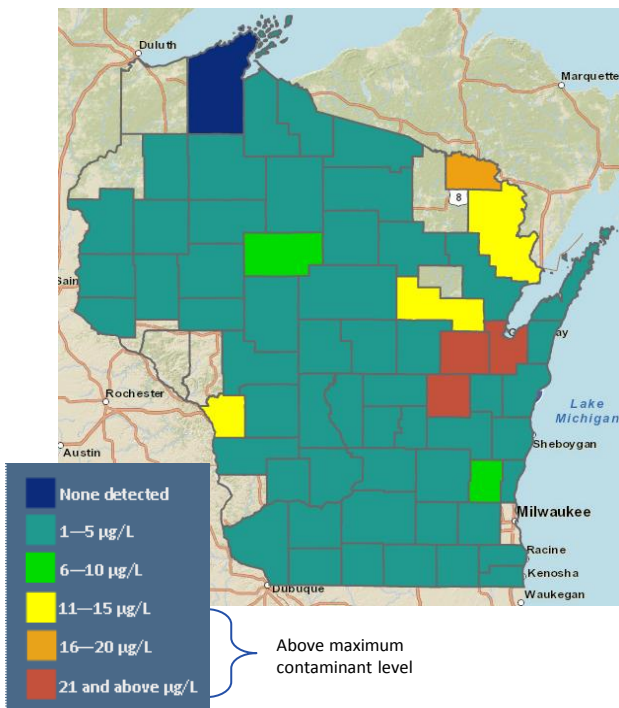
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

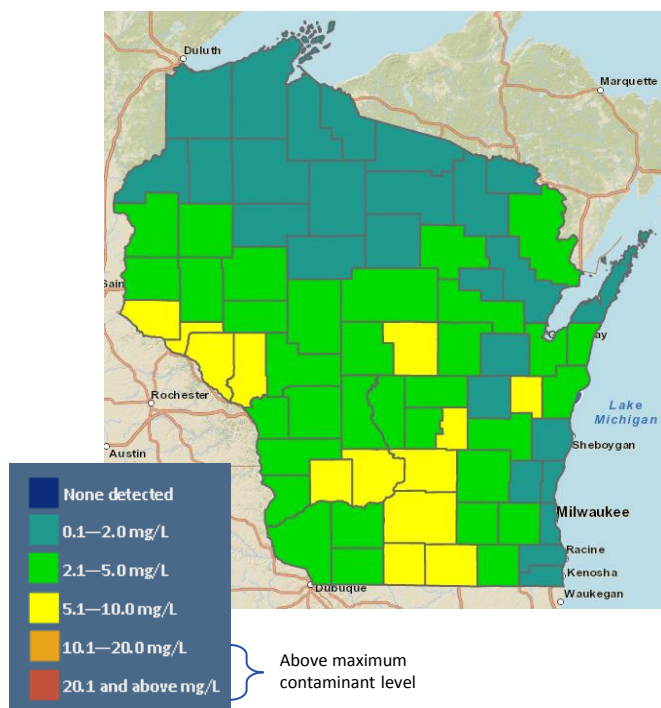
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS BAYFIELD COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **14.7**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **0.8%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

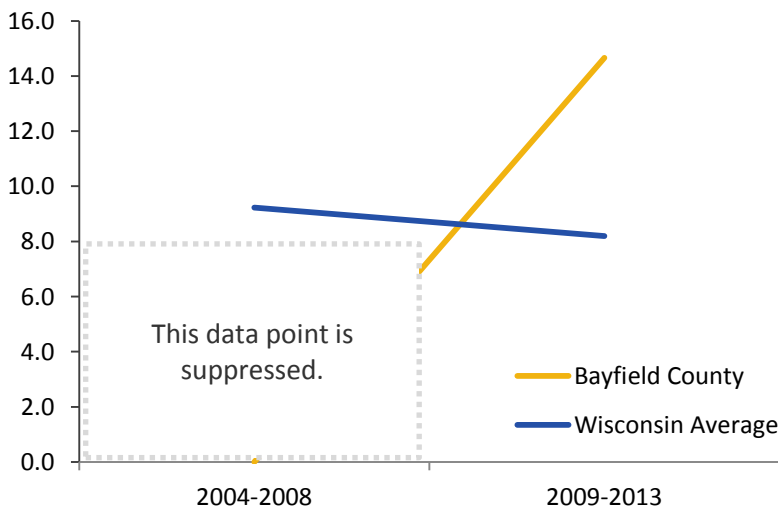
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

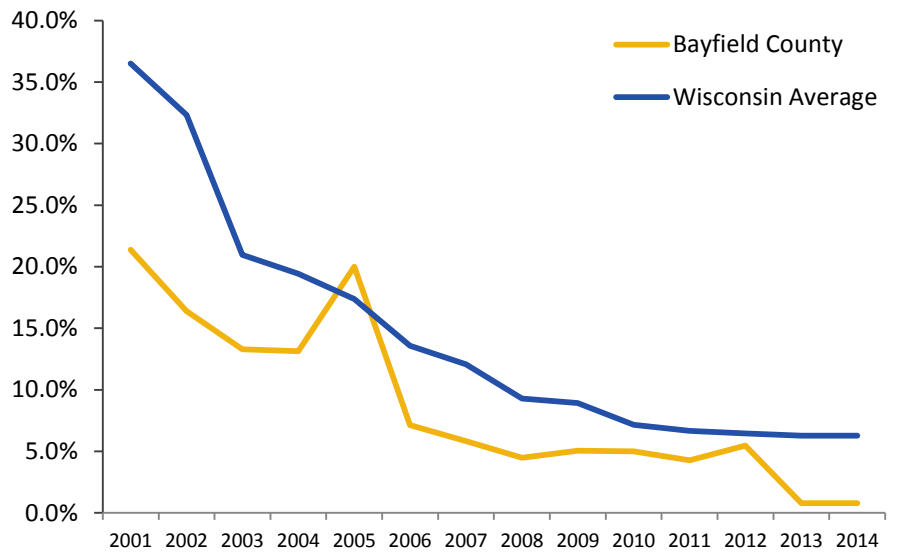
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

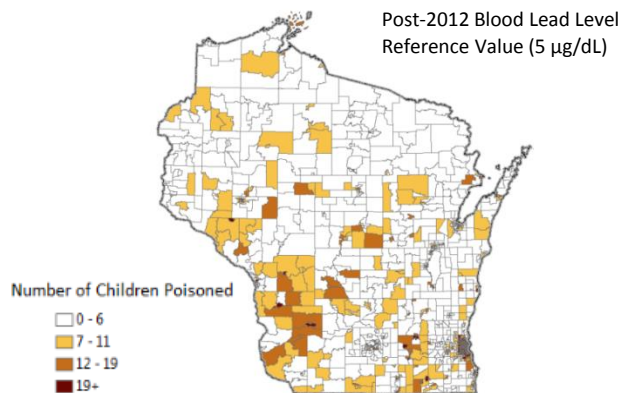
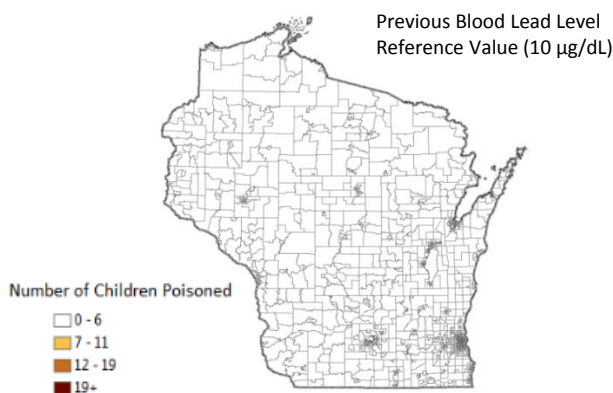
CHILDHOOD LEAD POISONING

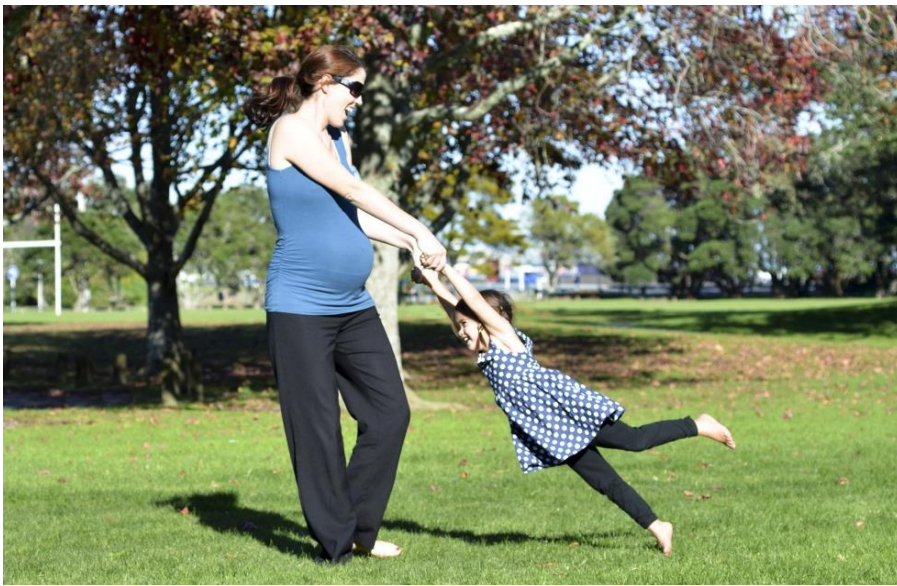
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

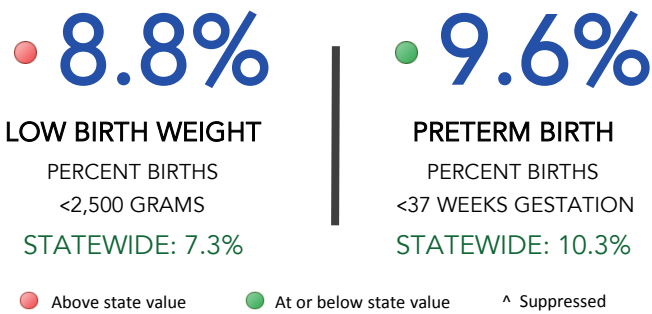
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES BAYFIELD COUNTY

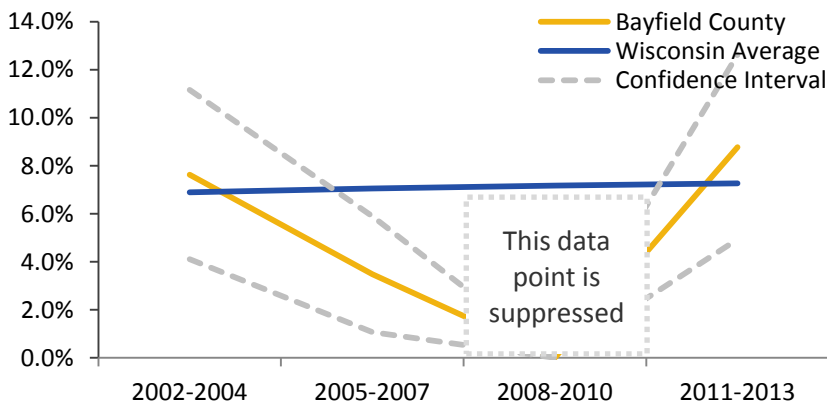
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

BAYFIELD COUNTY

PRETERM BIRTH

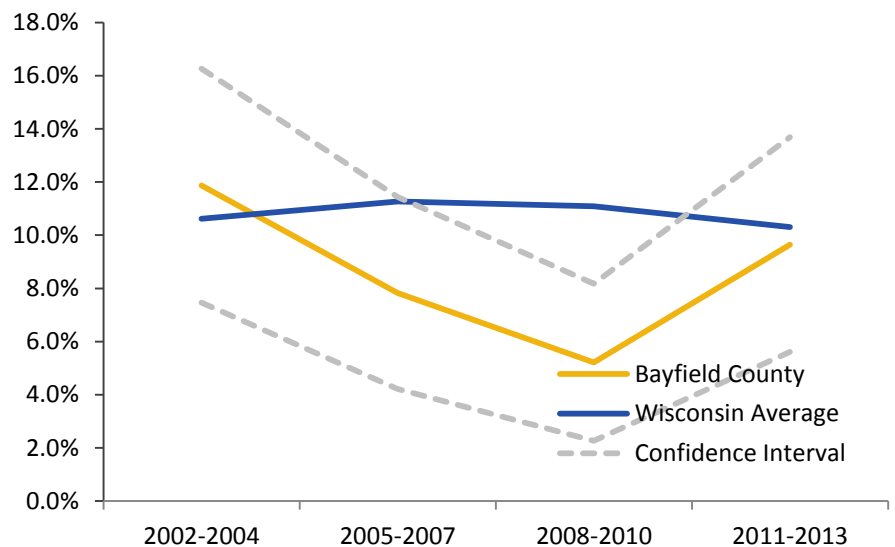
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS BAYFIELD COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **15.5**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **14.7**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **58.5**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

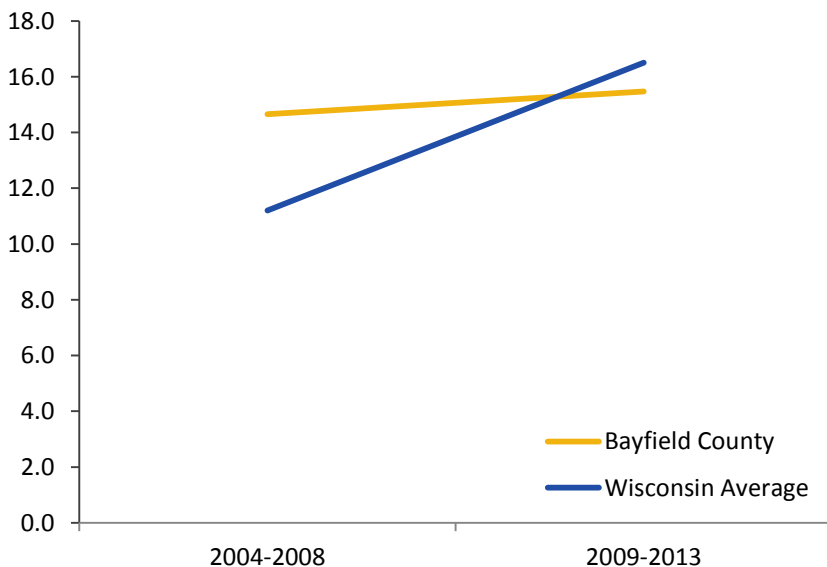
● **244.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



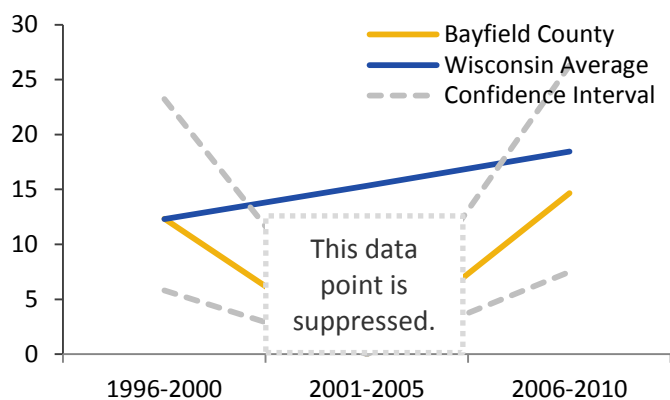


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



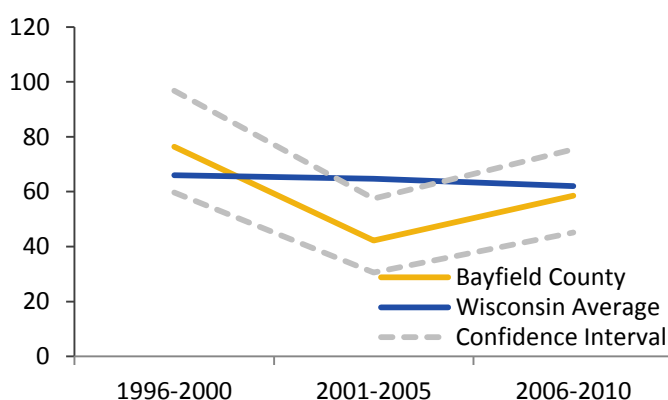
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



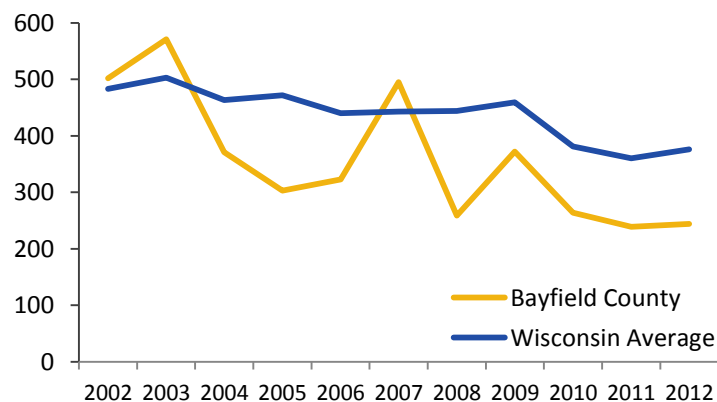
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

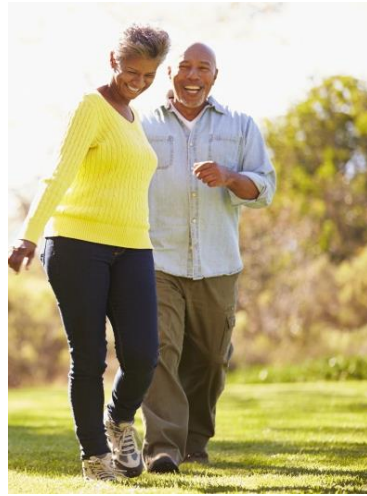
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



BROWN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BROWN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 1.8 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.1 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 11.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.3% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 21.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 30.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 58.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 461.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY BROWN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● **2.0**

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● **1.8**

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

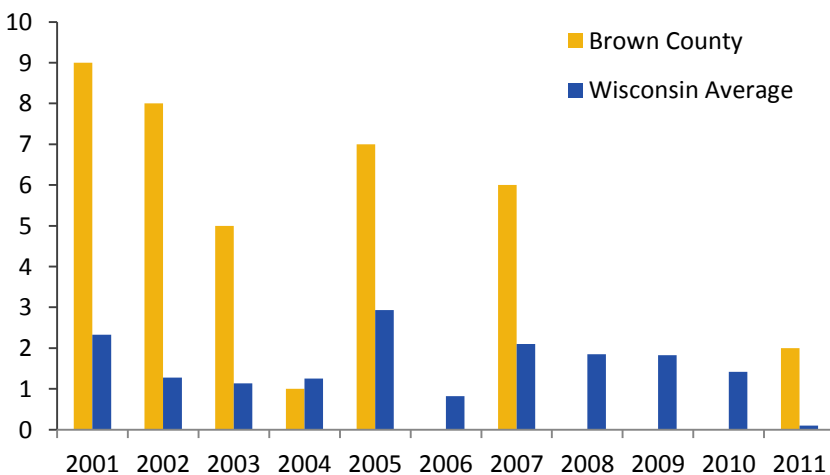
● **10.0**

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

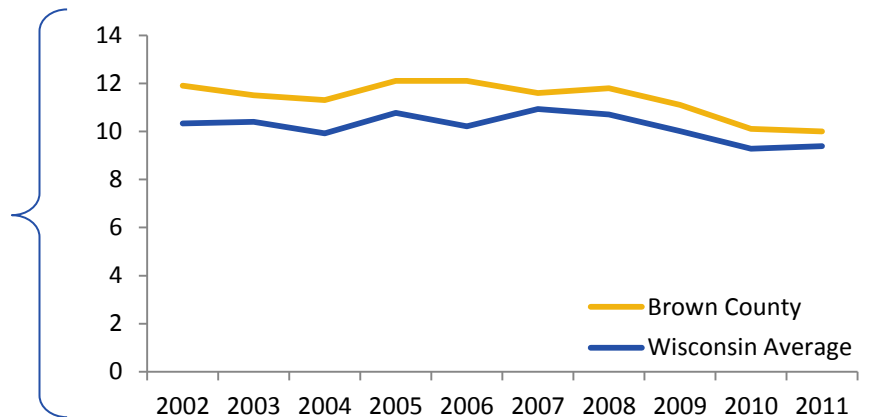
BROWN COUNTY

PARTICULATE MATTER 2.5

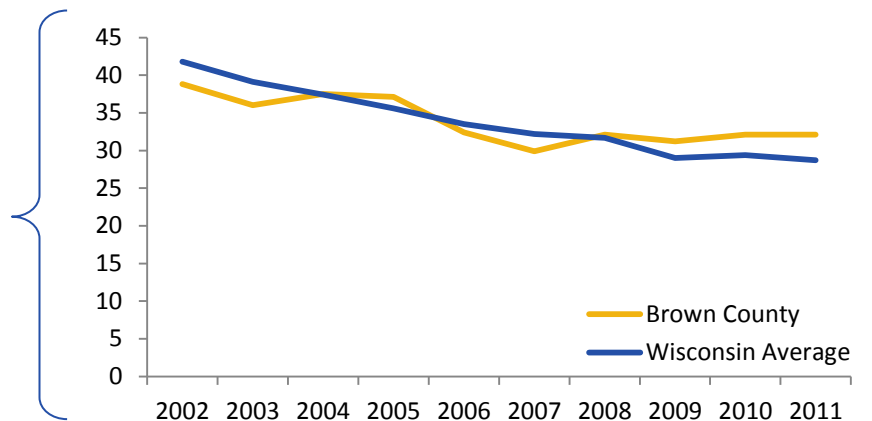
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

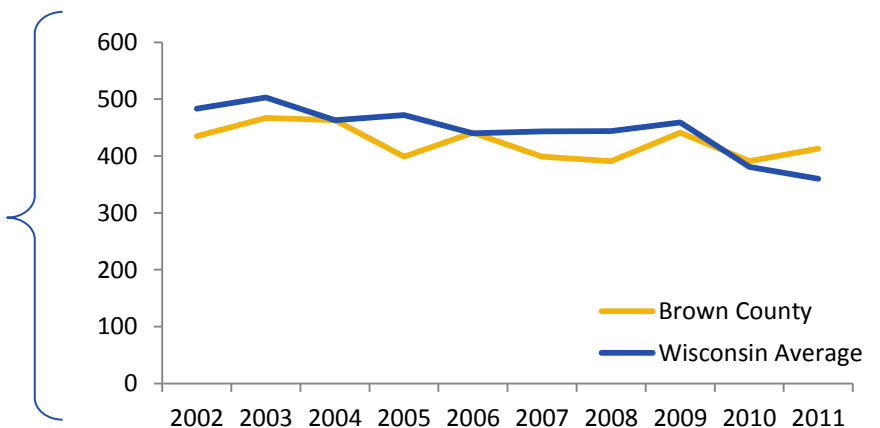
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



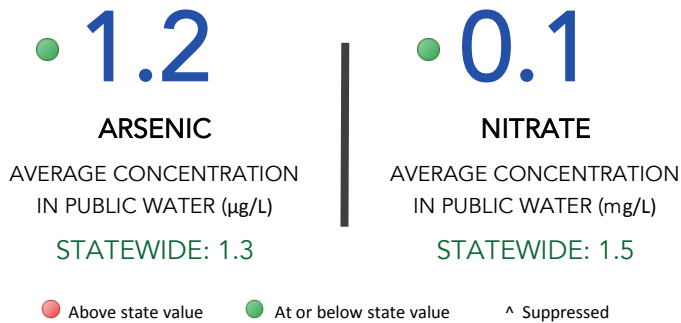
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY BROWN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

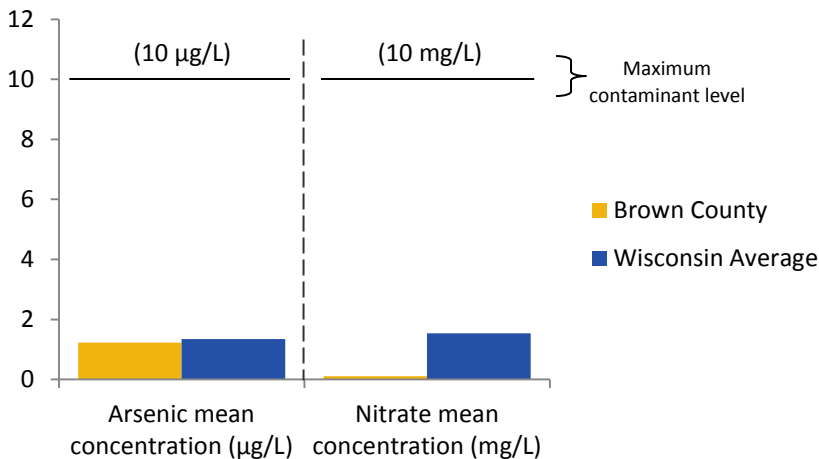
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY BROWN COUNTY

PRIVATE DRINKING WATER

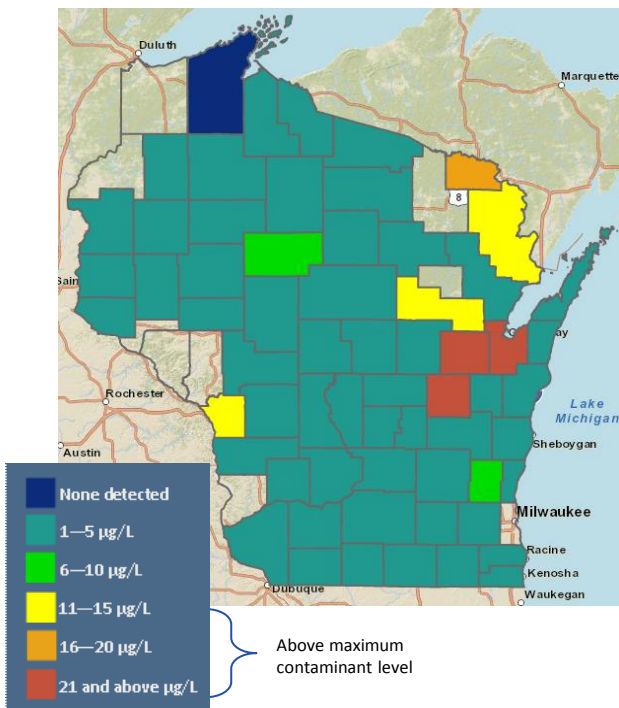
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

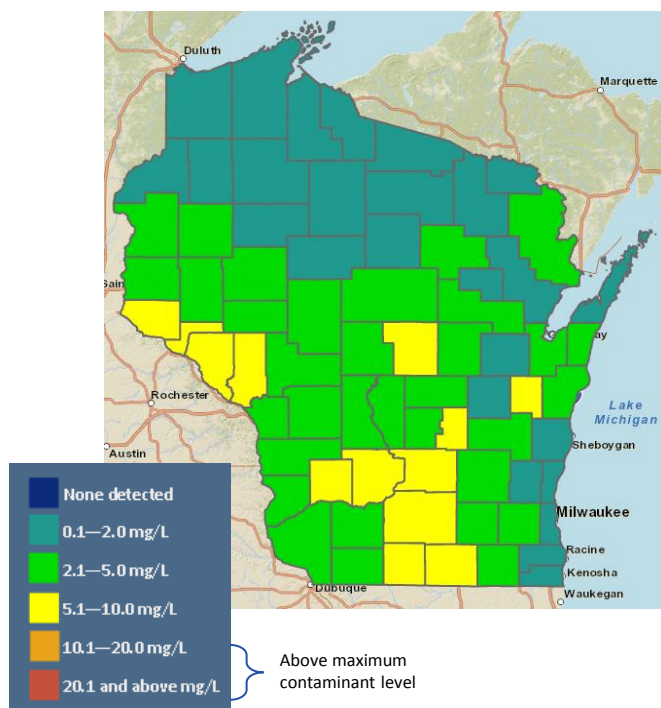
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS BROWN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **11.6**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **2.3%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

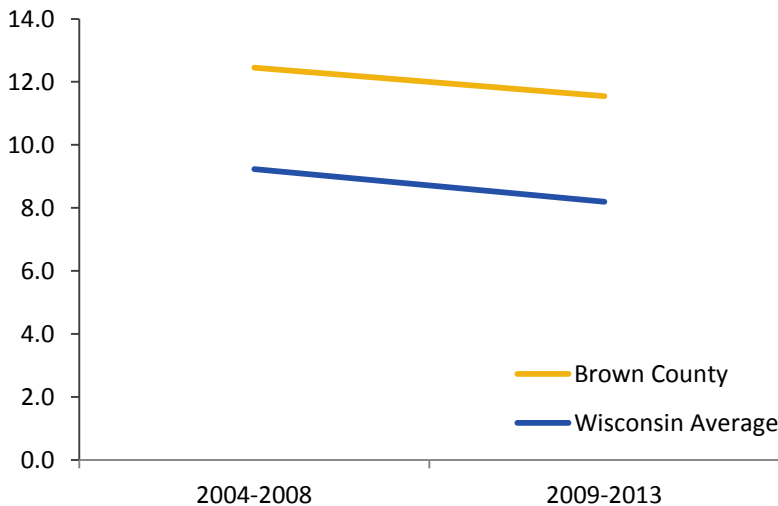
● Above state value ● At or below state value ▲ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

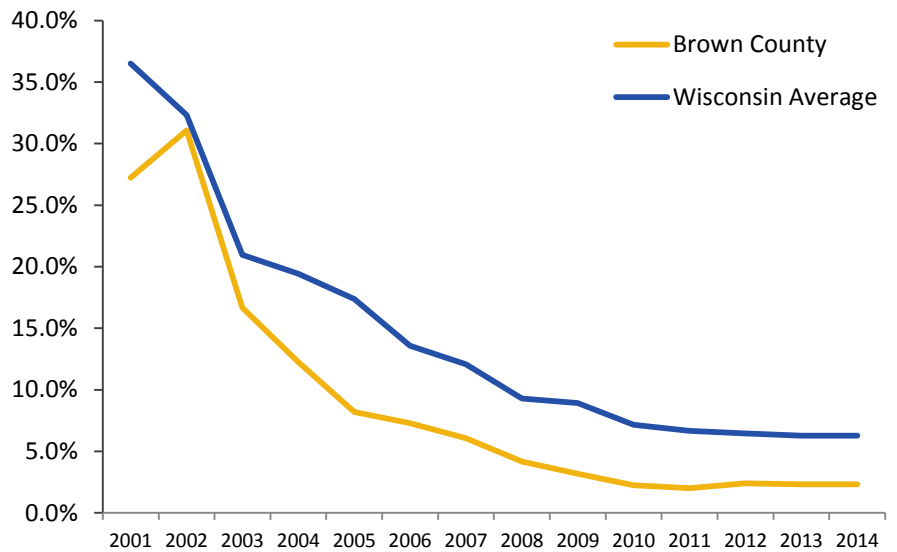
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

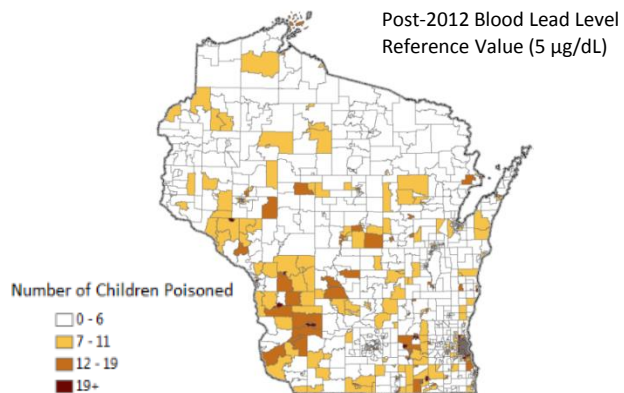
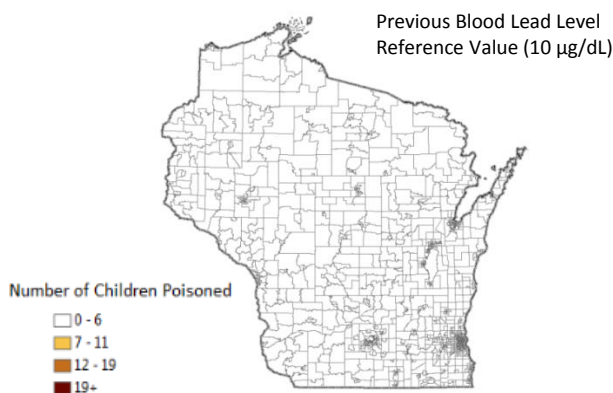
CHILDHOOD LEAD POISONING

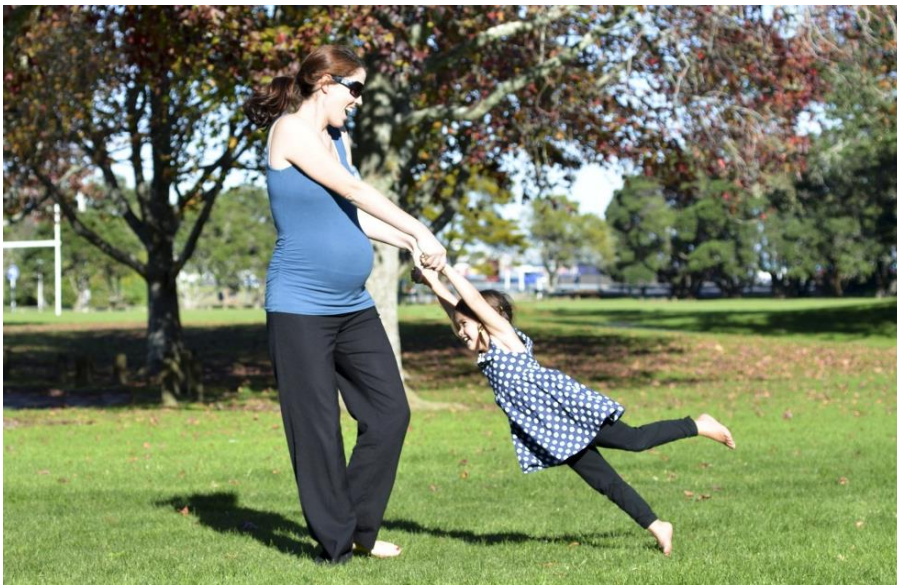
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

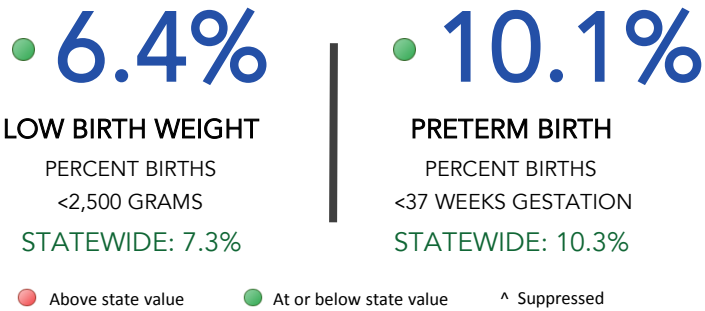
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES BROWN COUNTY

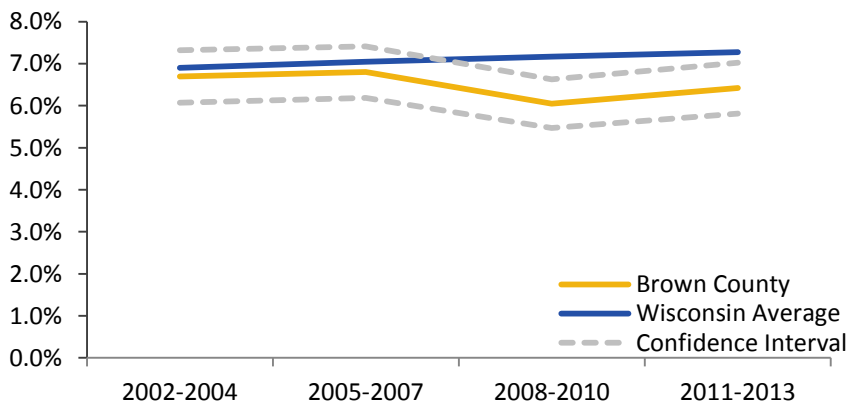
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

BROWN COUNTY

PRETERM BIRTH

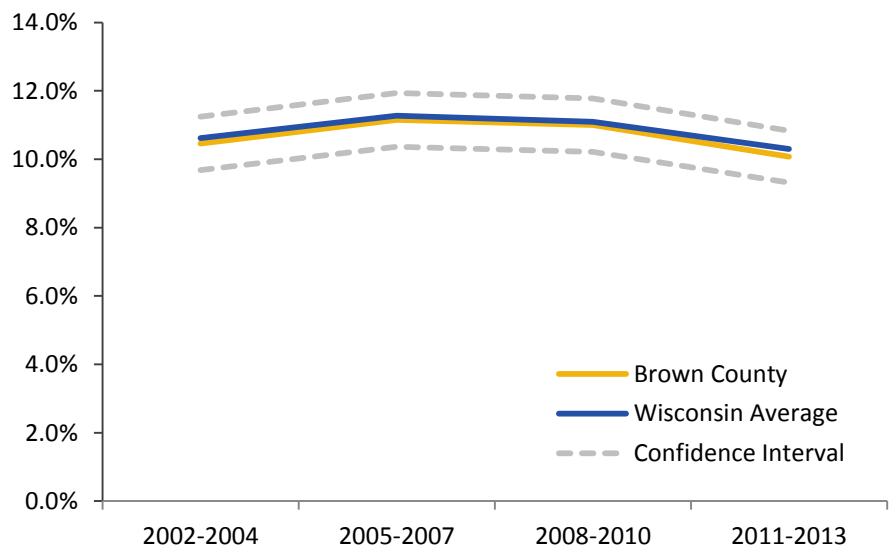
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

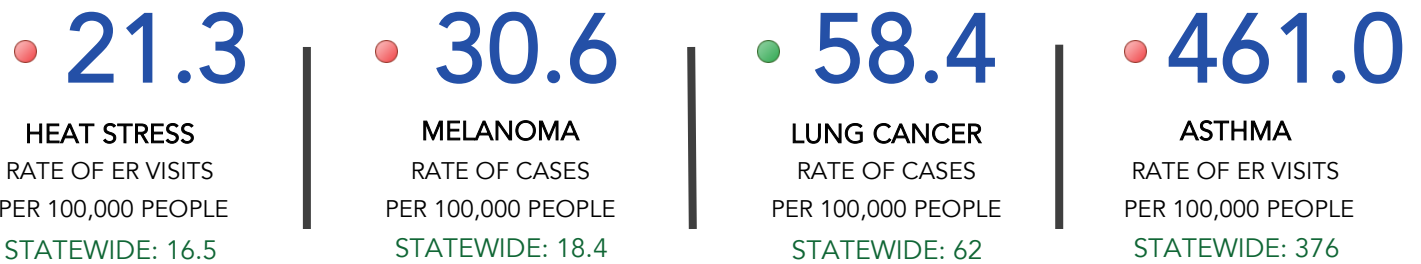
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS BROWN COUNTY

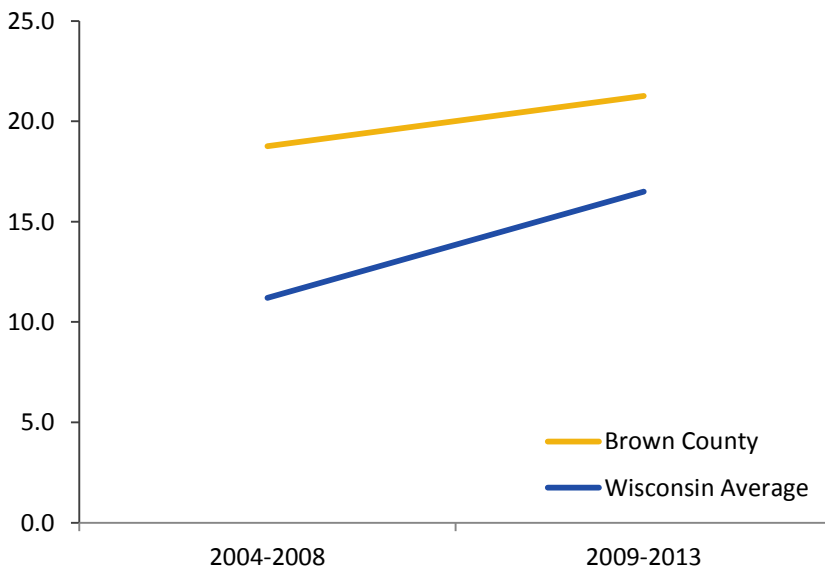
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



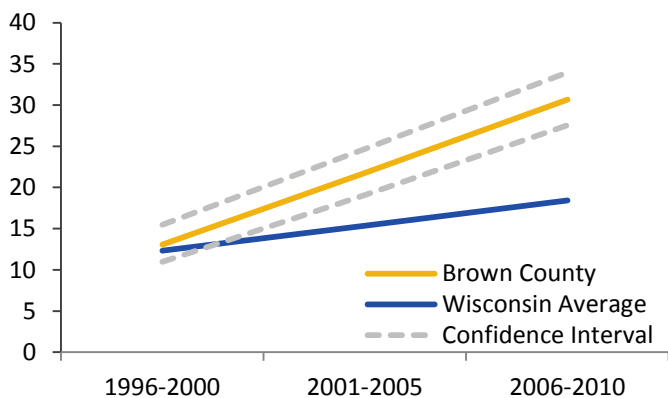


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



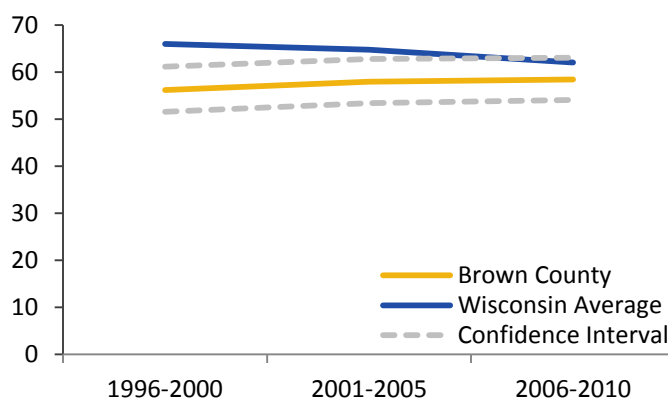
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



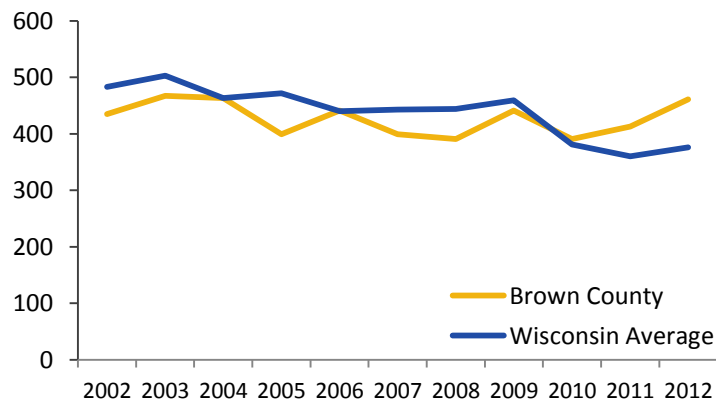
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

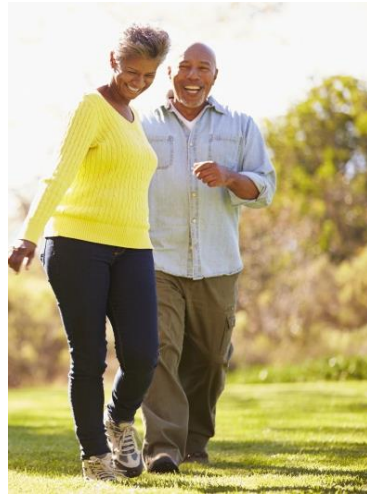
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



BUFFALO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BUFFALO COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.1 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.7 | Rate of ER visits per 100,000 people
Wisconsin: 8.7

Childhood Lead Poisoning

● 12.7% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 3.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 22.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 9.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 49.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 257.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Due to small numbers, aggregated rates were calculated for this county.
Years displayed in this profile: Aggregated data from 2004-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY BUFFALO COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

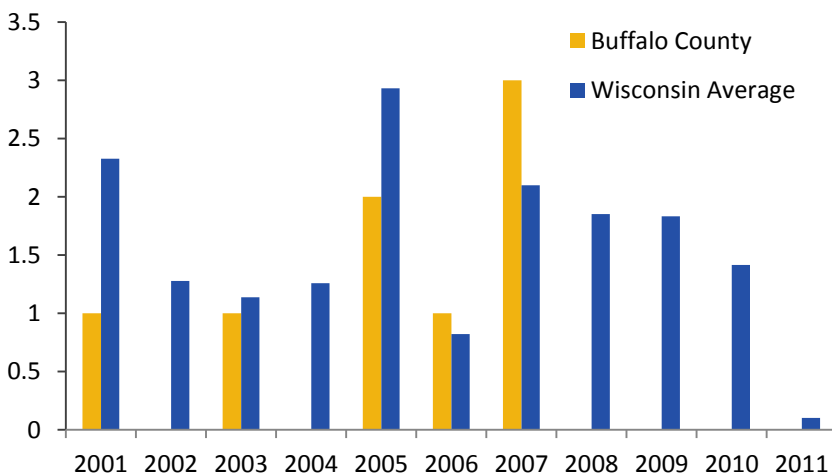
● 9.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

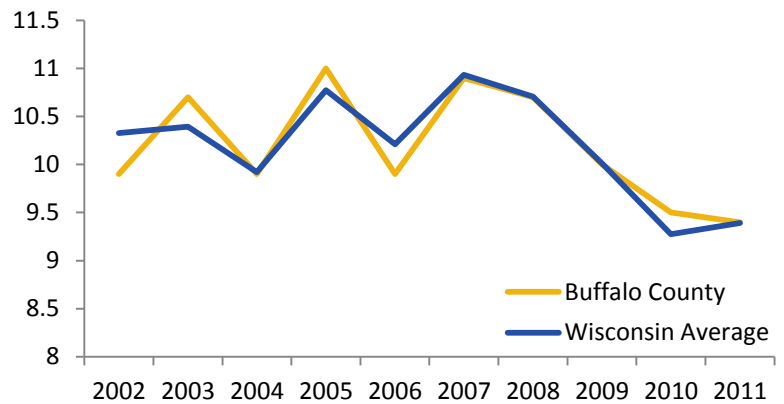
BUFFALO COUNTY

PARTICULATE MATTER 2.5

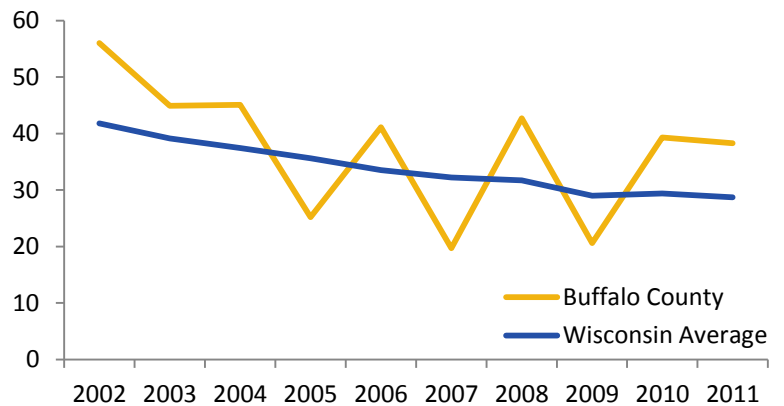
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

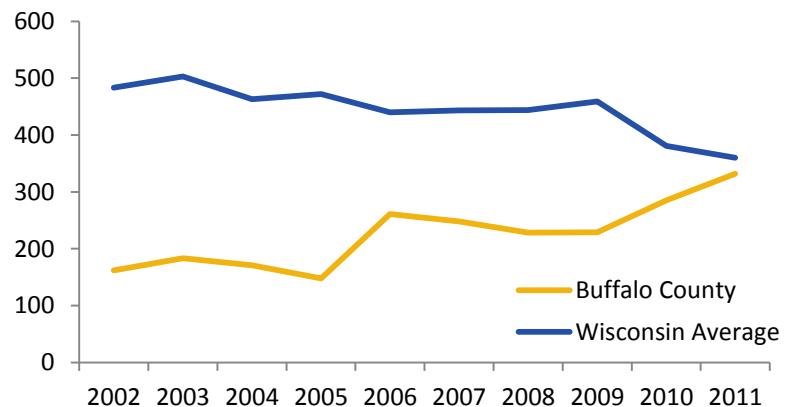
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY BUFFALO COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● 0.1

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● 1.0

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

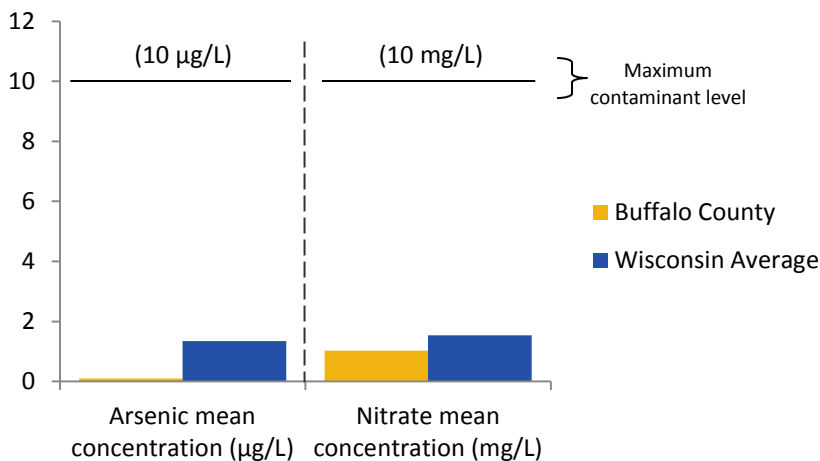
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY BUFFALO COUNTY

PRIVATE DRINKING WATER

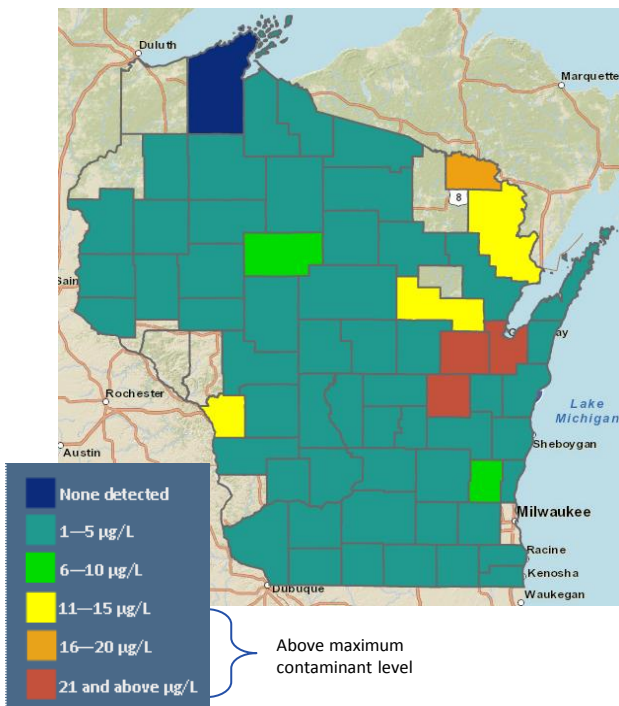
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

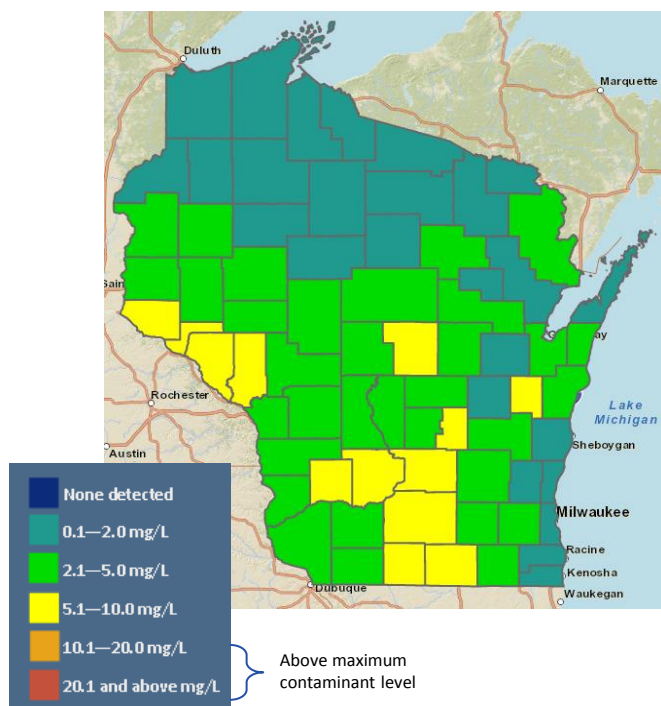
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS BUFFALO COUNTY

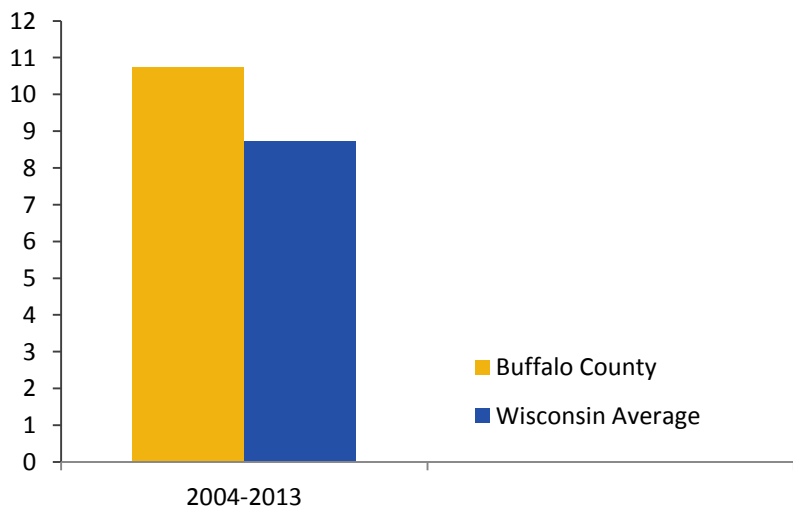
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

• **10.7**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.7

• **12.7%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

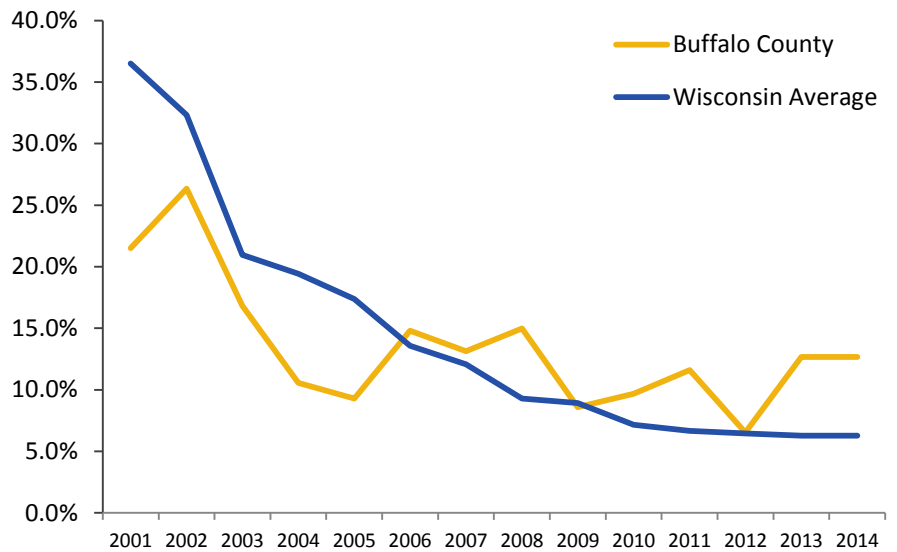
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

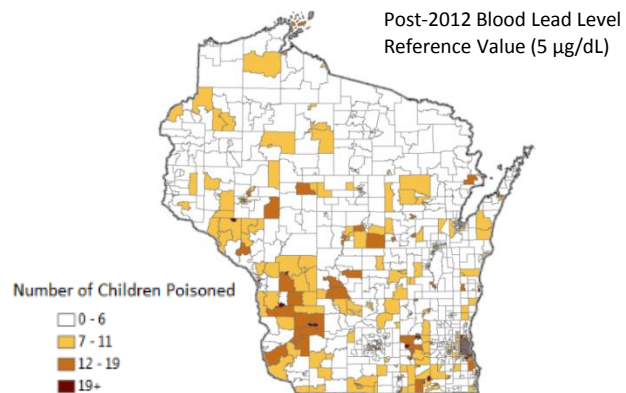
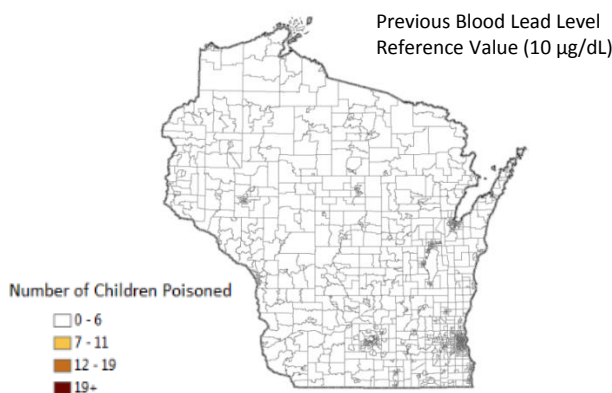
CHILDHOOD LEAD POISONING

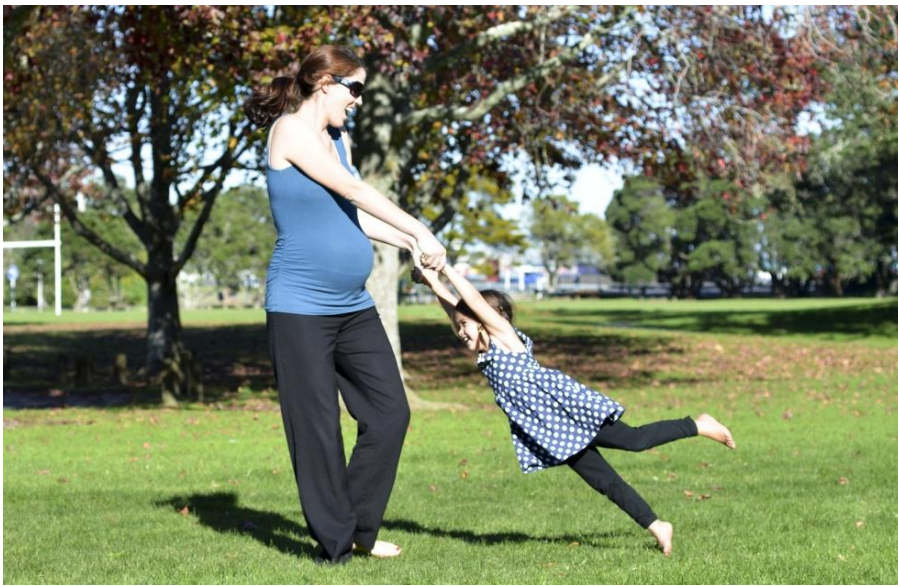
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

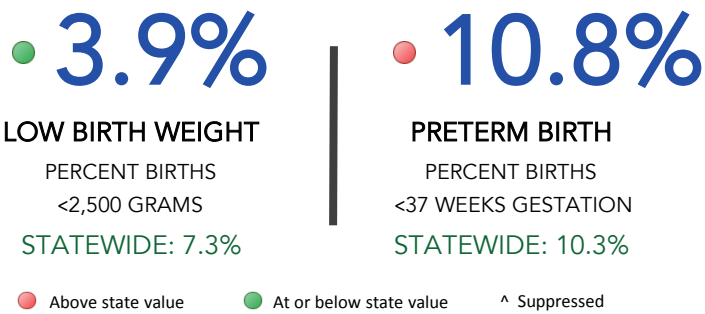
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES BUFFALO COUNTY

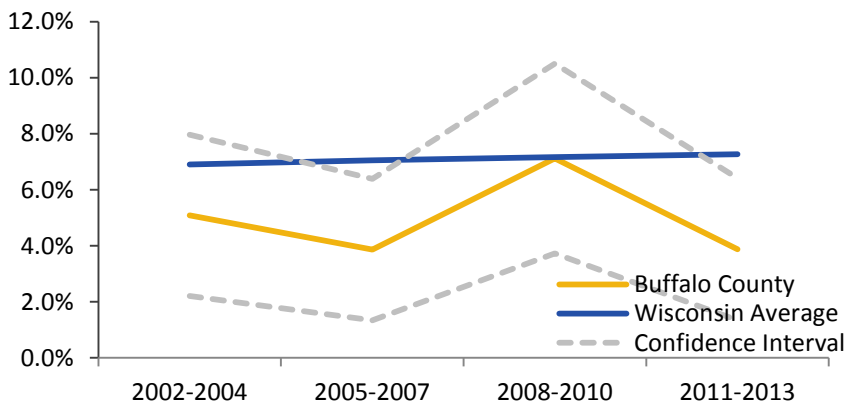
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

BUFFALO COUNTY

PRETERM BIRTH

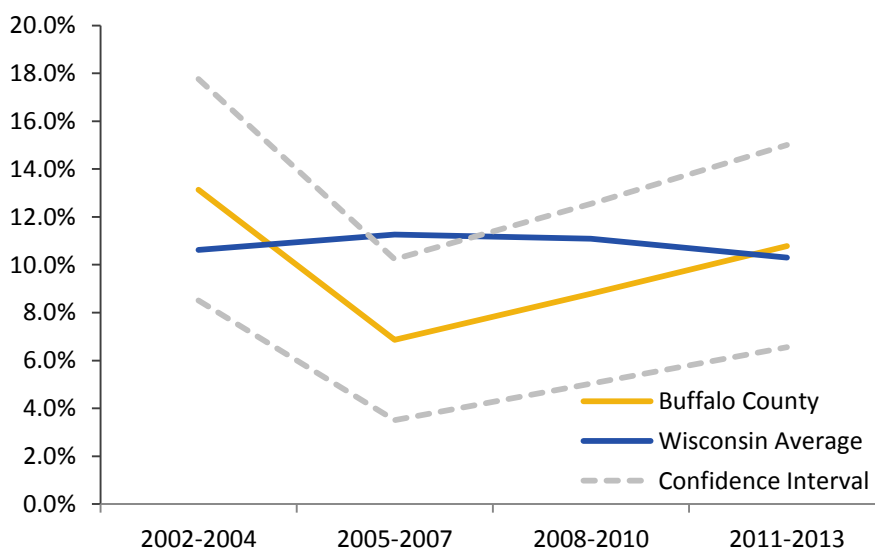
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS BUFFALO COUNTY

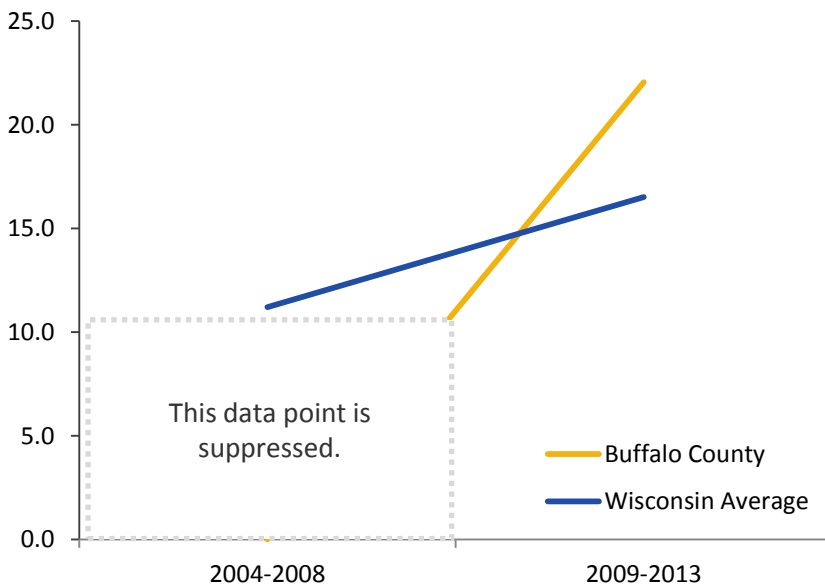
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● 22.0 HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5	● 9.2 MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4	● 49.3 LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62	● 257.0 ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376
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● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



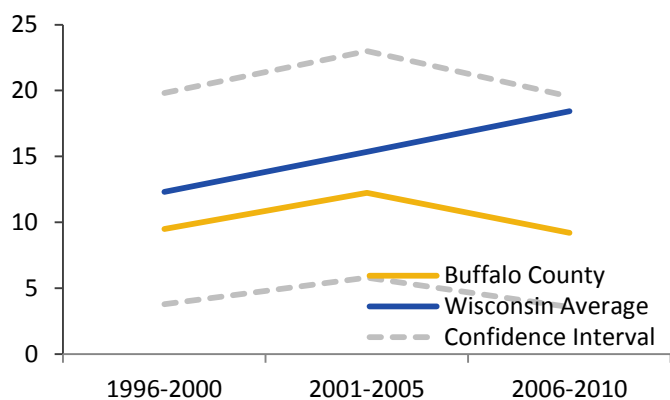


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



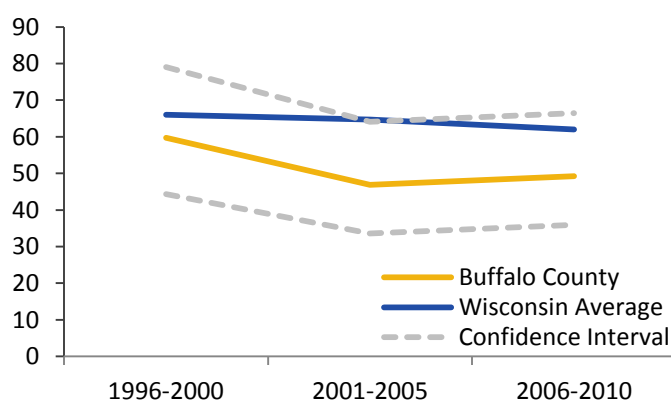
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



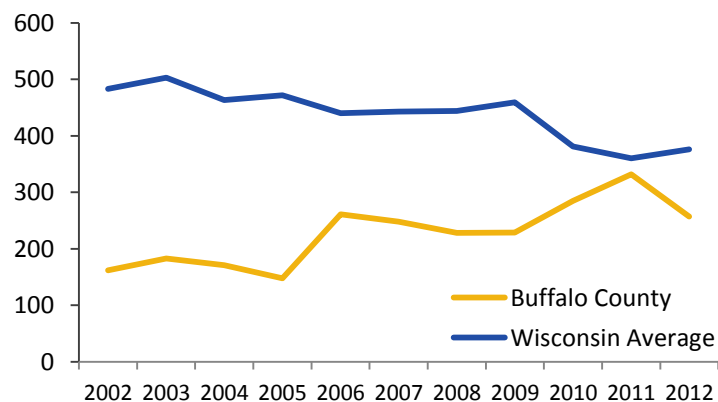
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data aggregated from 2004-2013 displayed on the dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. Due to small numbers, aggregated rates were calculated for this county.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

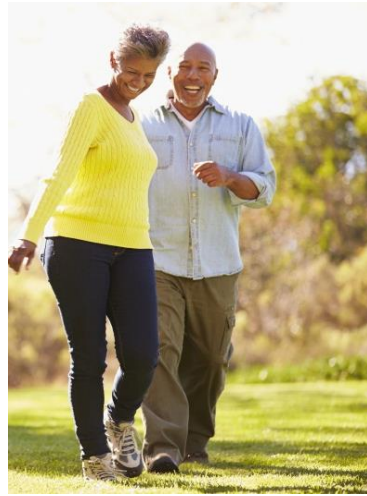
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Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



BURNETT COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

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BURNETT COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.1 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 0.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 11.7 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.2% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.0% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 14.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 10.9 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 63.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 298.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY BURNETT COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

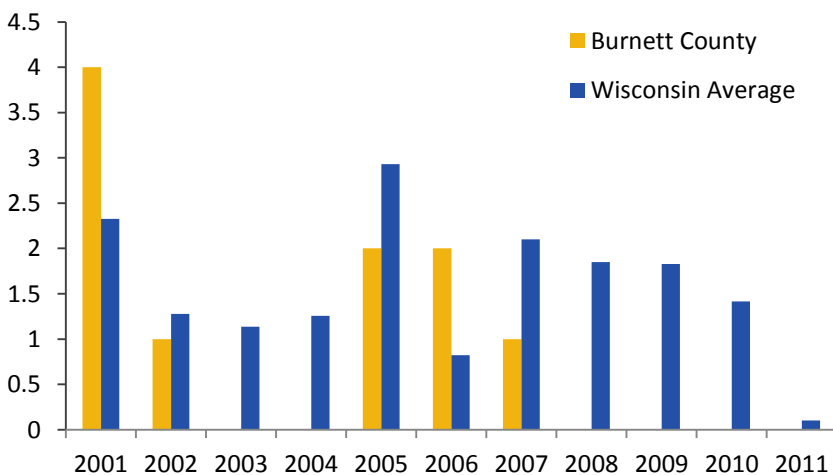
● 8.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

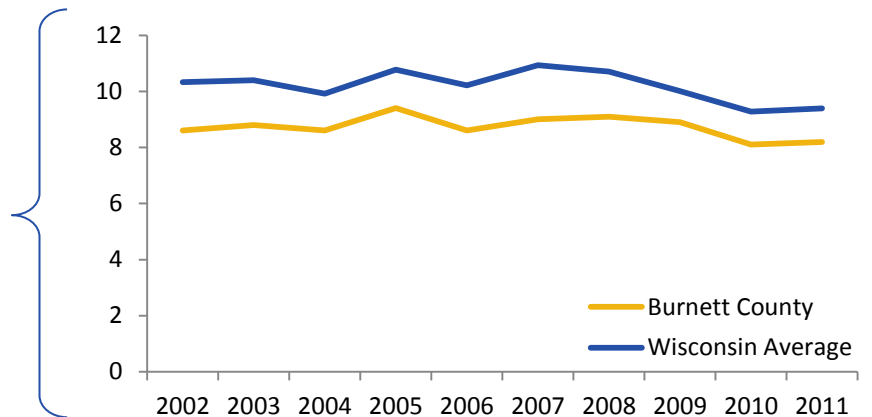
BURNETT COUNTY

PARTICULATE MATTER 2.5

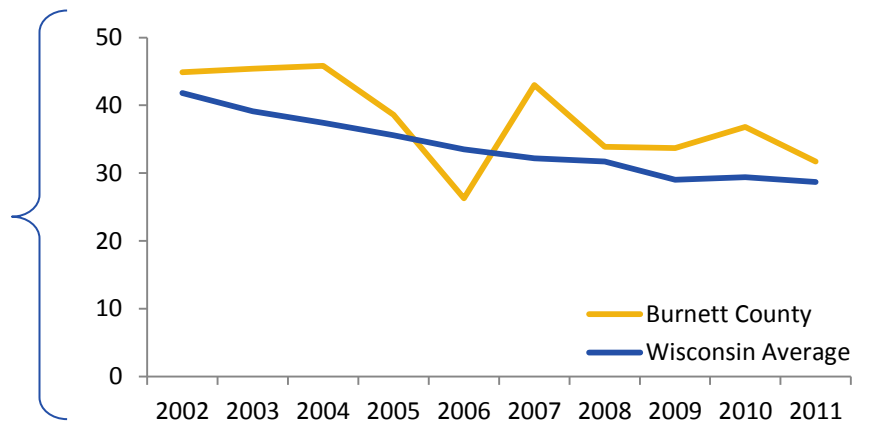
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

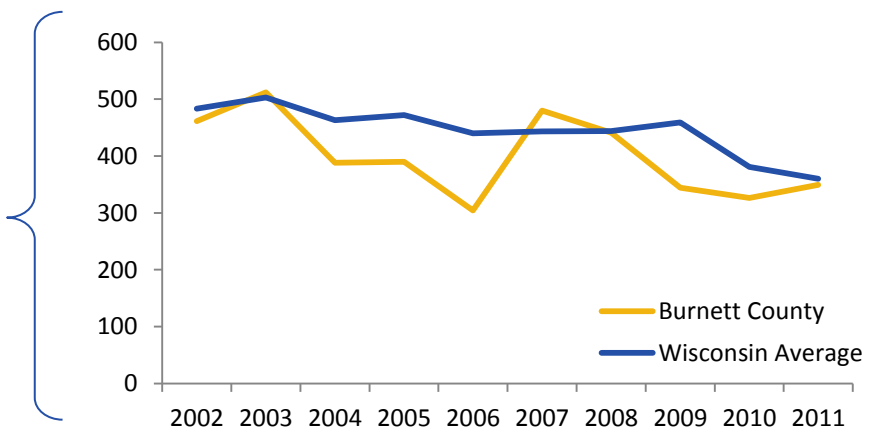
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



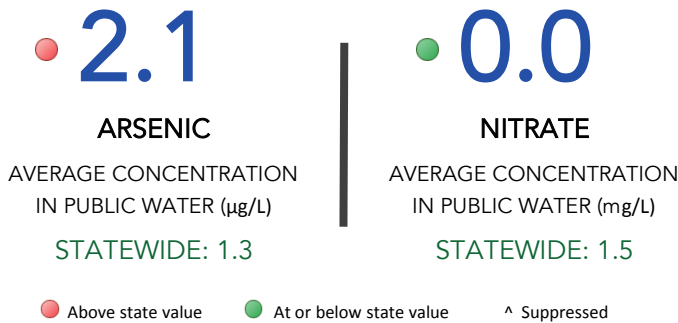
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY BURNETT COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

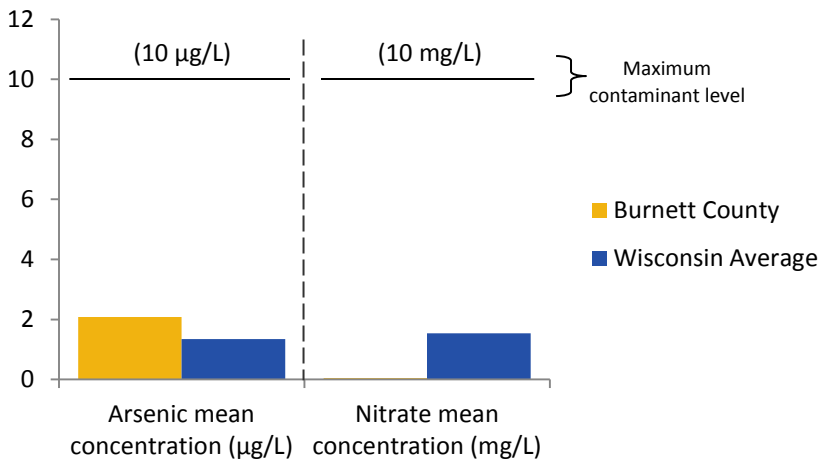
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY BURNETT COUNTY

PRIVATE DRINKING WATER

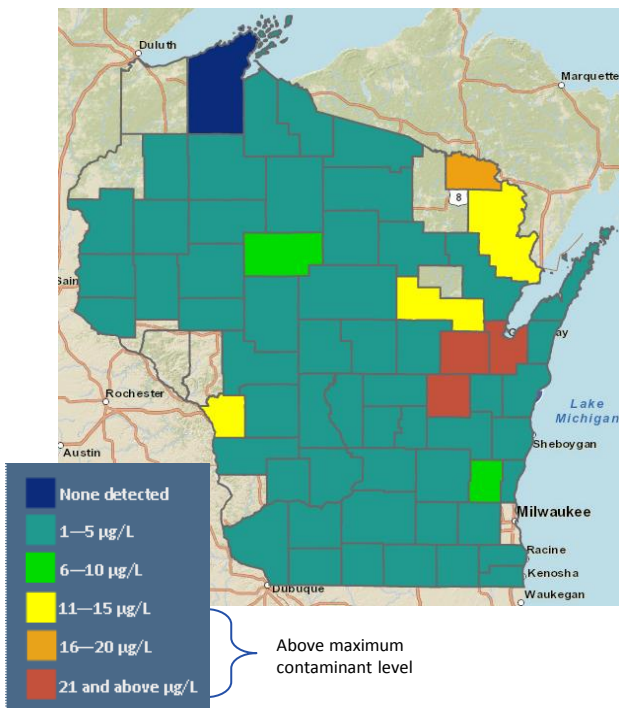
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

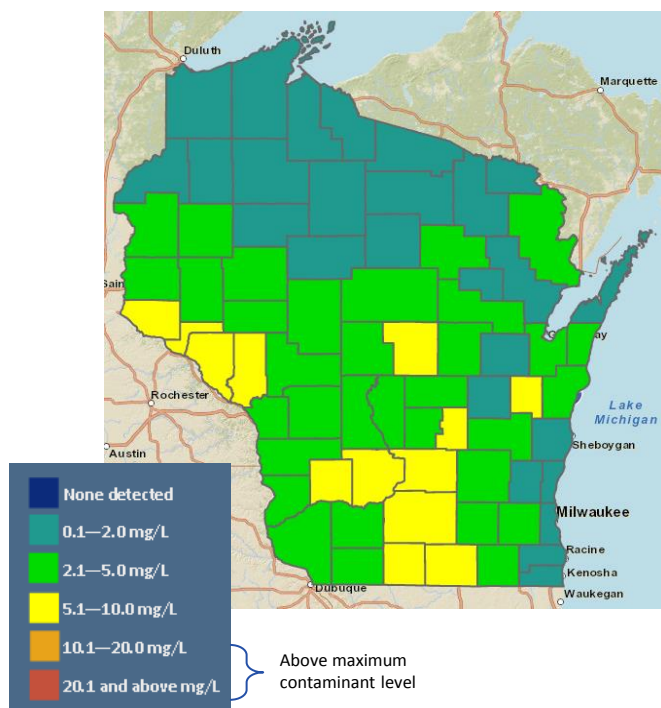
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

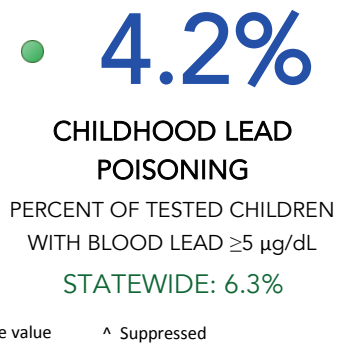
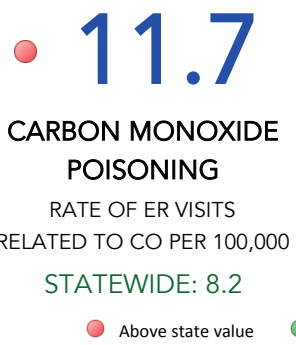


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS BURNETT COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

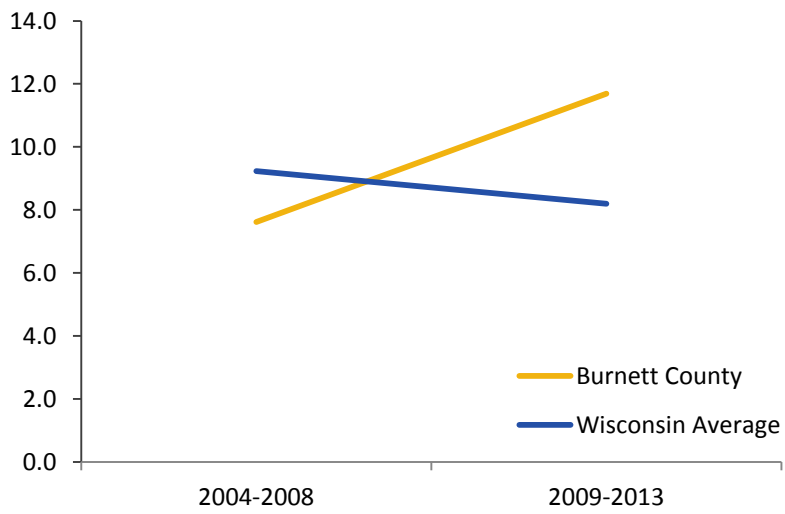


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

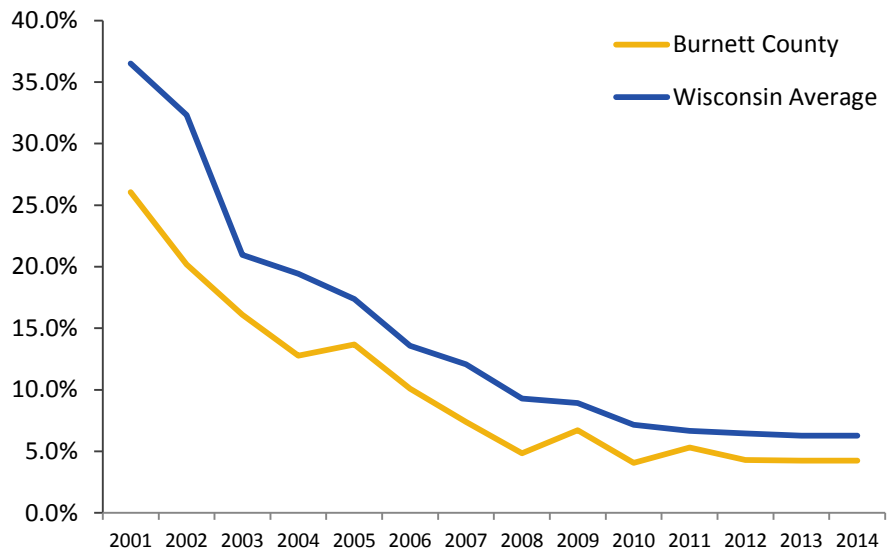
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

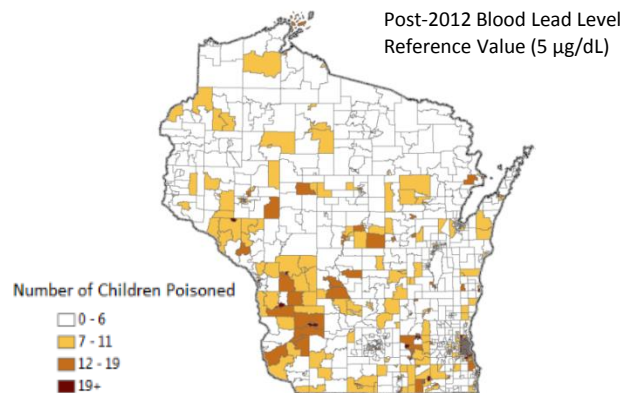
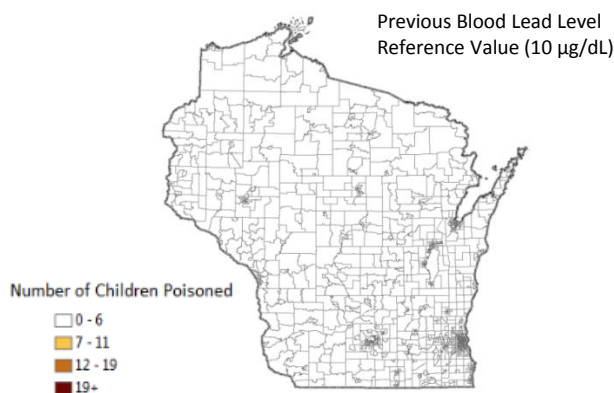
CHILDHOOD LEAD POISONING

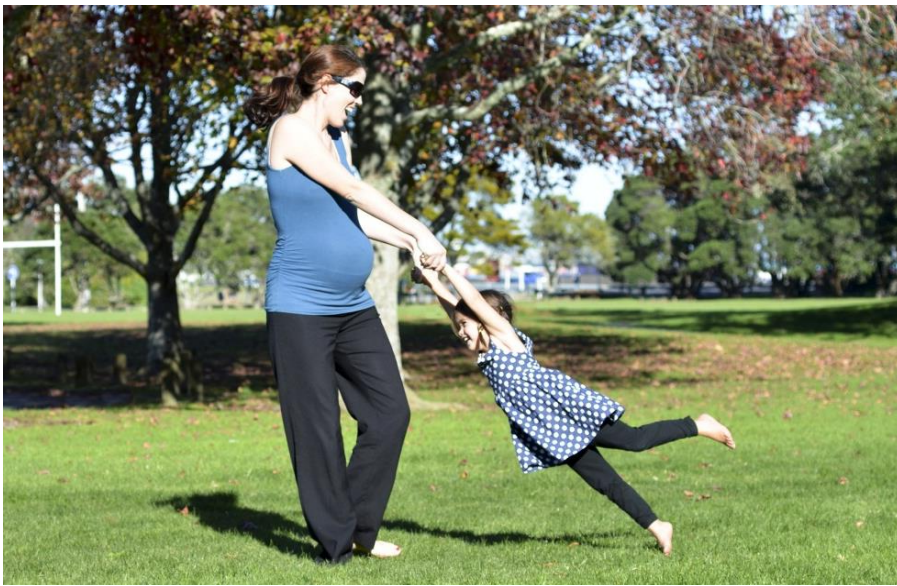
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

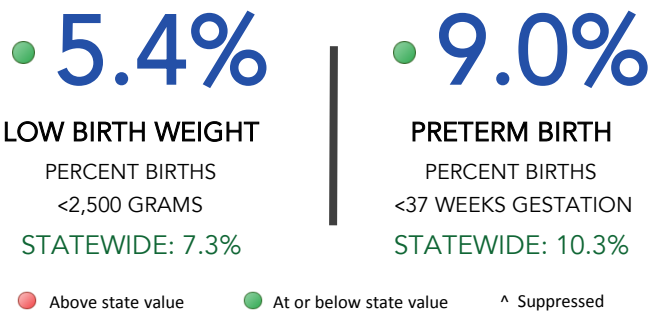
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES BURNETT COUNTY

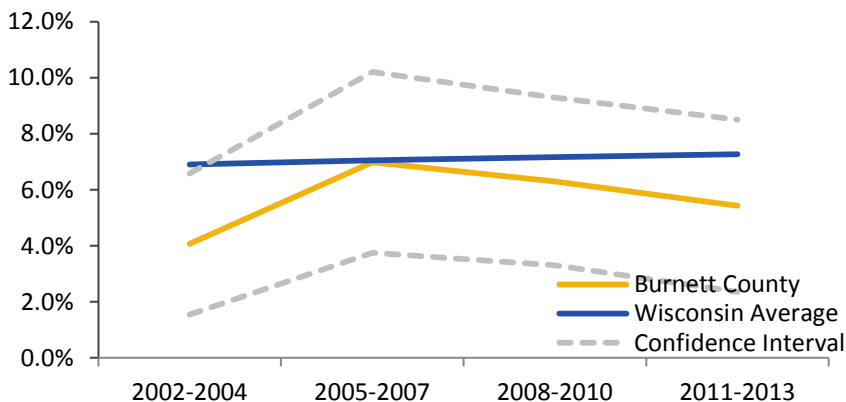
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

BURNETT COUNTY

PRETERM BIRTH

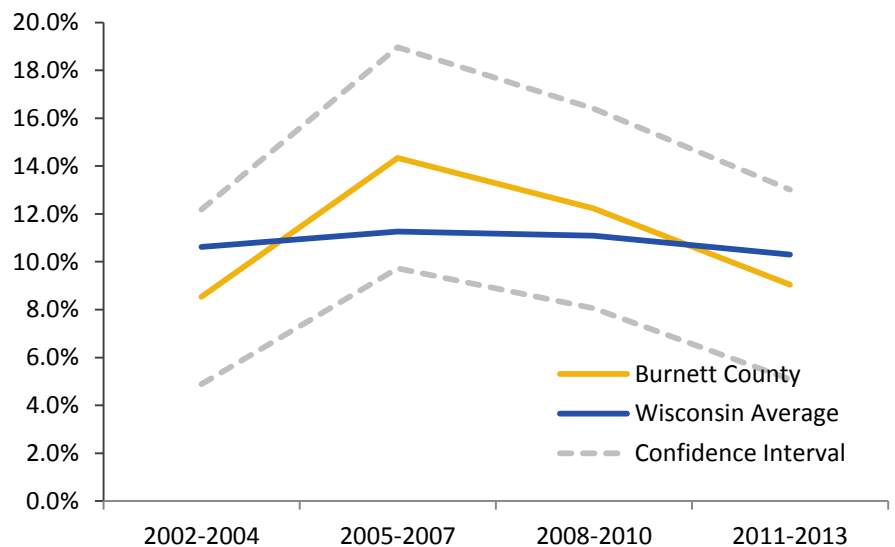
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

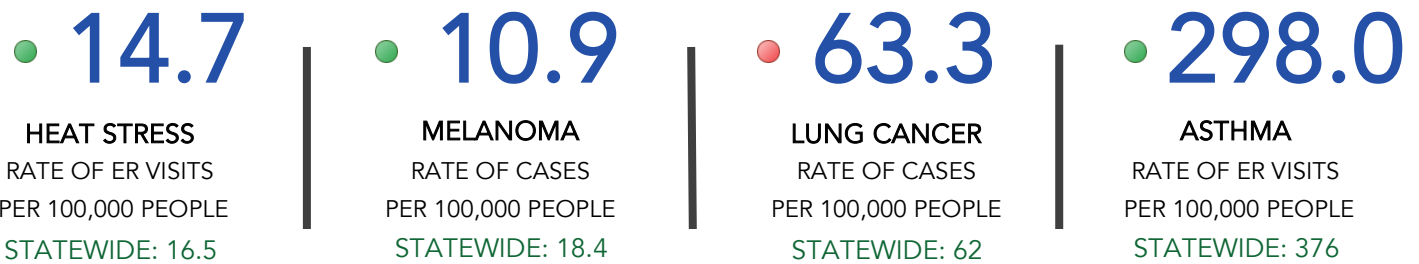
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS BURNETT COUNTY

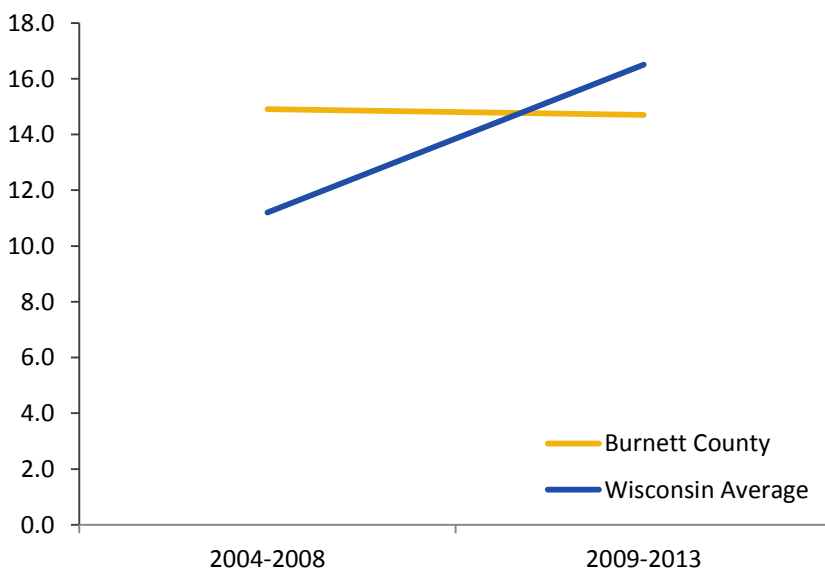
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



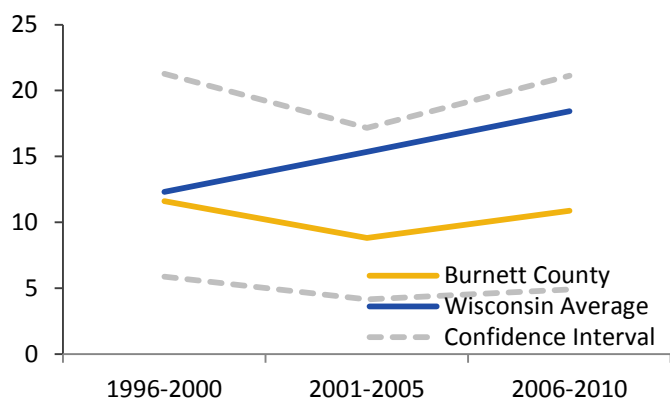


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



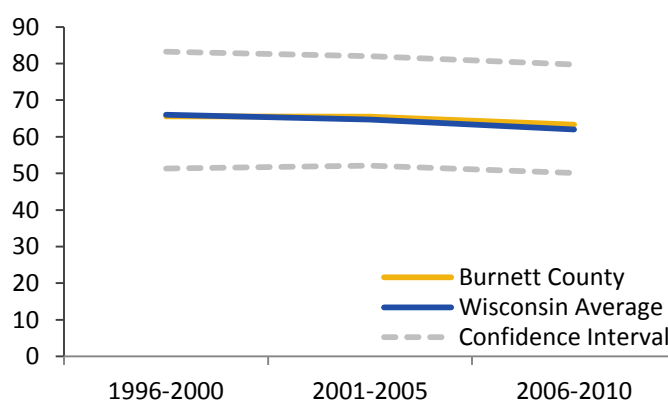
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



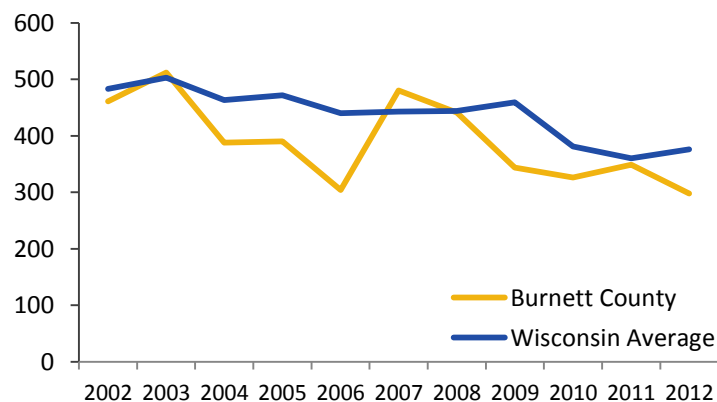
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

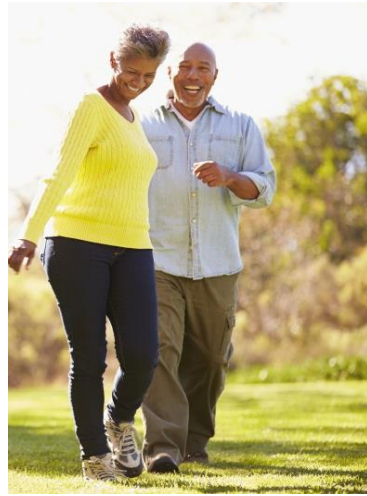
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



CALUMET COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

CALUMET COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.7 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 4.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.4% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 11.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 13.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 29.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 55.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 135.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY CALUMET COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

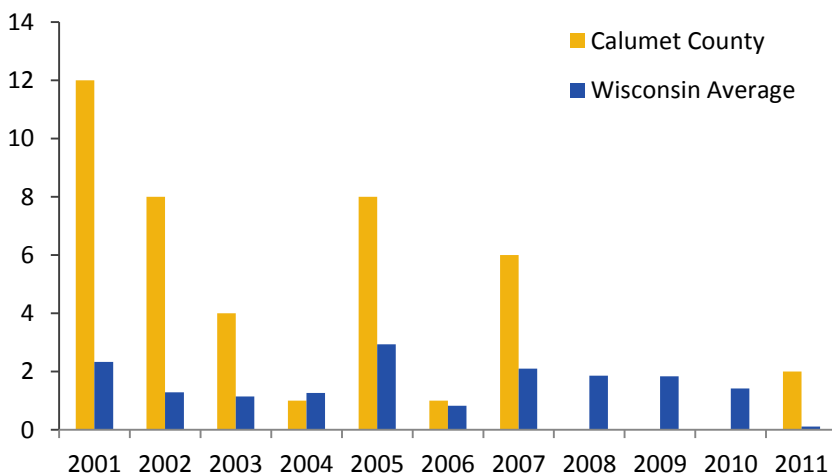
● **2.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **10.6**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

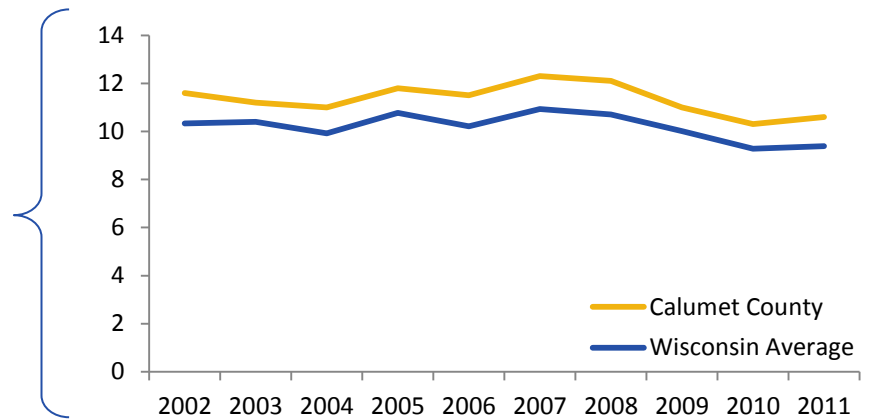
CALUMET COUNTY

PARTICULATE MATTER 2.5

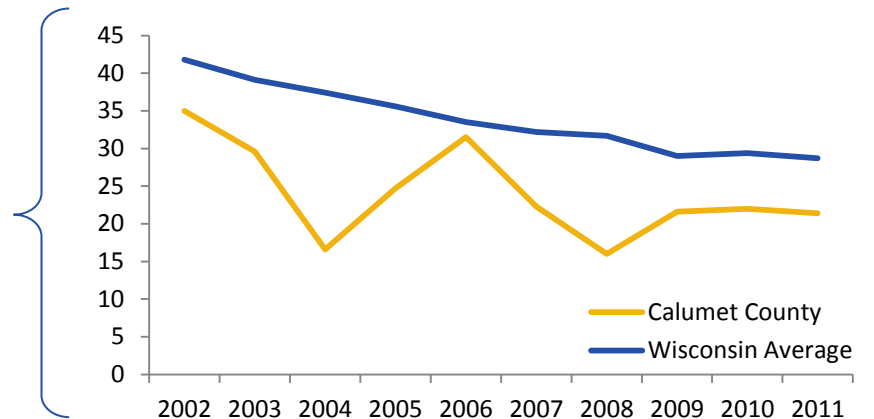
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

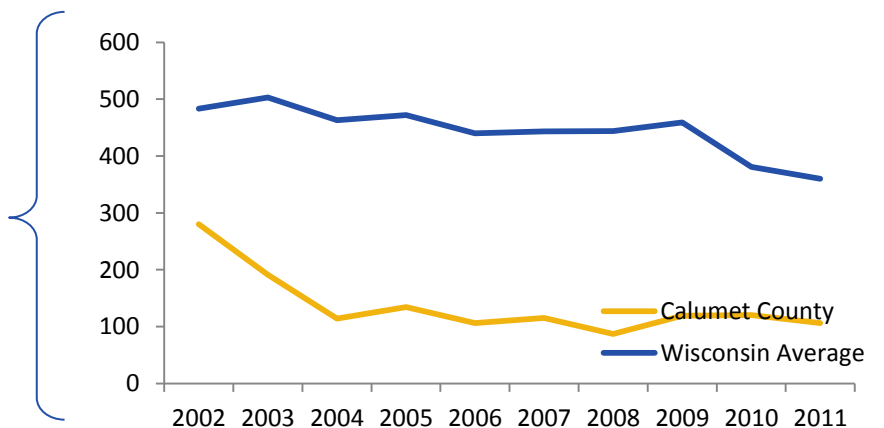
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY CALUMET COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● 0.7

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● 2.3

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

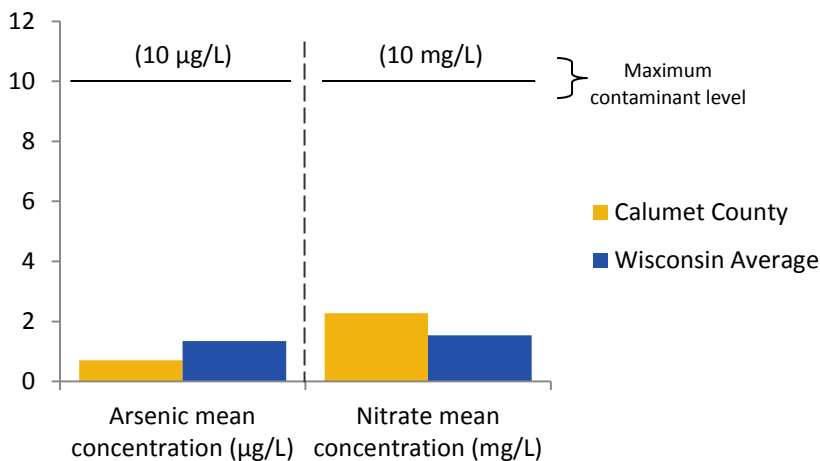
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY CALUMET COUNTY

PRIVATE DRINKING WATER

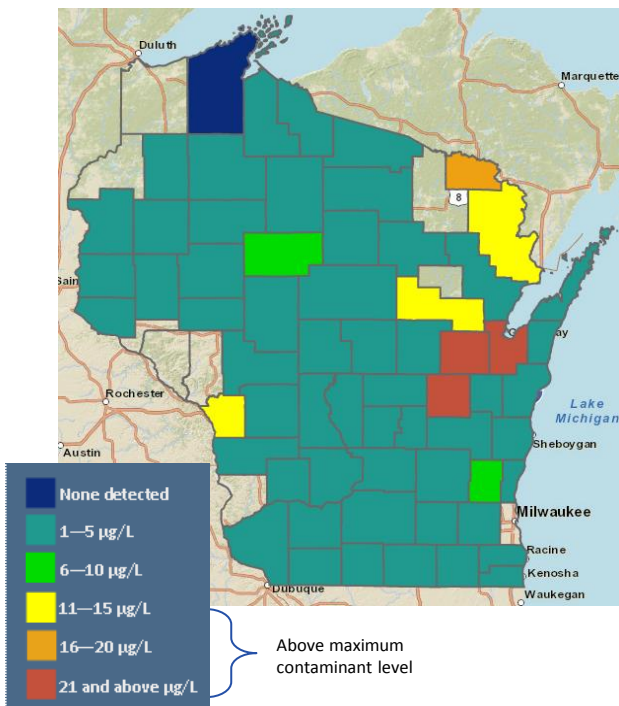
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

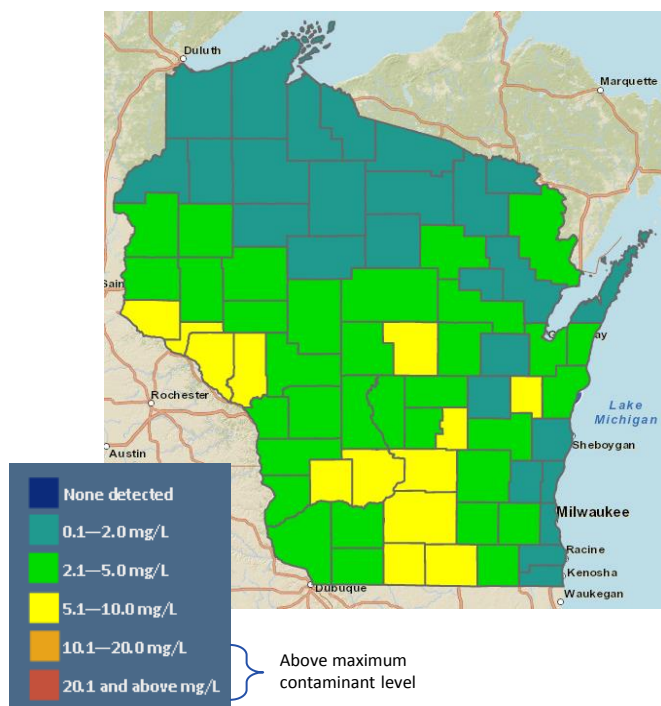
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS CALUMET COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **4.1**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **4.4%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

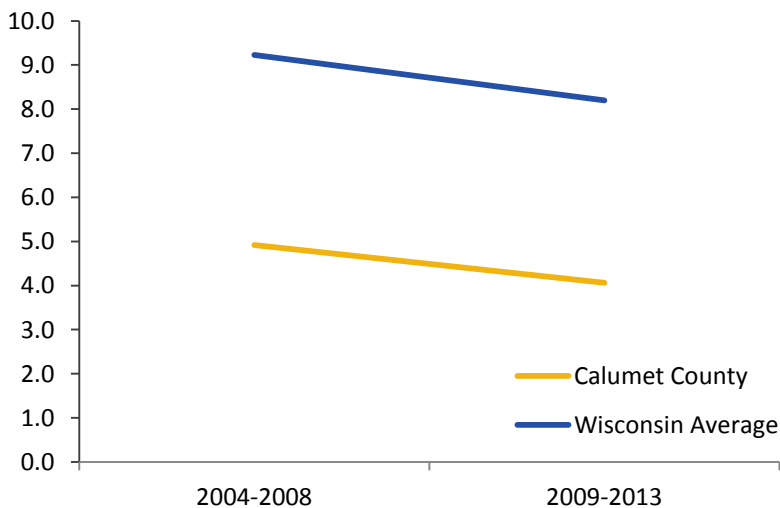
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

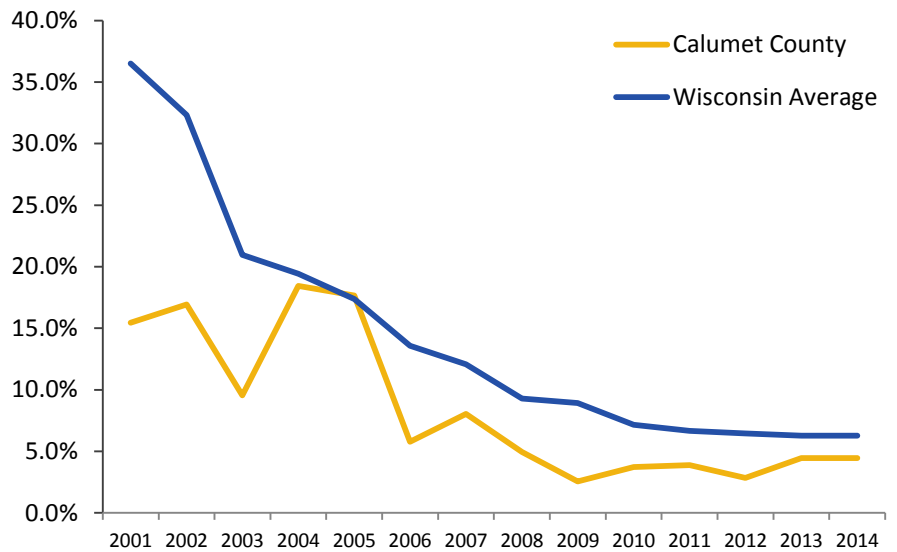
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

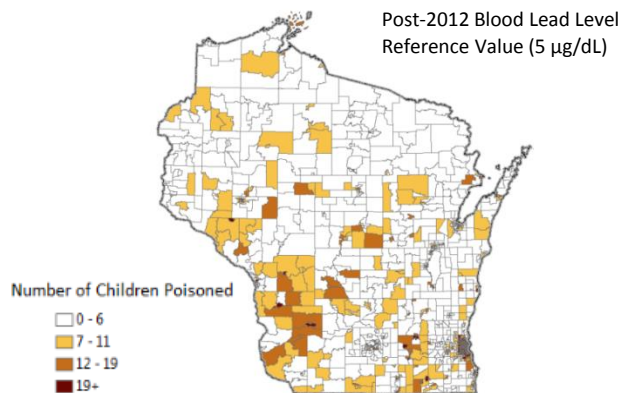
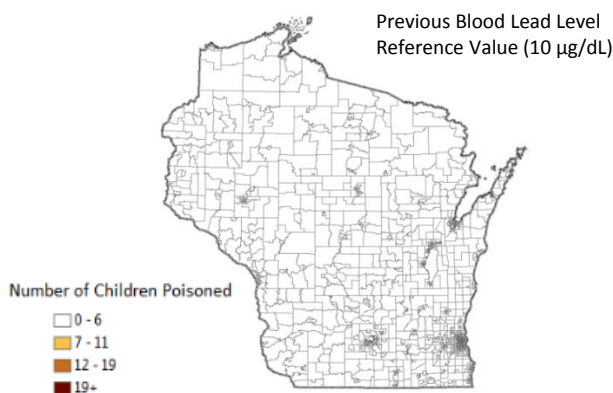
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

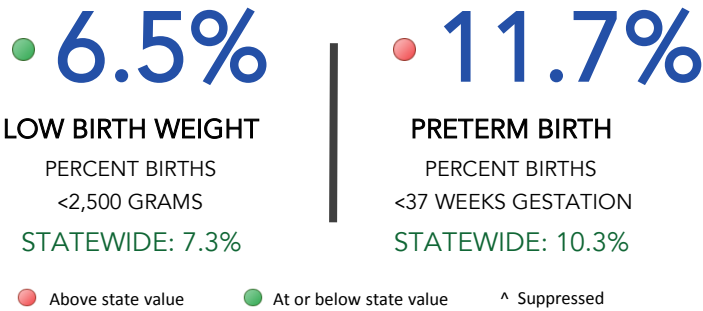
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES CALUMET COUNTY

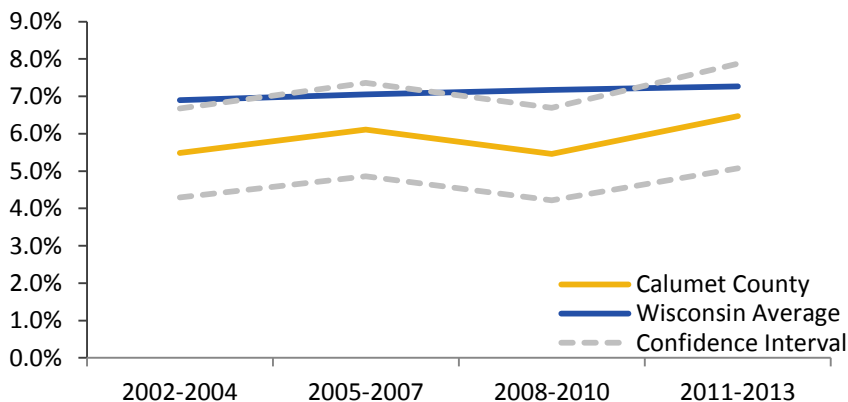
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

CALUMET COUNTY

PRETERM BIRTH

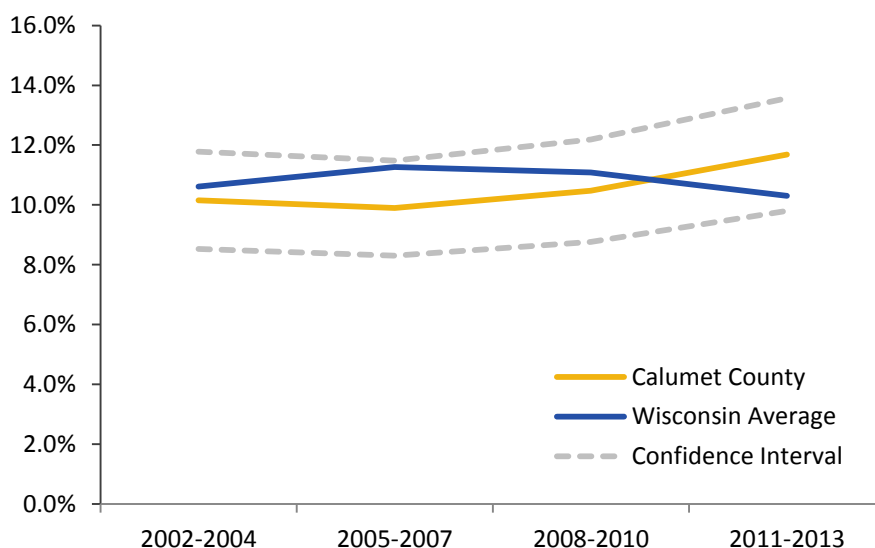
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

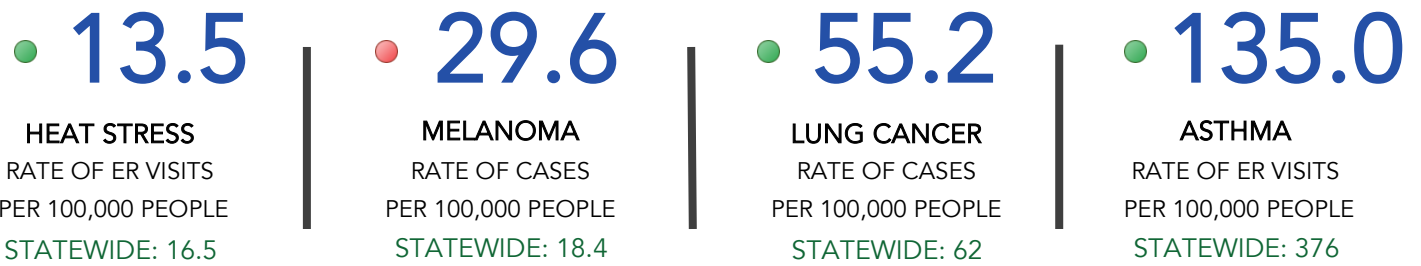
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS CALUMET COUNTY

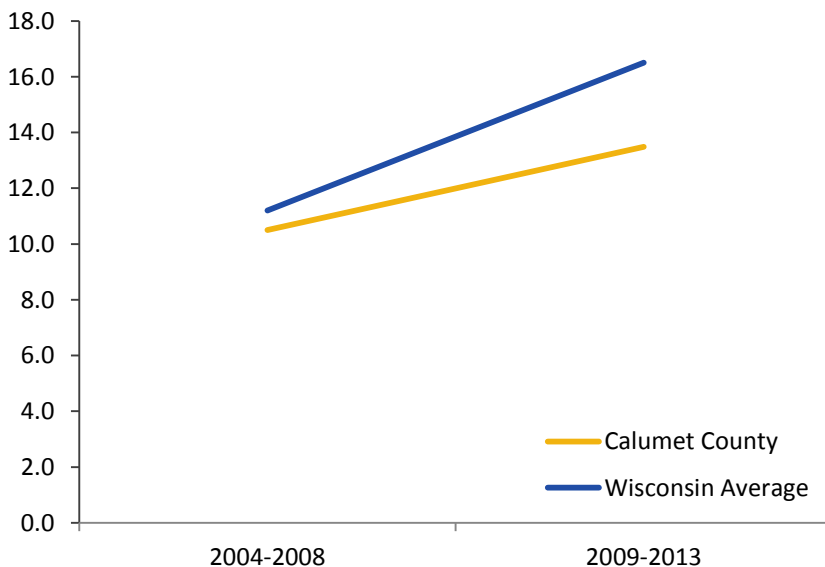
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



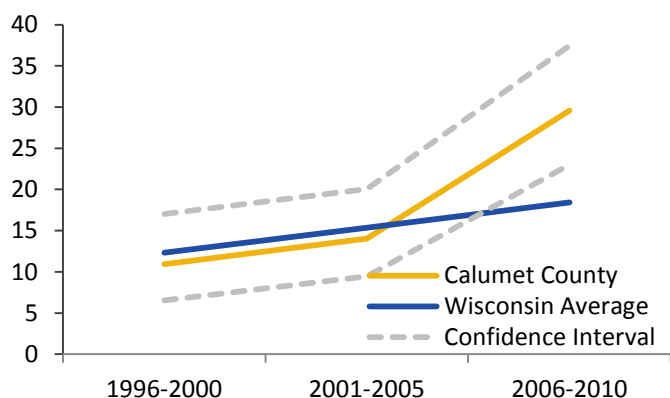


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



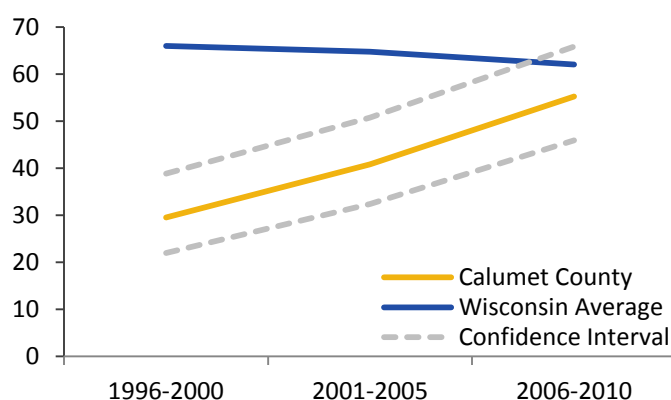
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



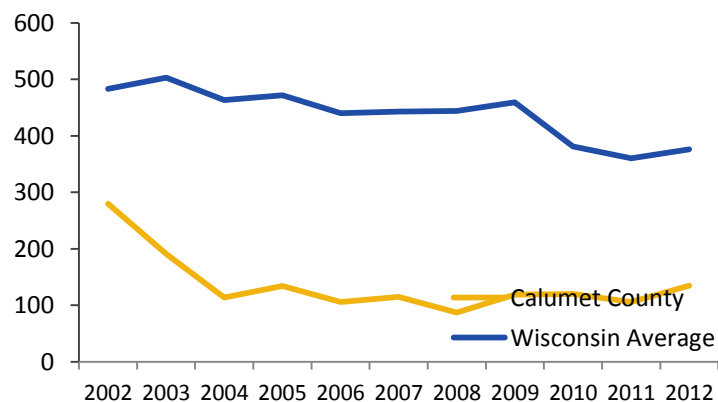
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



CHIPPEWA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

CHIPPEWA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 3.5 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 6.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.0% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.8% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 18.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 17.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 68.6 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 143.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY CHIPPEWA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

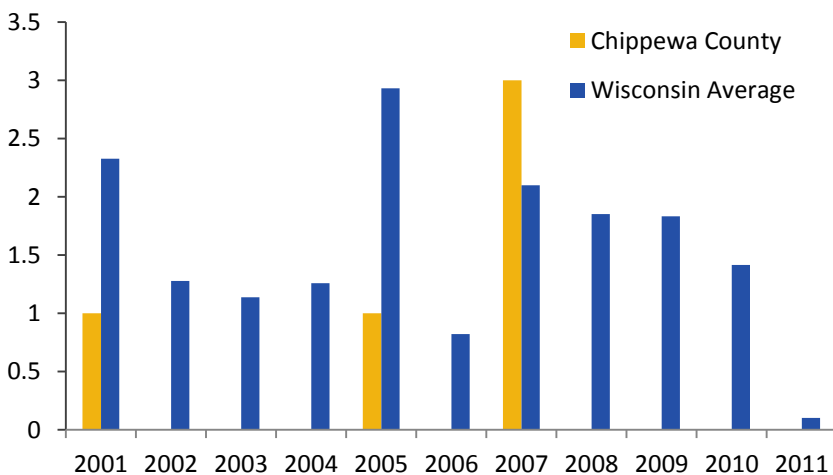
● 9.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

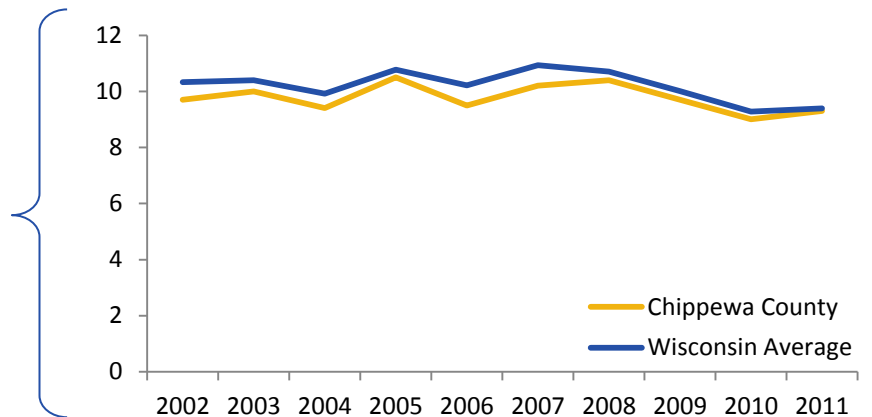
CHIPPEWA COUNTY

PARTICULATE MATTER 2.5

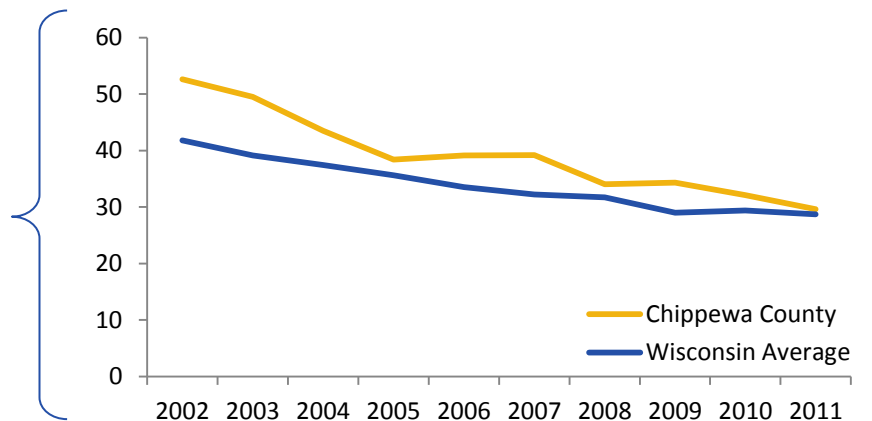
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

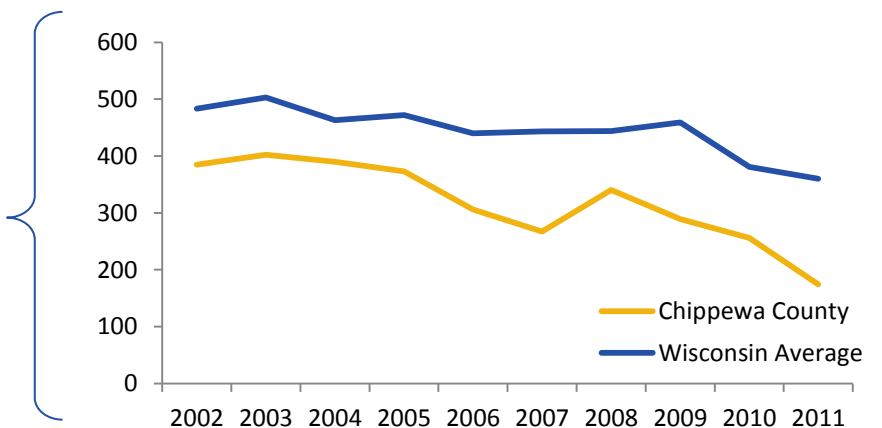
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



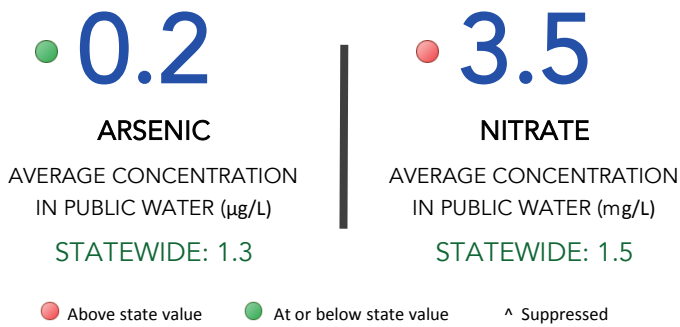
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY CHIPPEWA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

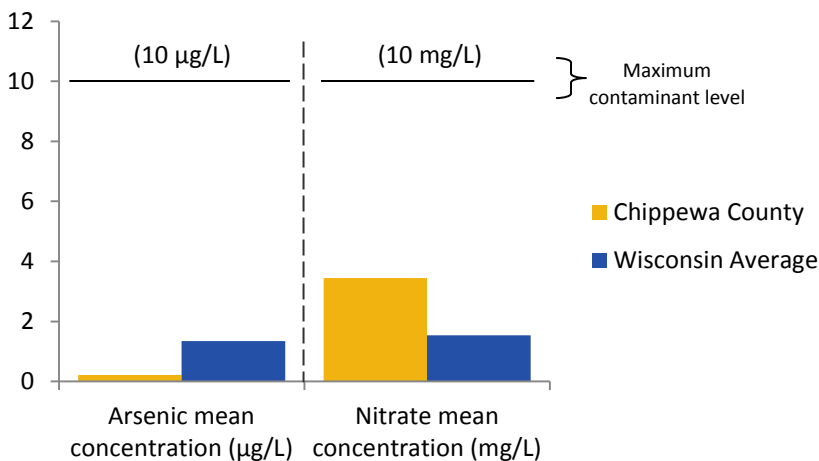
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY CHIPPEWA COUNTY

PRIVATE DRINKING WATER

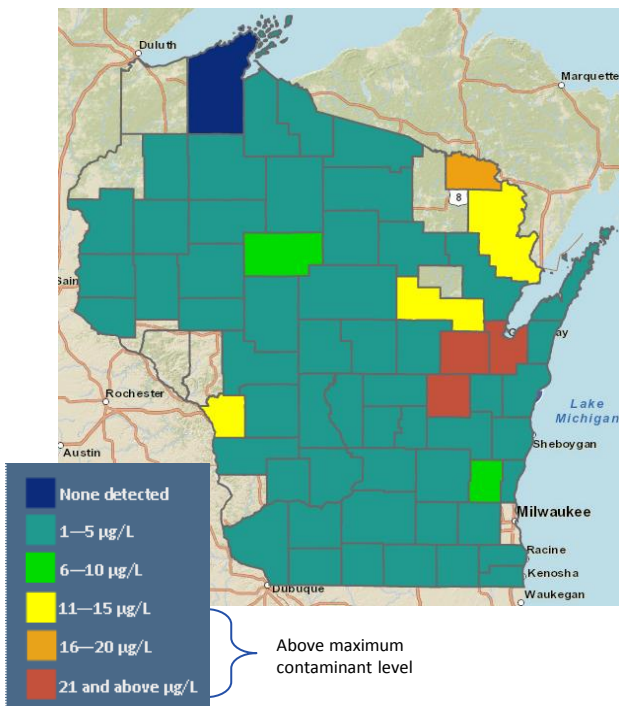
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

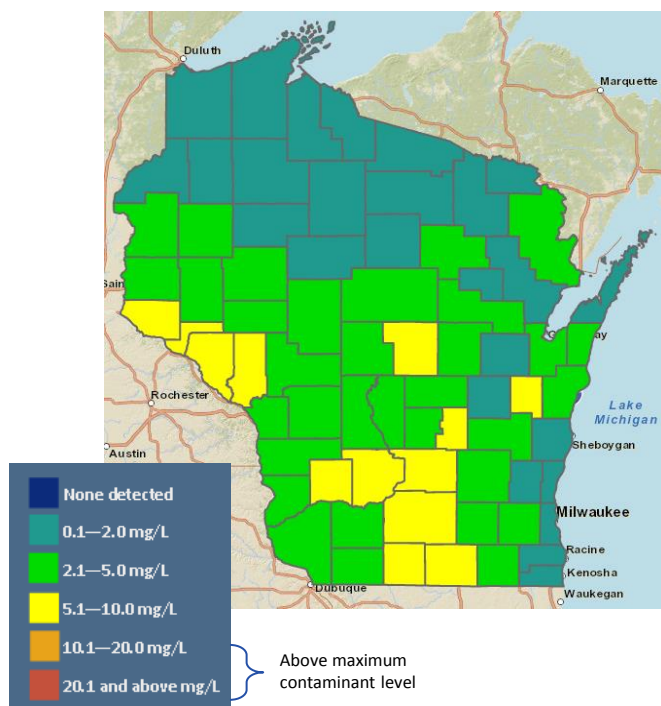
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS CHIPPEWA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.2**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **2.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

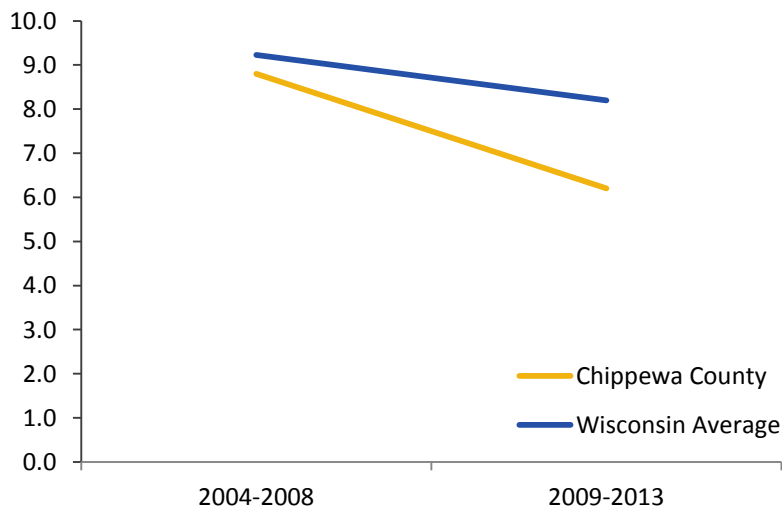
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

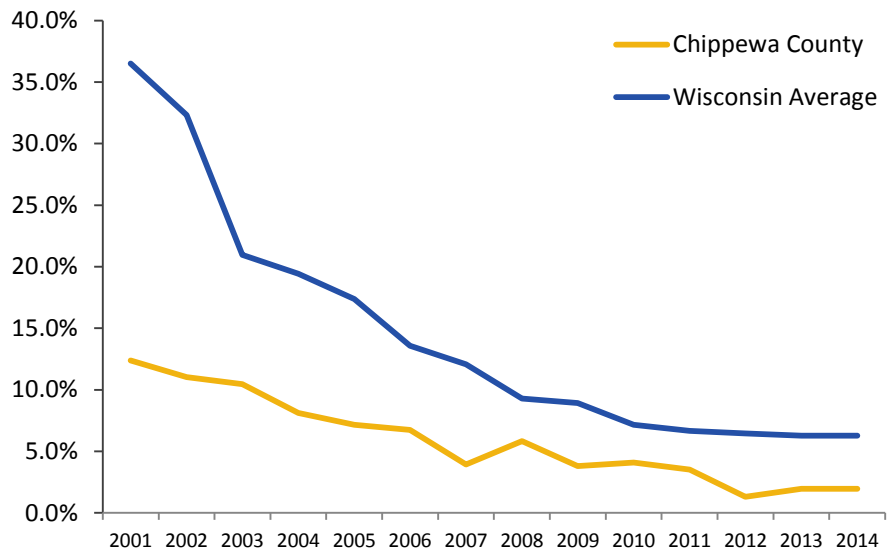
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

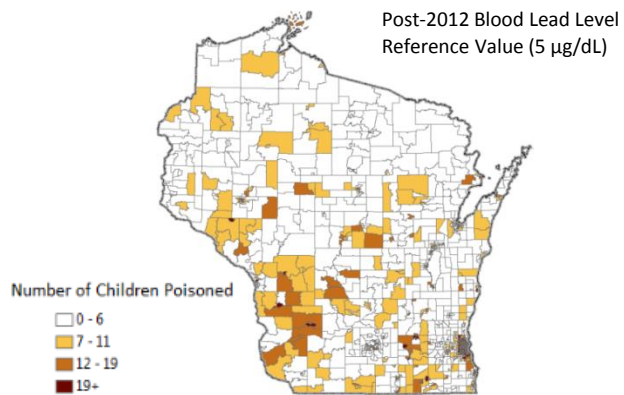
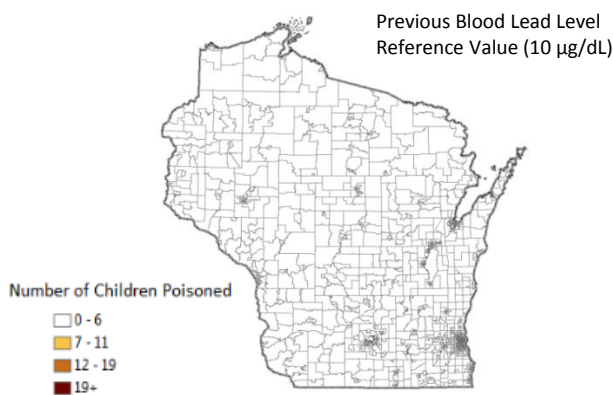
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES CHIPPEWA COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.8%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.9%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

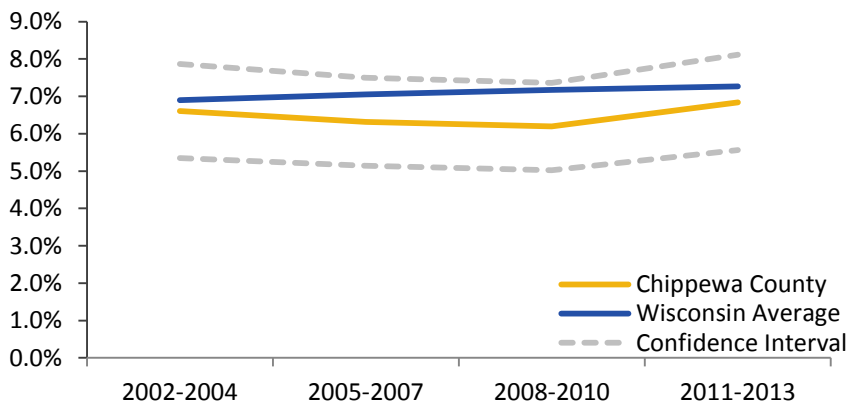
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

CHIPPEWA COUNTY

PRETERM BIRTH

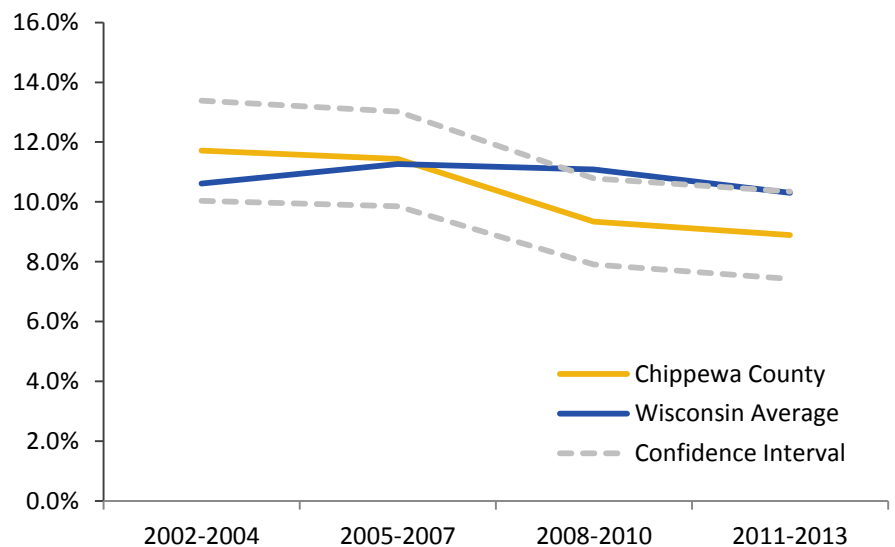
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

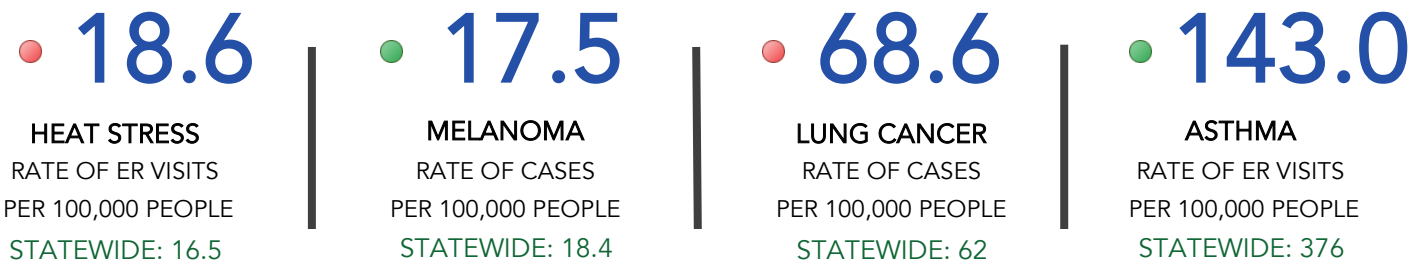
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS CHIPPEWA COUNTY

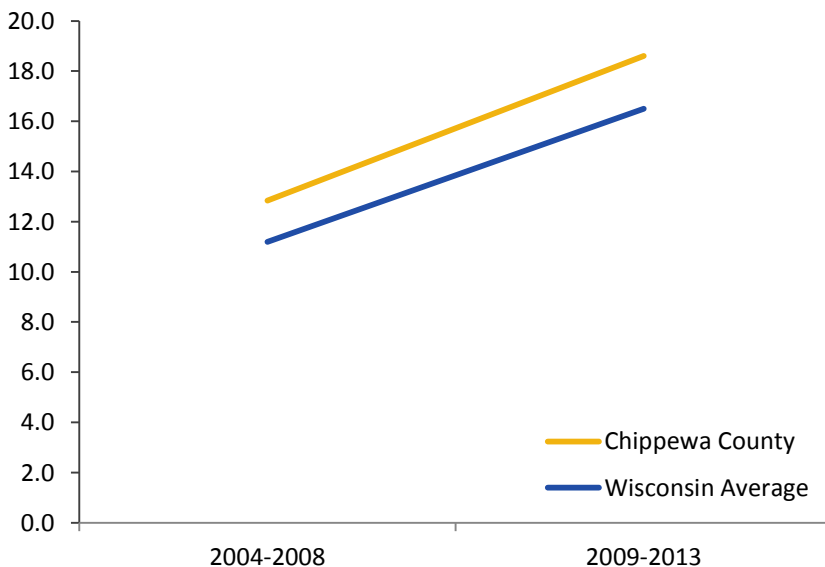
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



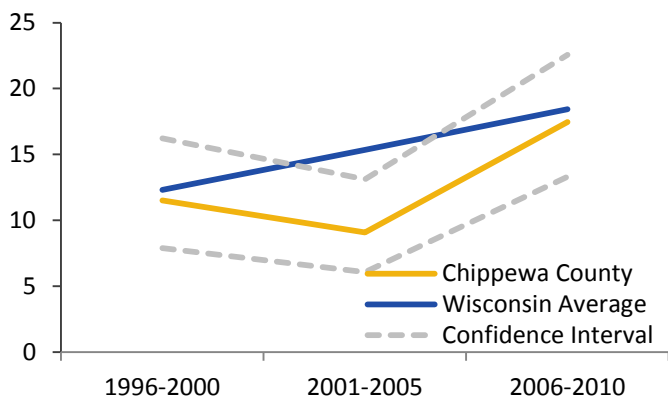


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



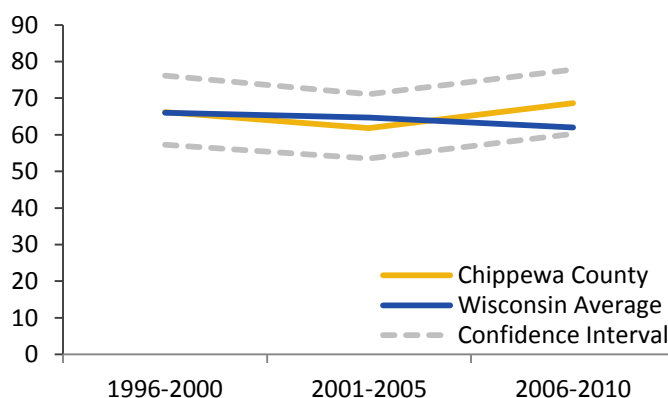
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



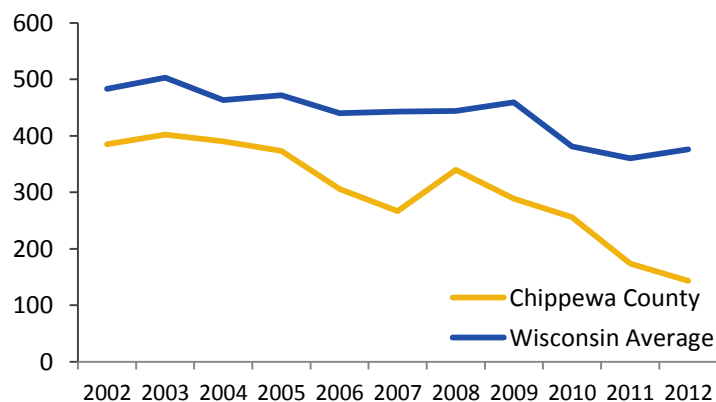
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

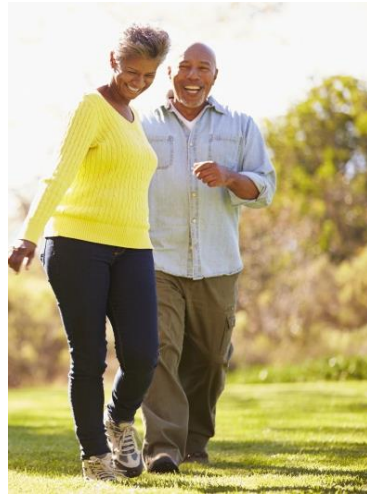
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



CLARK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

CLARK COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 3.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 9.3 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.2% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 16.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 18.9 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 61.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 231.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY CLARK COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

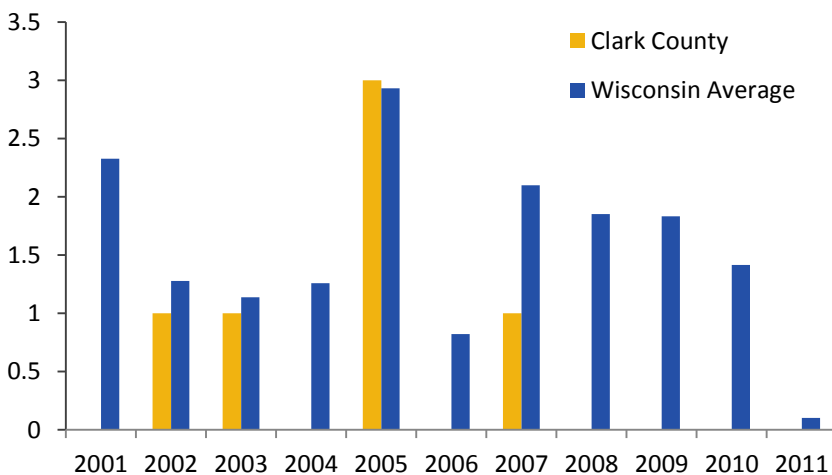
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **8.9**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

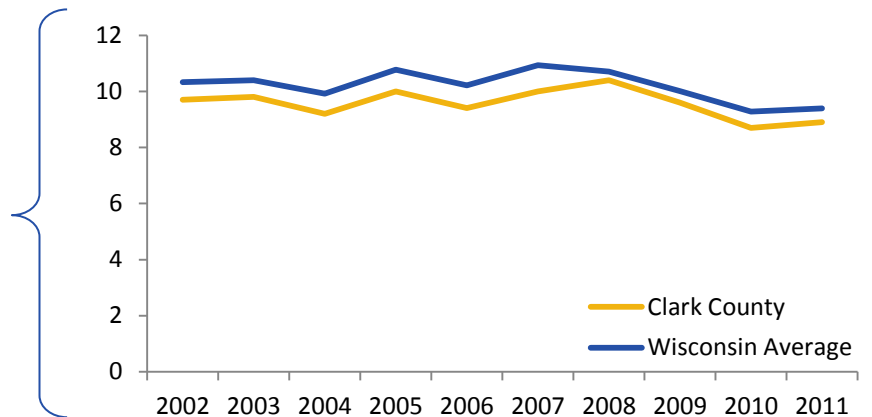
CLARK COUNTY

PARTICULATE MATTER 2.5

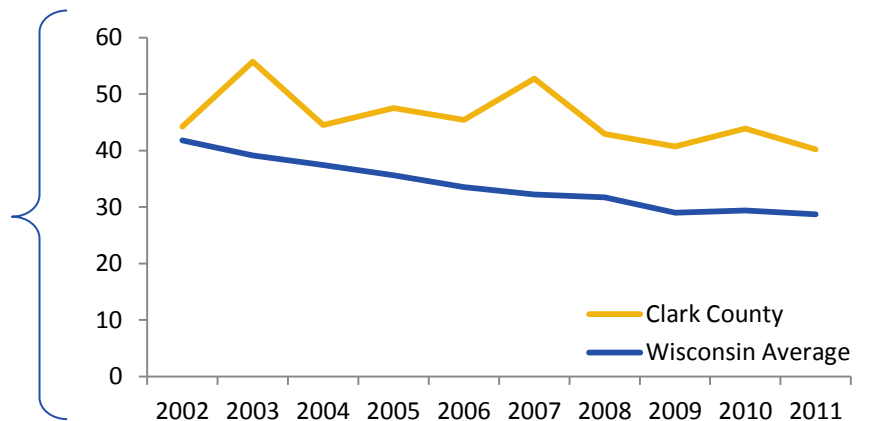
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

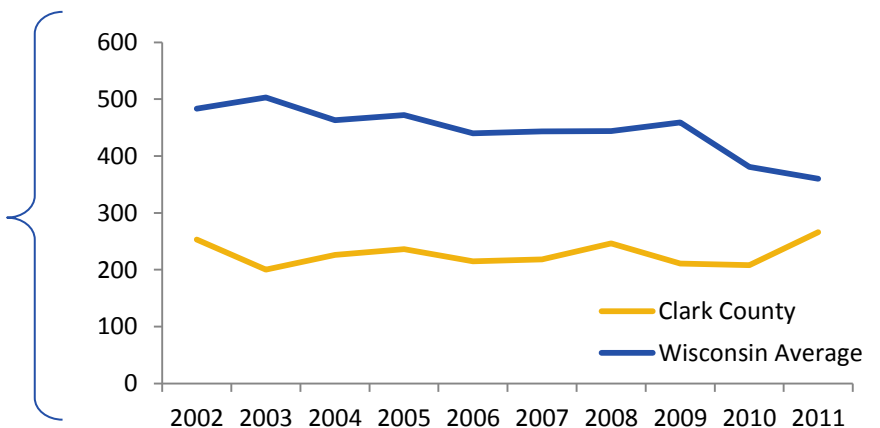
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



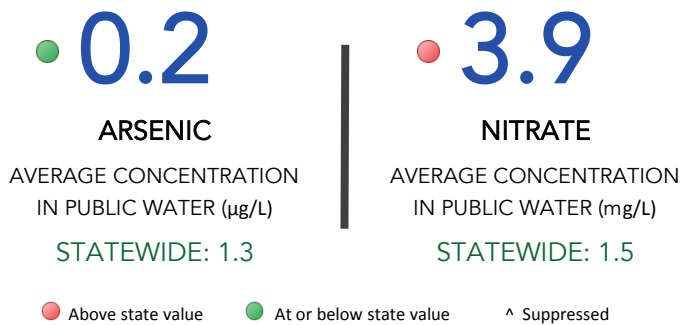
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY CLARK COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

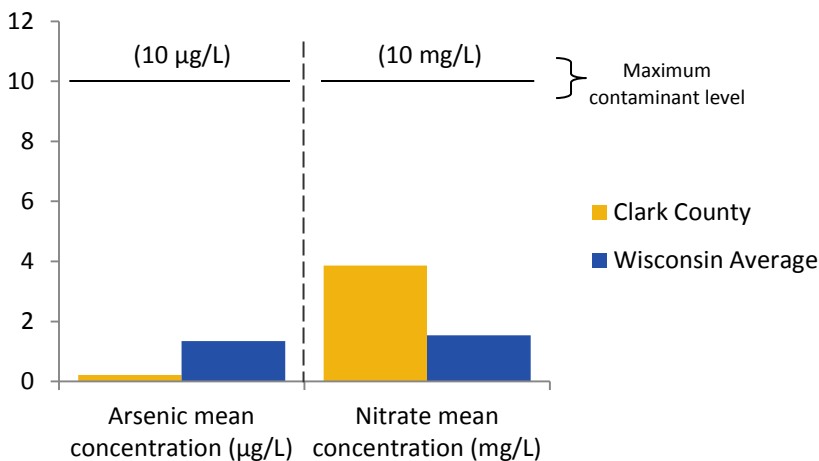
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY CLARK COUNTY

PRIVATE DRINKING WATER

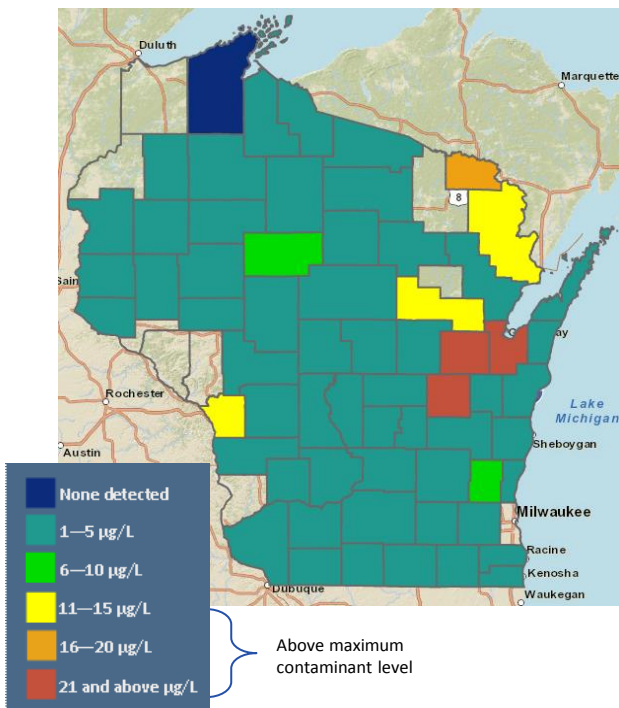
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

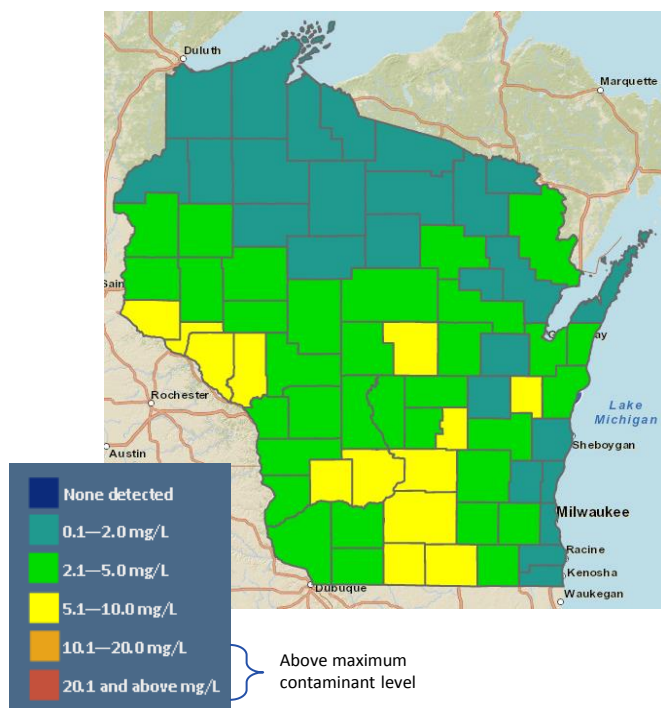
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

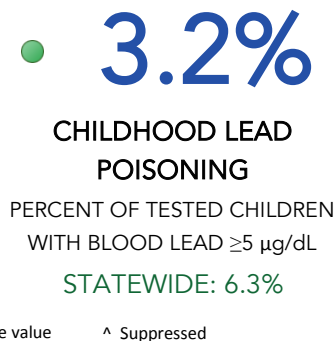
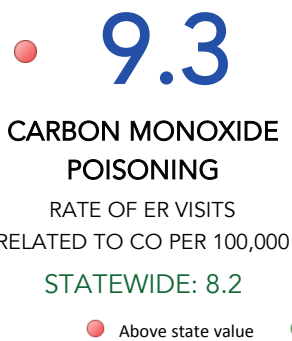


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS CLARK COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

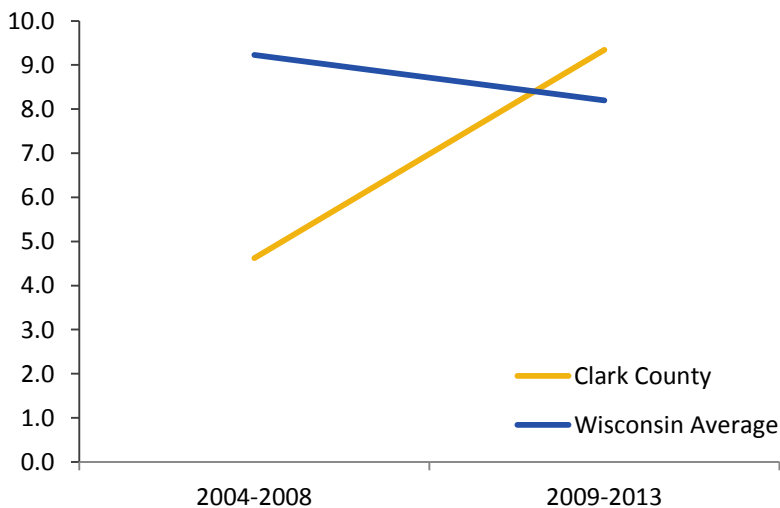


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

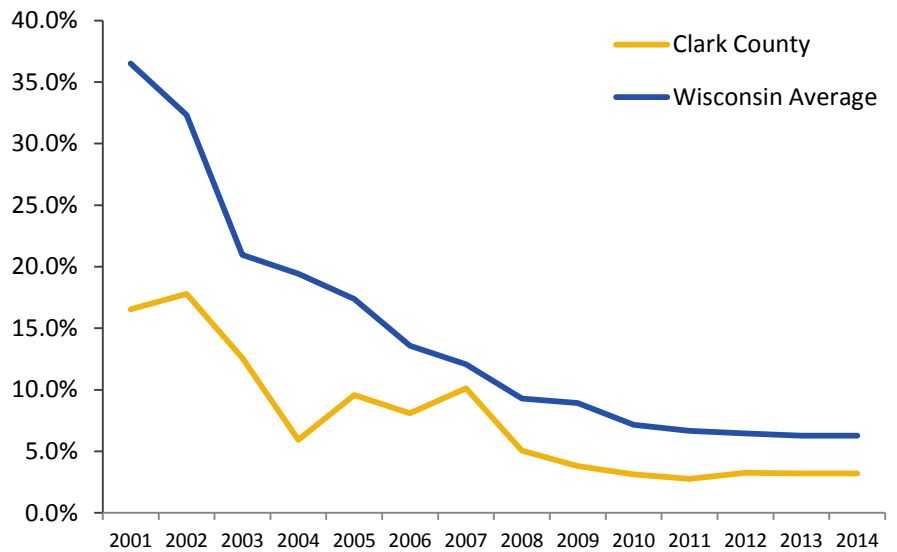
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

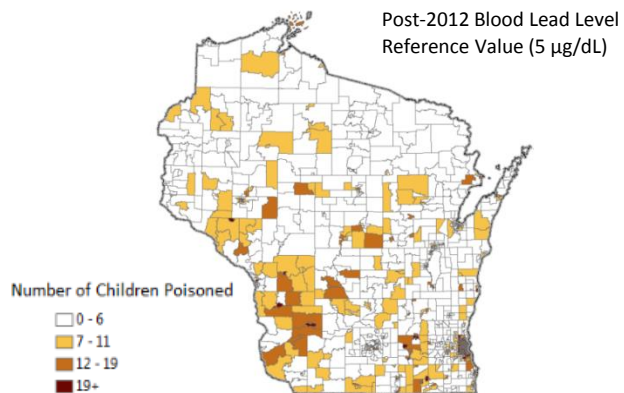
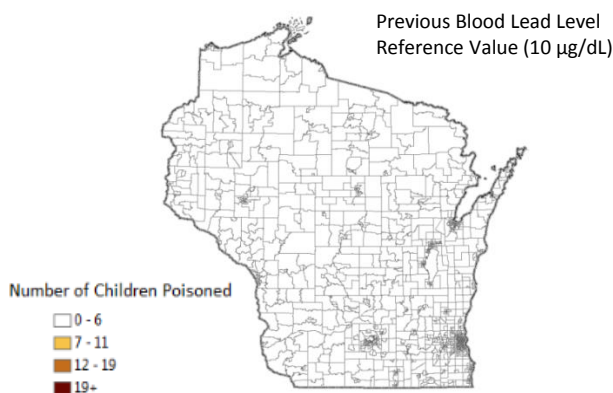
CHILDHOOD LEAD POISONING

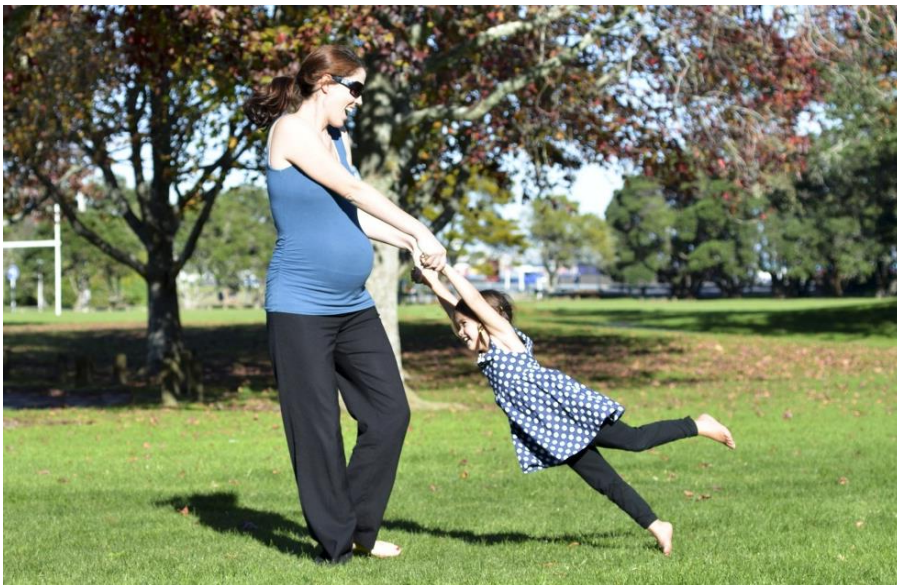
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES CLARK COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **5.5%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.7%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

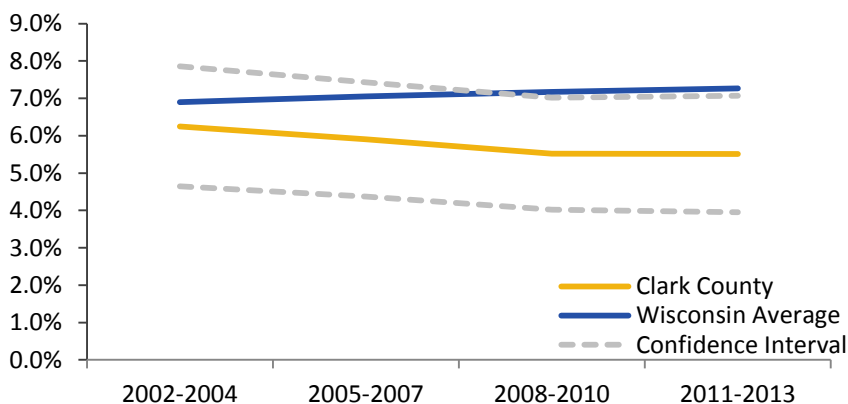
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES CLARK COUNTY

PRETERM BIRTH

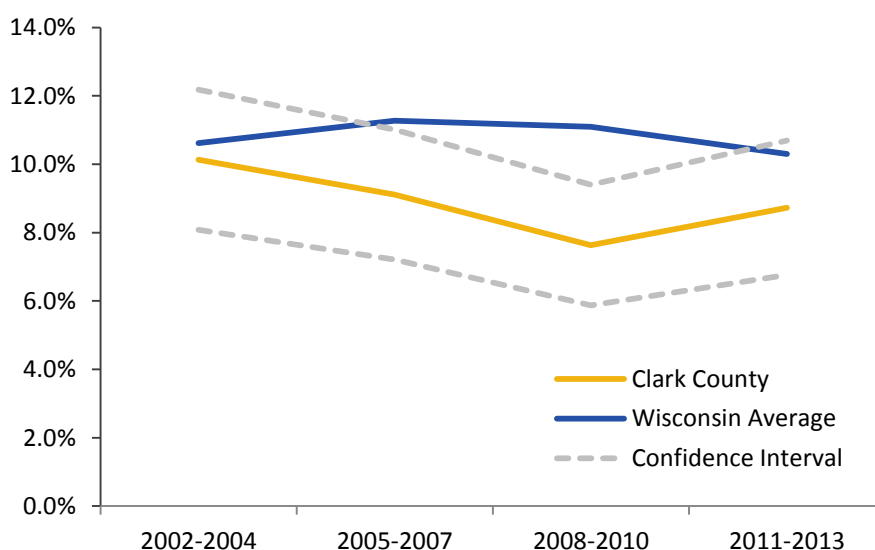
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

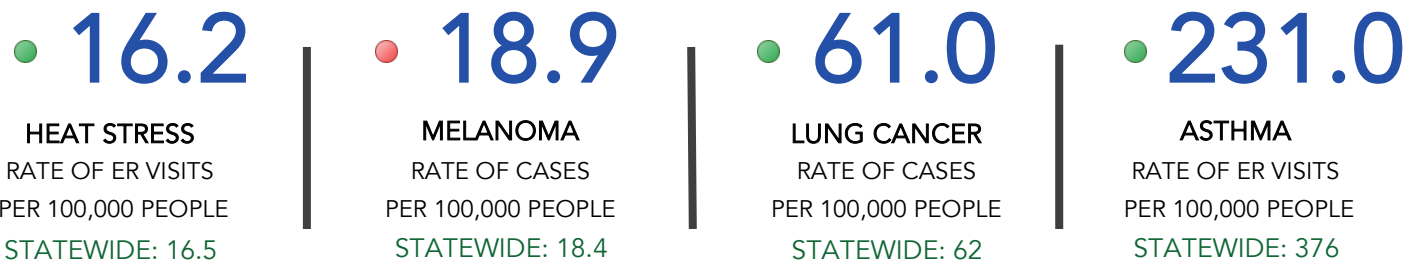
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS CLARK COUNTY

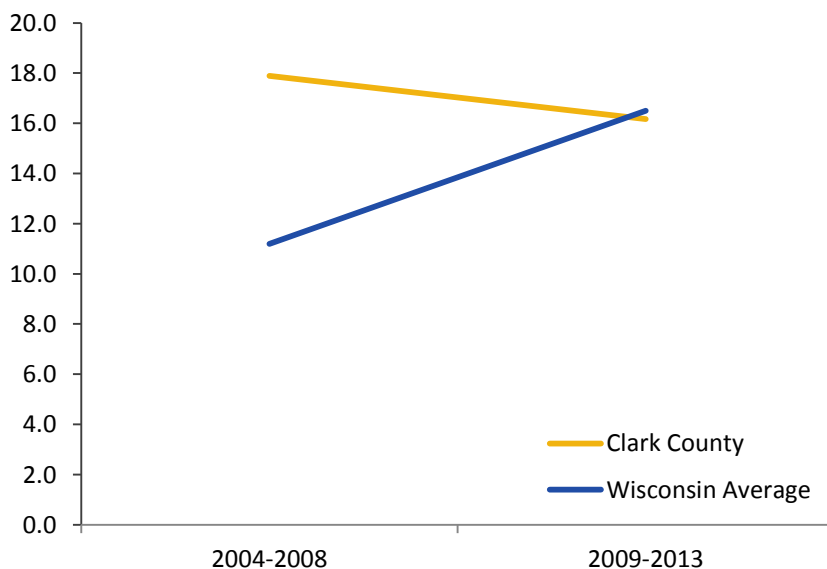
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



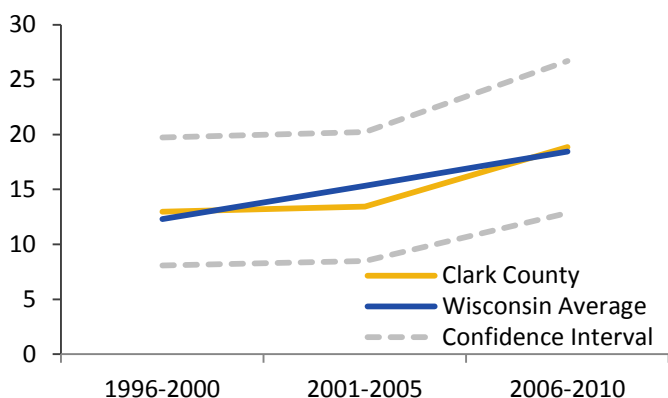


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



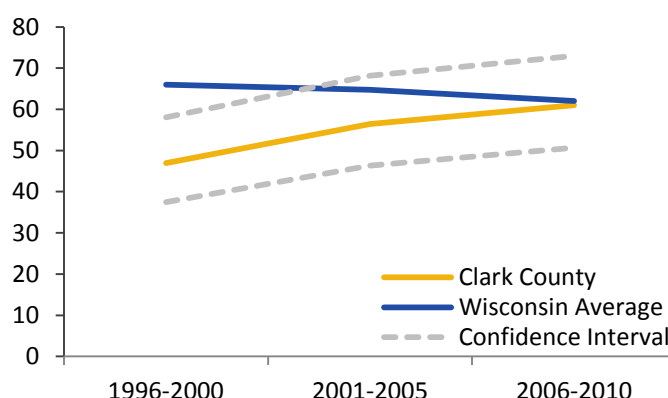
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



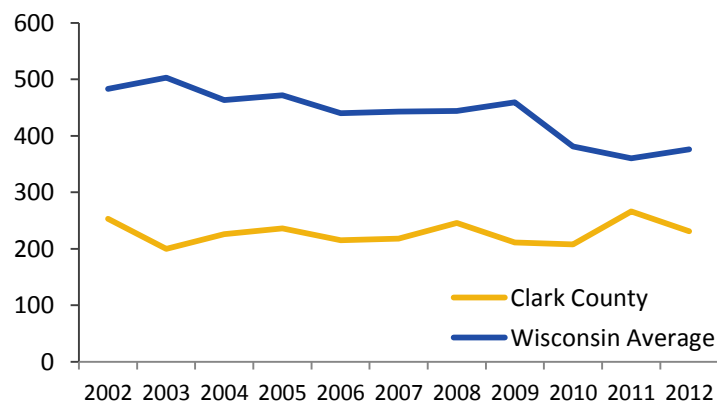
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

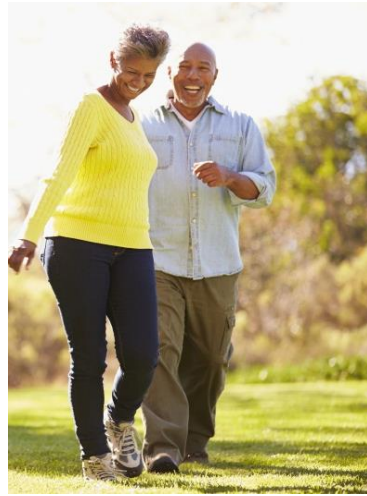
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



COLUMBIA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

COLUMBIA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.2 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 3.1 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 6.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 5.2% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 30.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 14.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 72.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 396.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY COLUMBIA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

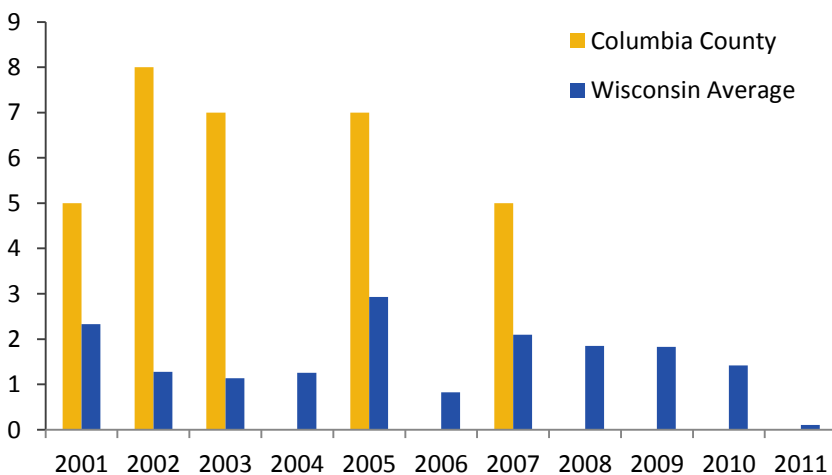
● 10.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

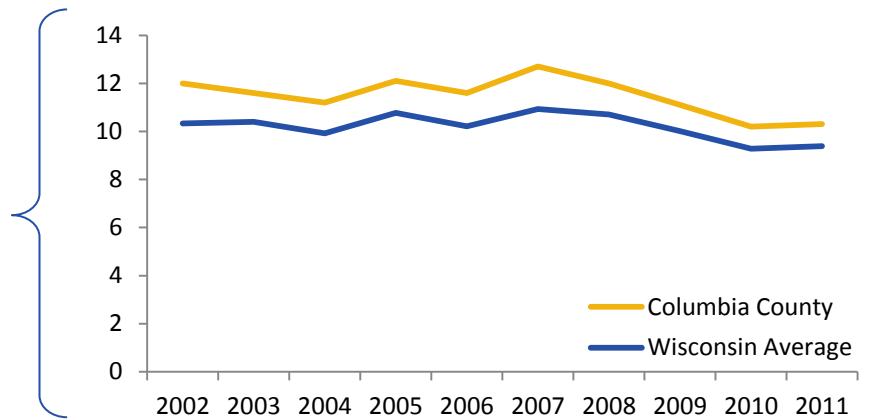
COLUMBIA COUNTY

PARTICULATE MATTER 2.5

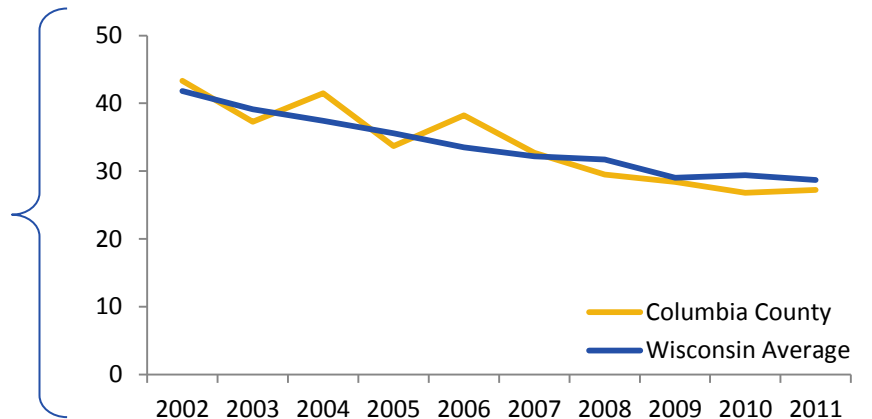
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

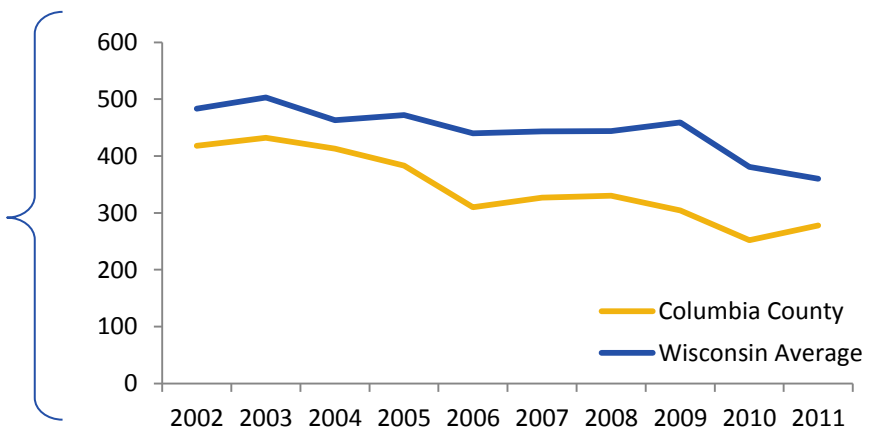
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



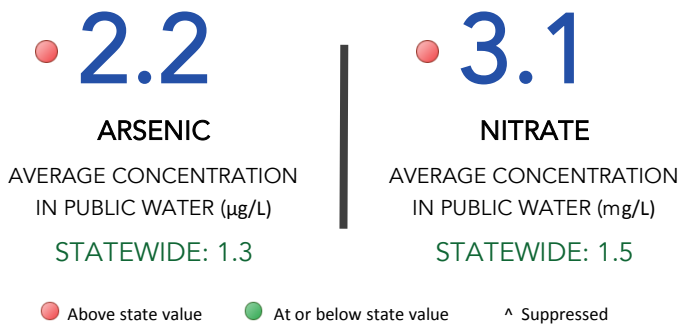
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY COLUMBIA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

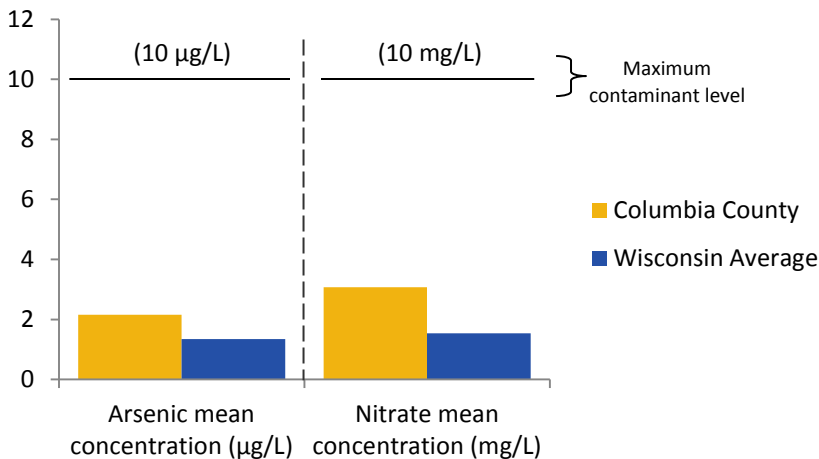
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY COLUMBIA COUNTY

PRIVATE DRINKING WATER

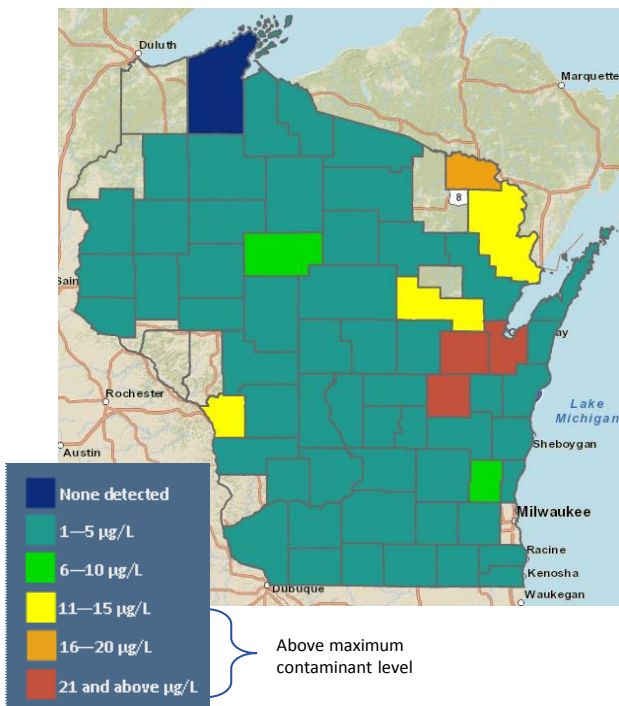
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

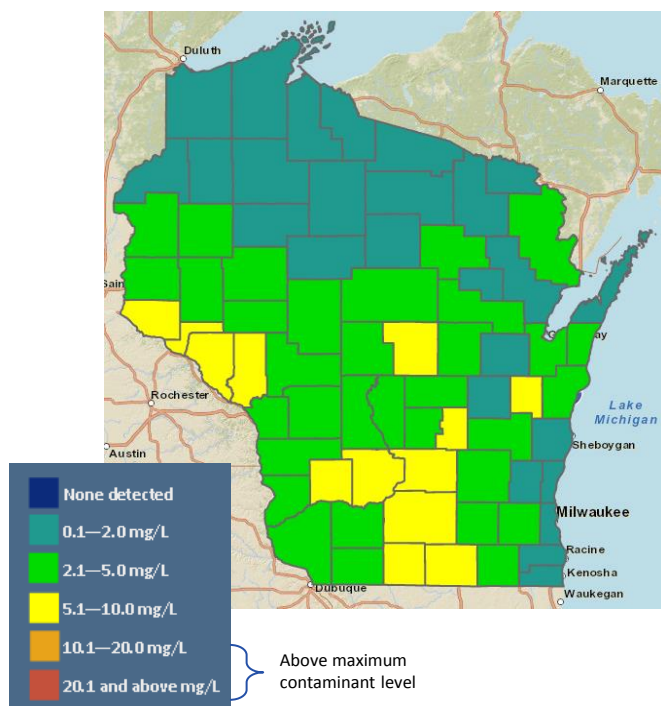
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS COLUMBIA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ^ Suppressed

● **5.2%**

CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

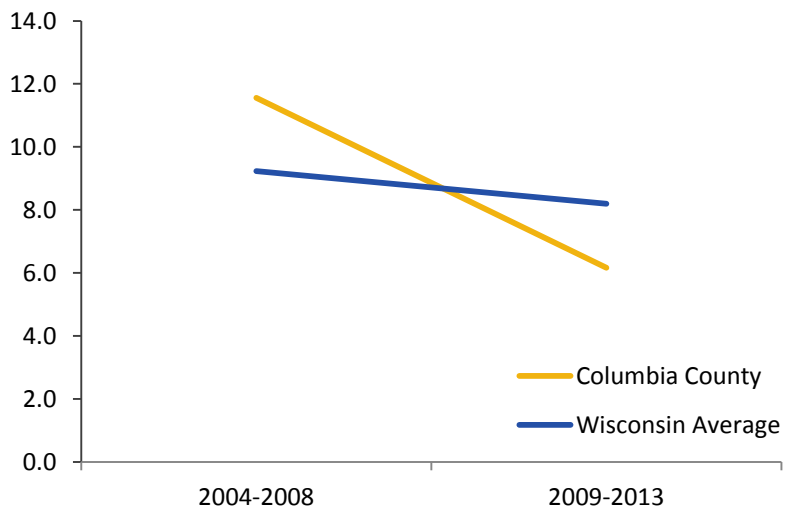
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

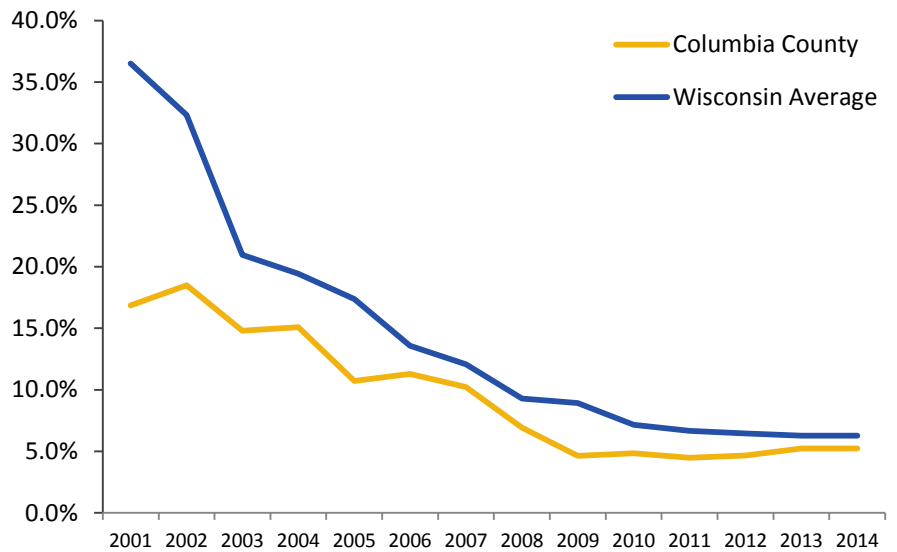
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

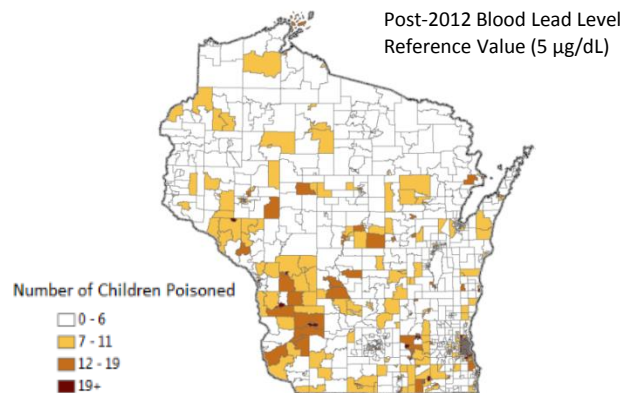
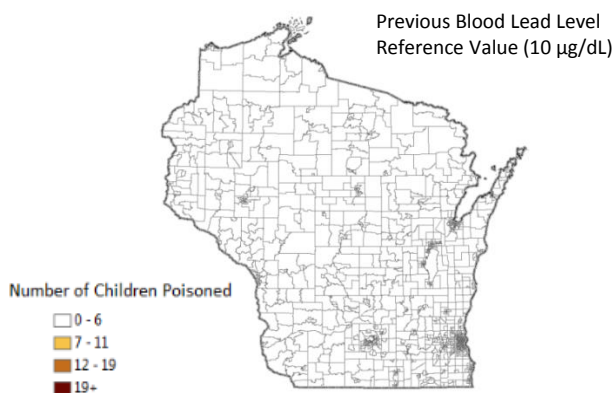
CHILDHOOD LEAD POISONING

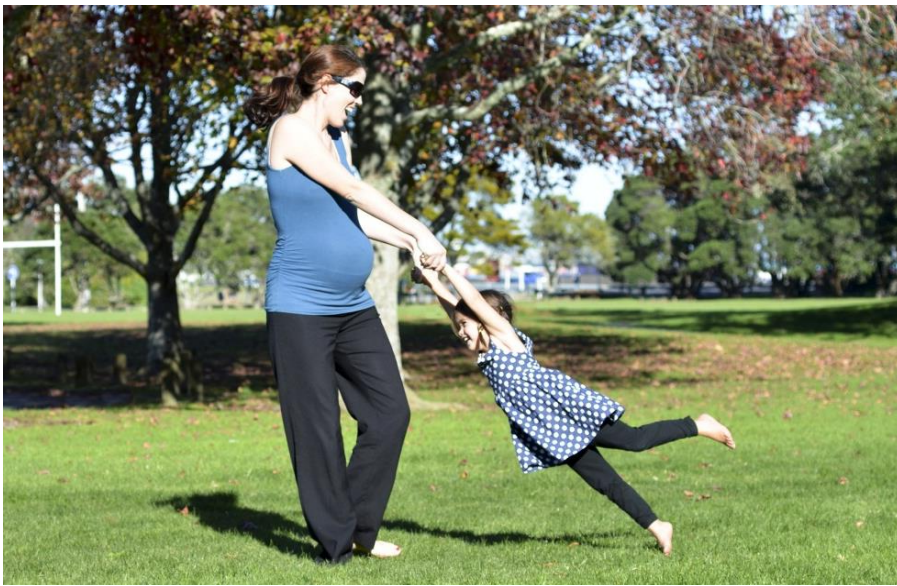
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

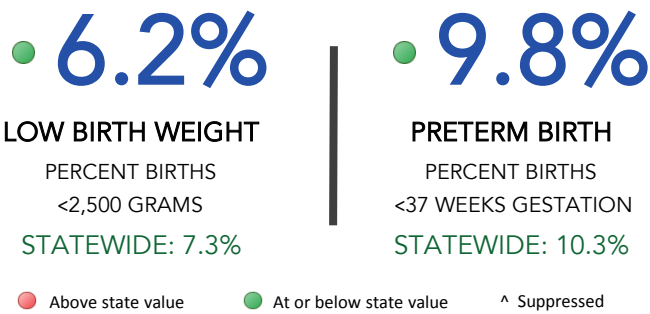
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES COLUMBIA COUNTY

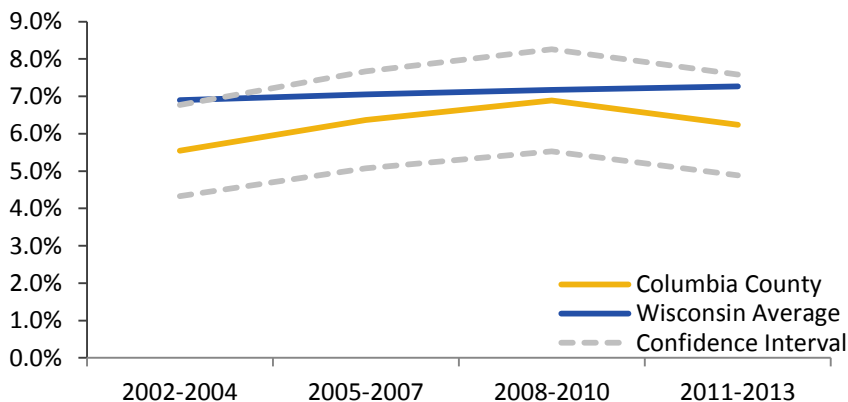
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES COLUMBIA COUNTY

PRETERM BIRTH

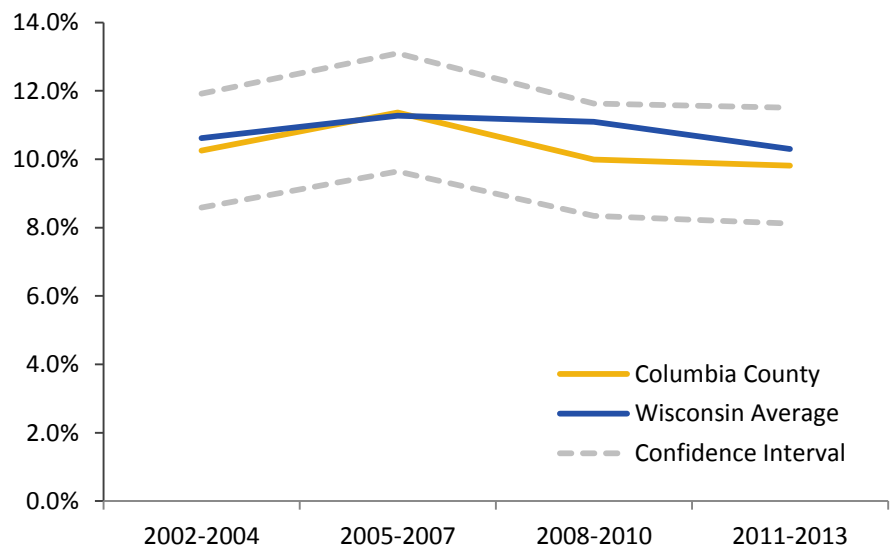
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS COLUMBIA COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **30.1**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **14.0**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **72.8**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

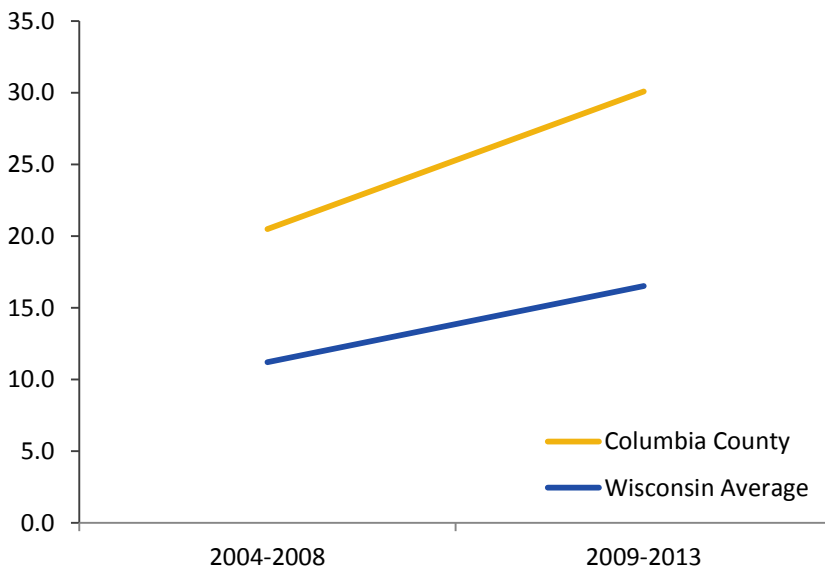
● **396.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



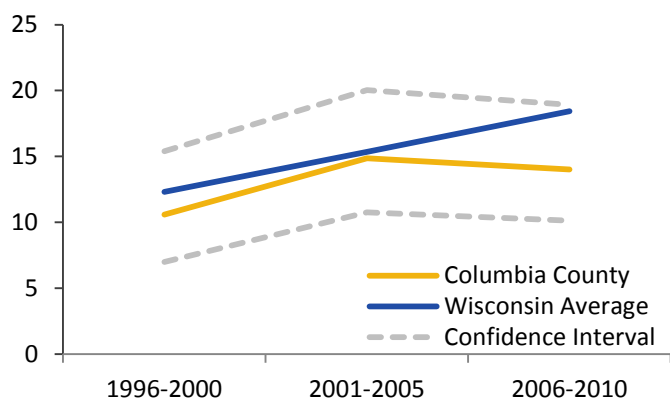


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



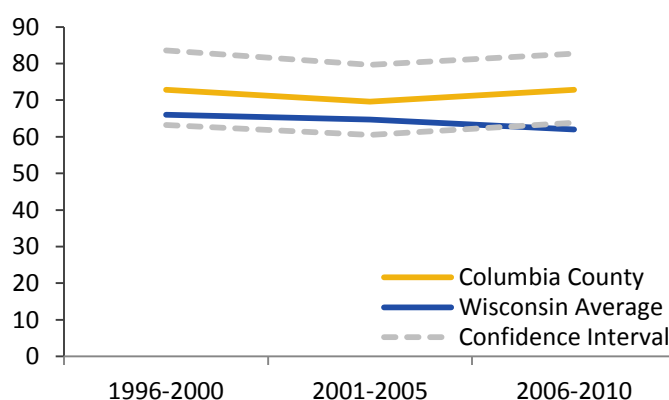
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



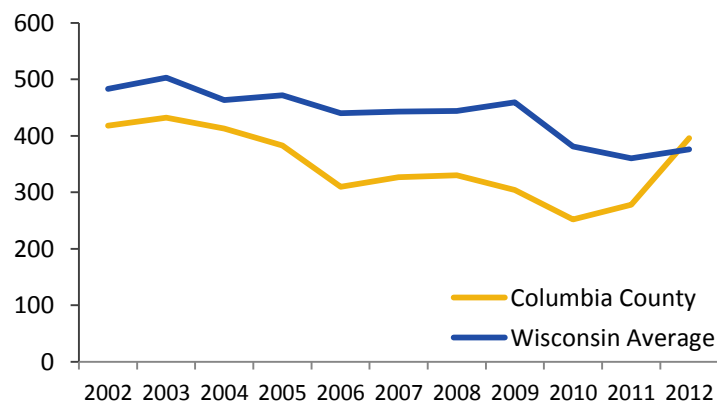
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

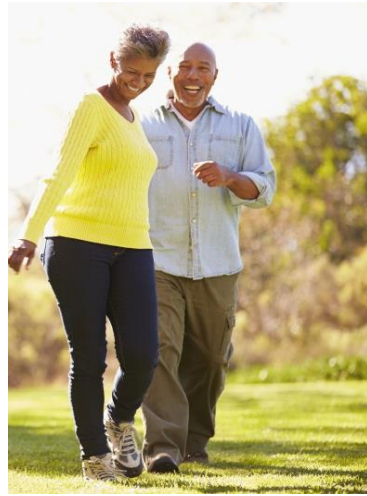
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



CRAWFORD COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

CRAWFORD COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.2 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 1.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 3.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.7

Childhood Lead Poisoning

● 2.3% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 36.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 15.1 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 74.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 197.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Due to small numbers, aggregated rates were calculated for this county.
Years displayed in this profile: Aggregated data from 2004-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

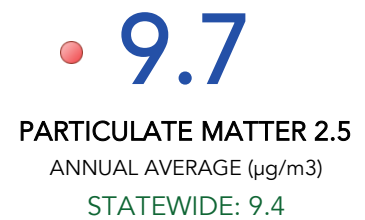
Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



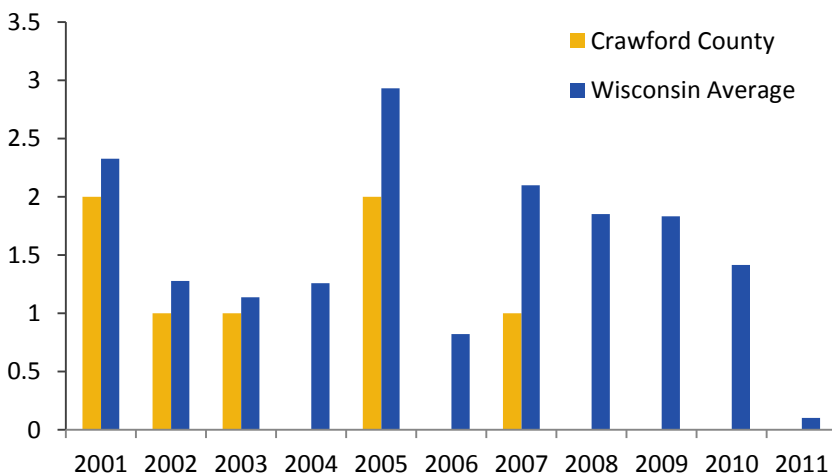
AIR QUALITY CRAWFORD COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.



● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

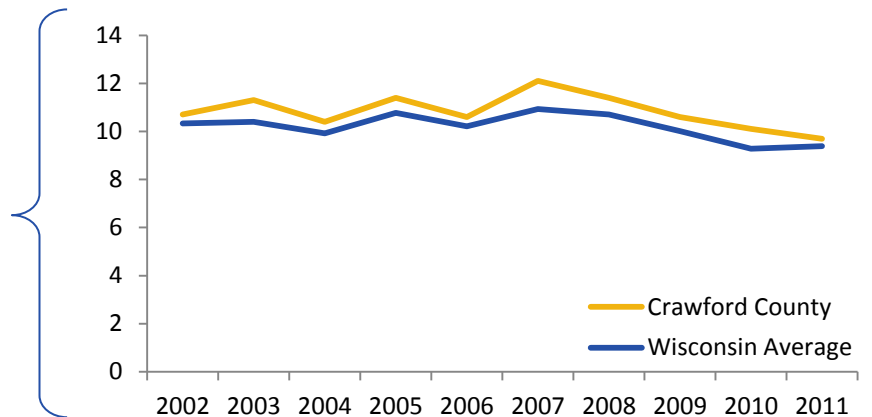
CRAWFORD COUNTY

PARTICULATE MATTER 2.5

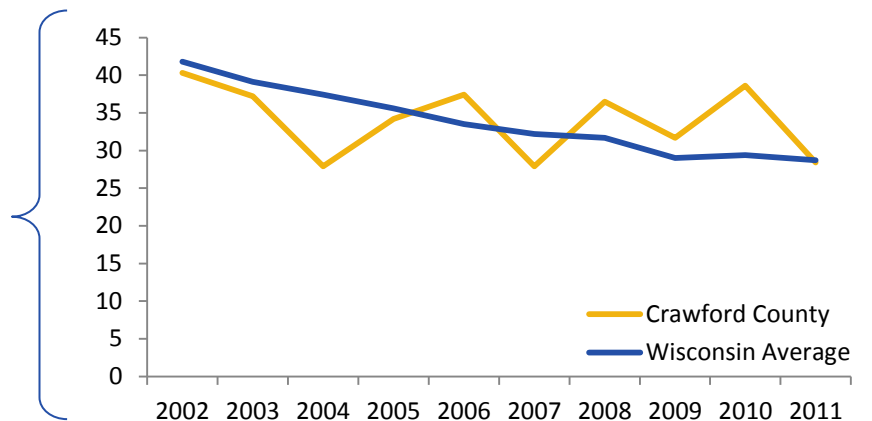
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

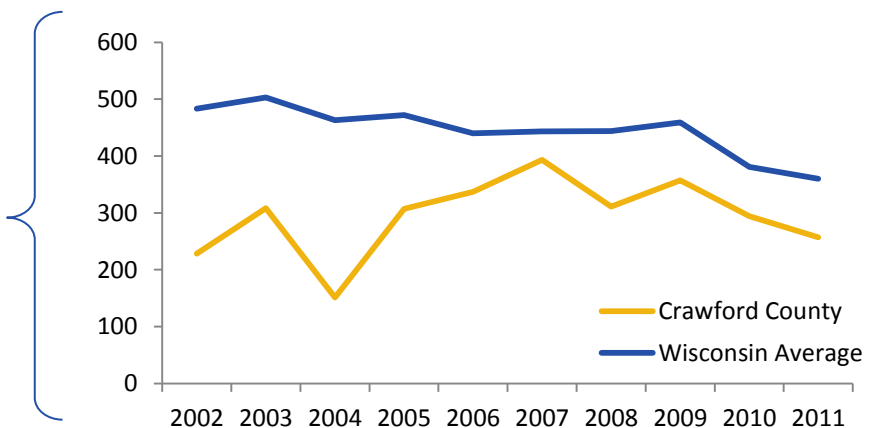
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



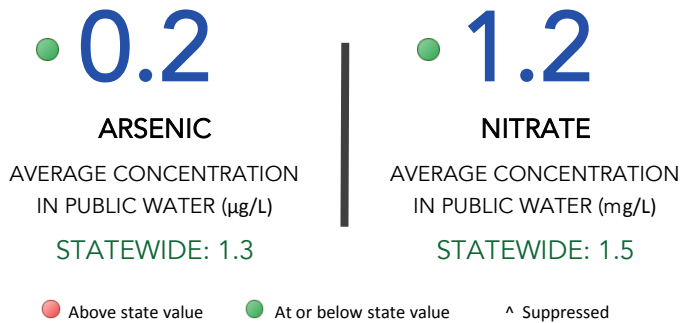
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY CRAWFORD COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

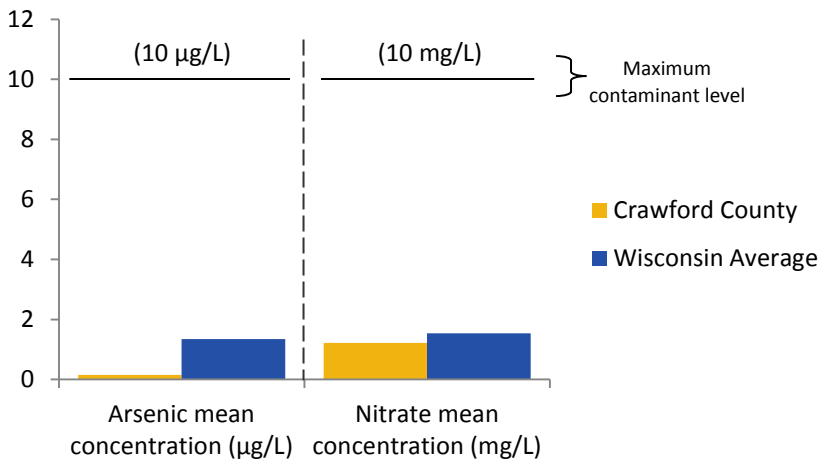
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY CRAWFORD COUNTY

PRIVATE DRINKING WATER

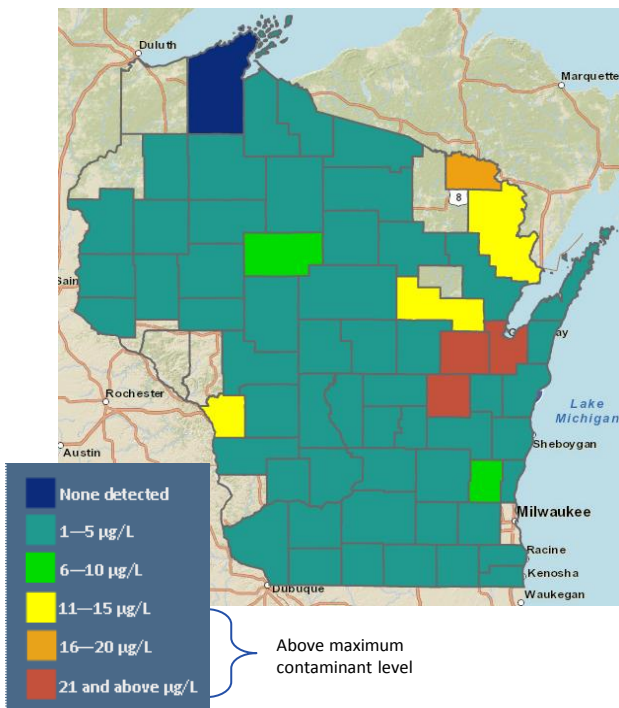
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

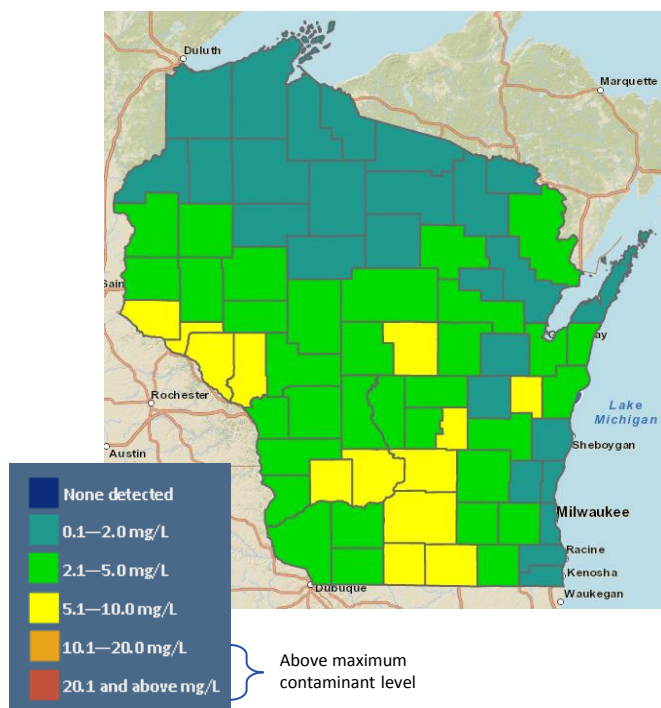
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS CRAWFORD COUNTY

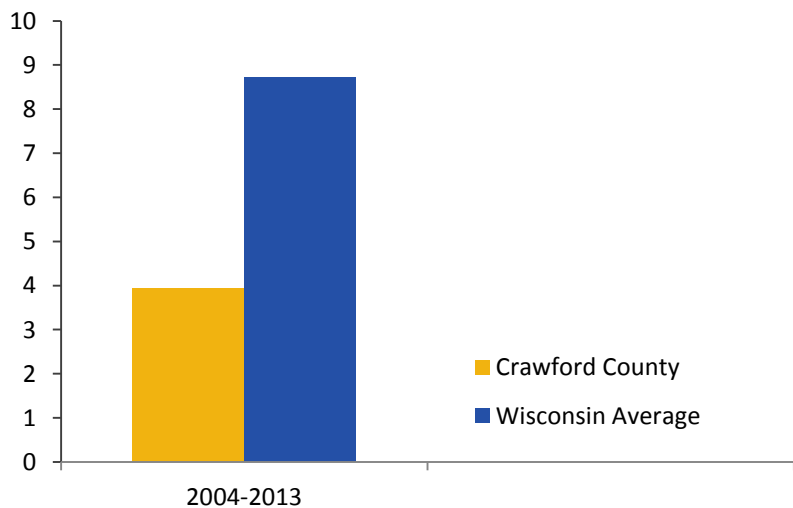
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

- **3.9**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.7

- **2.3%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

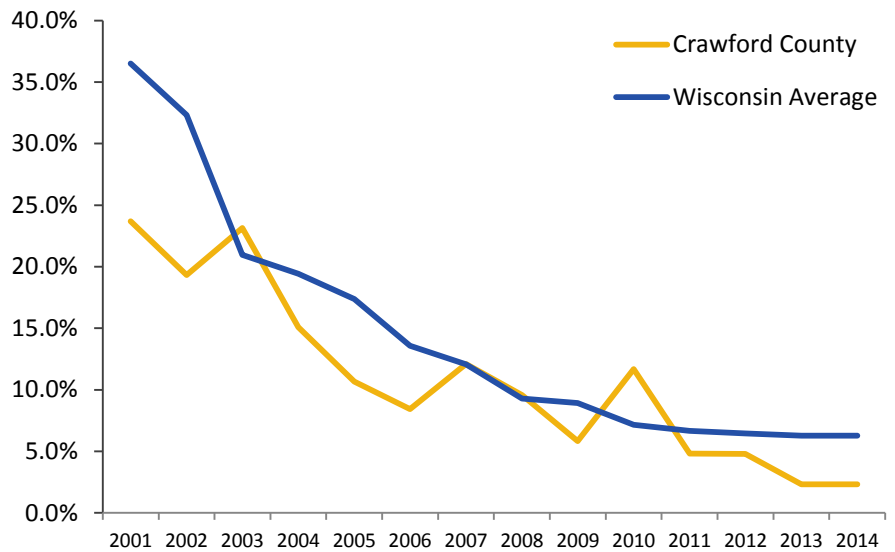
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

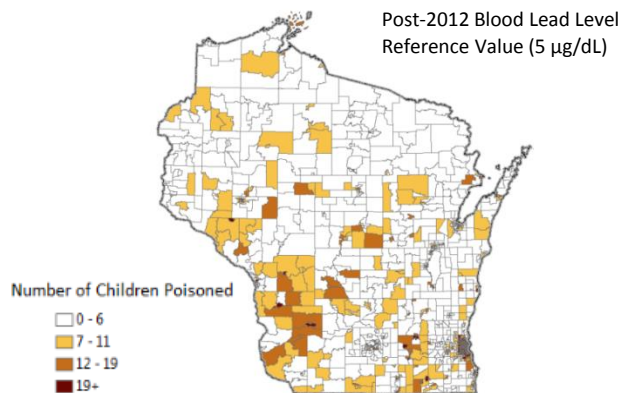
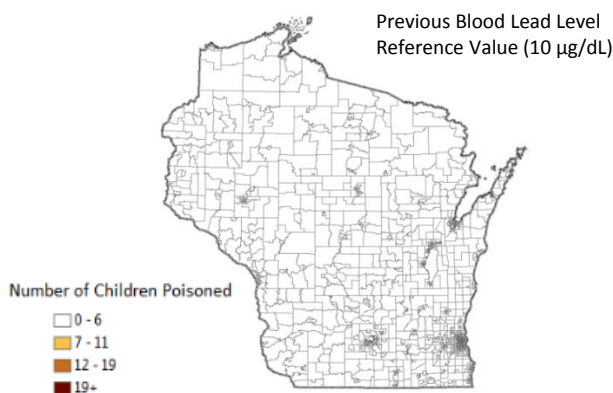
CHILDHOOD LEAD POISONING

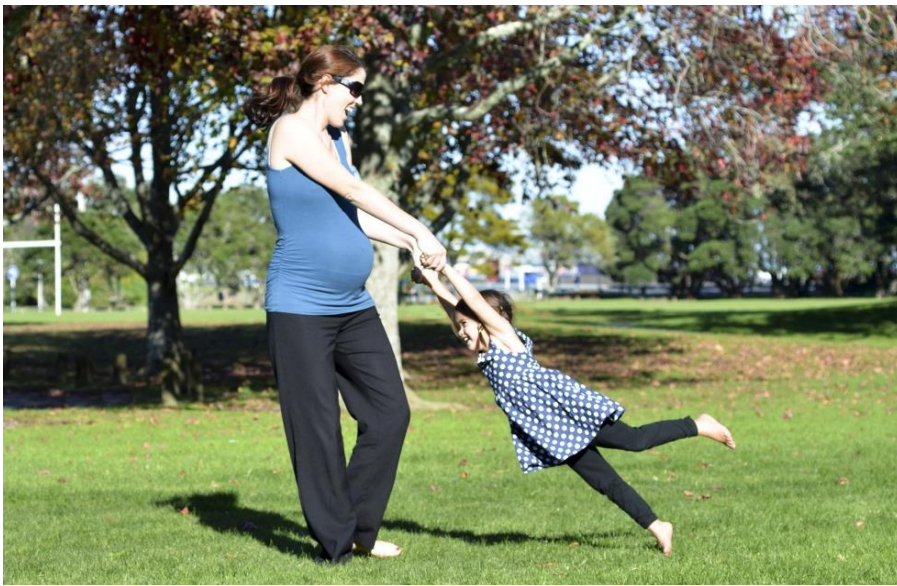
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

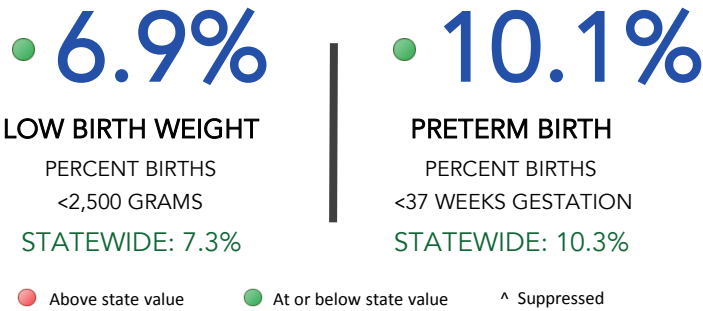
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES CRAWFORD COUNTY

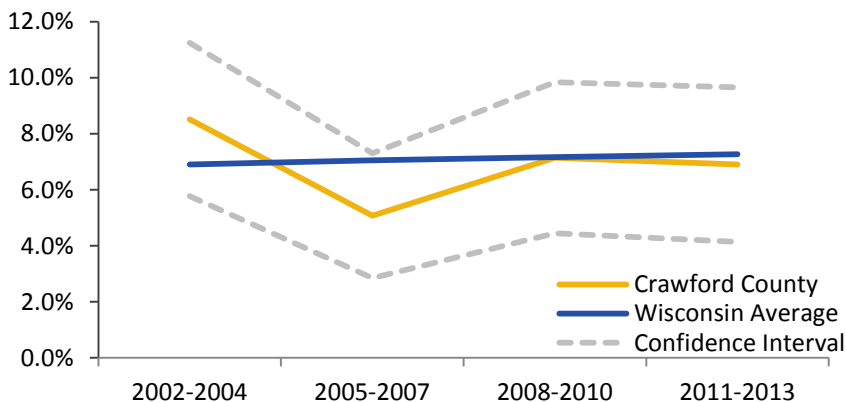
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

CRAWFORD COUNTY

PRETERM BIRTH

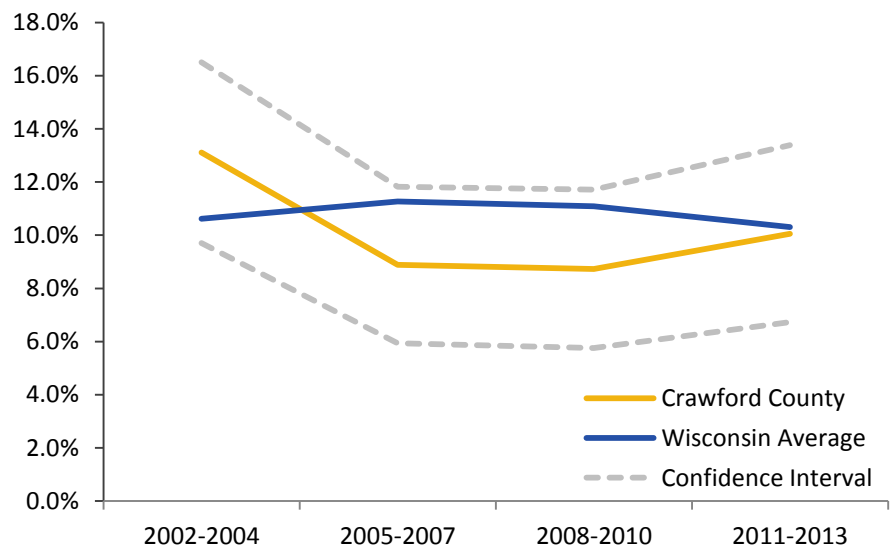
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

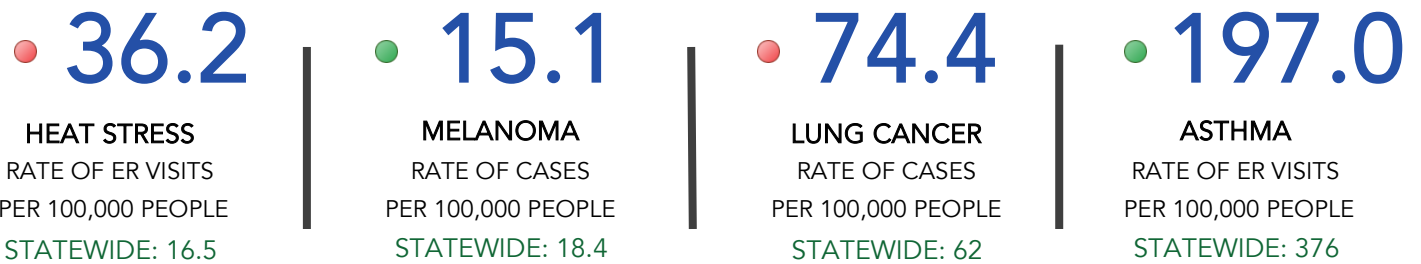
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS CRAWFORD COUNTY

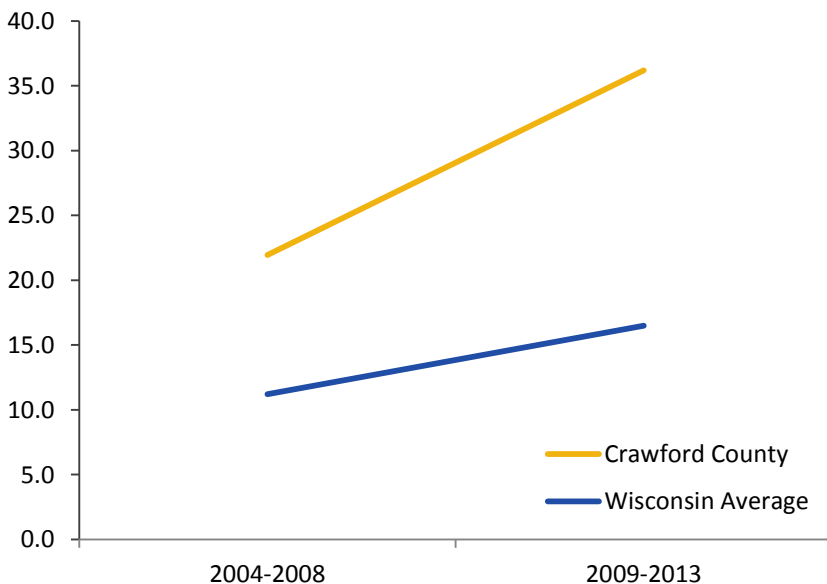
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht

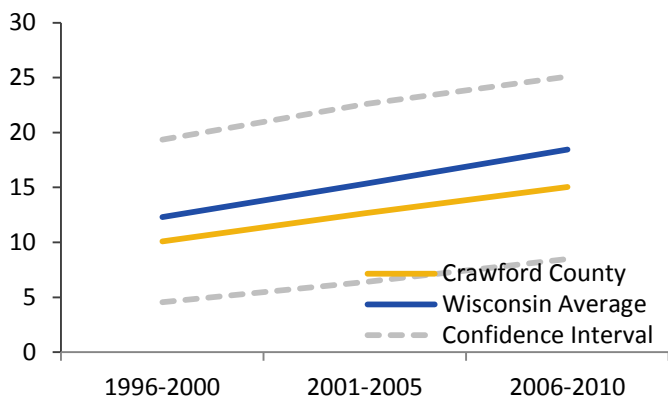


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



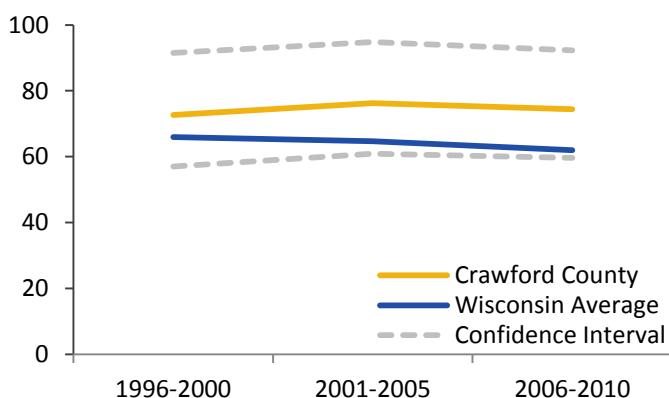
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



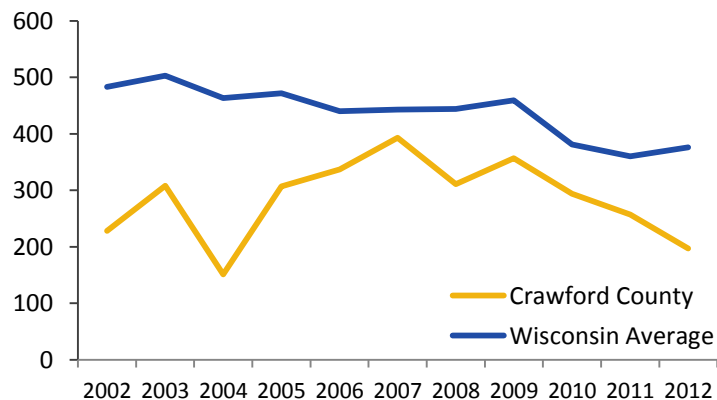
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data aggregated from 2004-2013 displayed on the dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. Due to small numbers, aggregated rates were calculated for this county.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

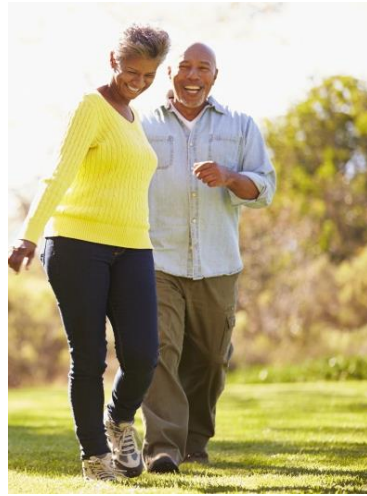
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



DANE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
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DANE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 1.1 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.5 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.4% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.0% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 11.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 19.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 54.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 198.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY DANE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 1.1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

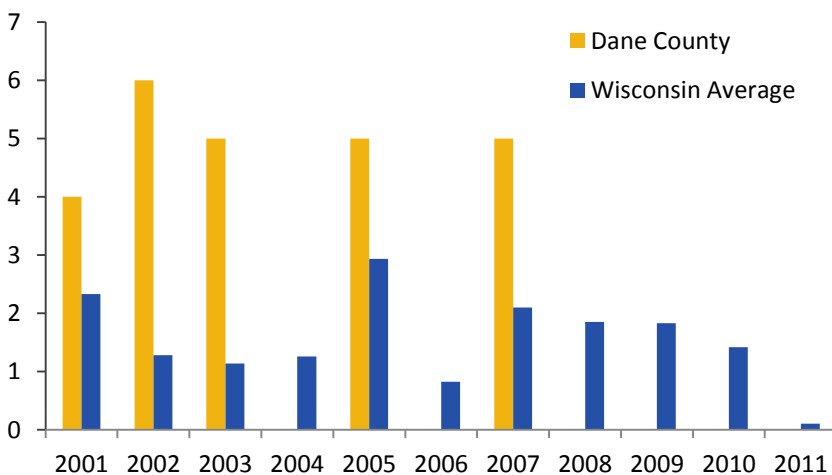
● 10.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

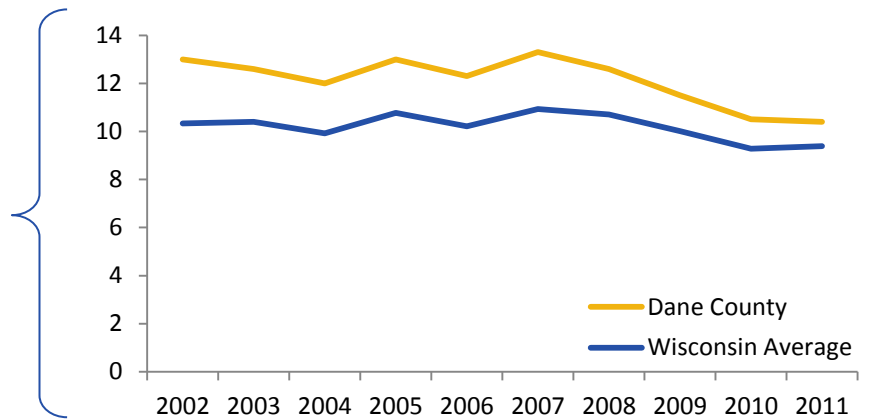
DANE COUNTY

PARTICULATE MATTER 2.5

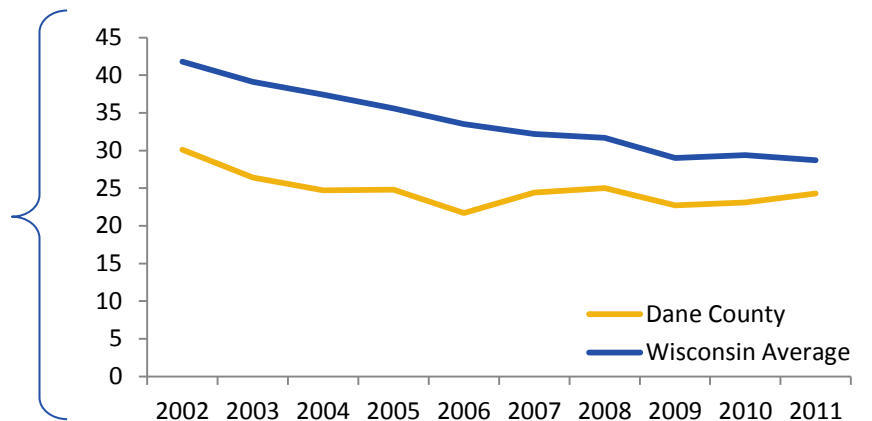
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

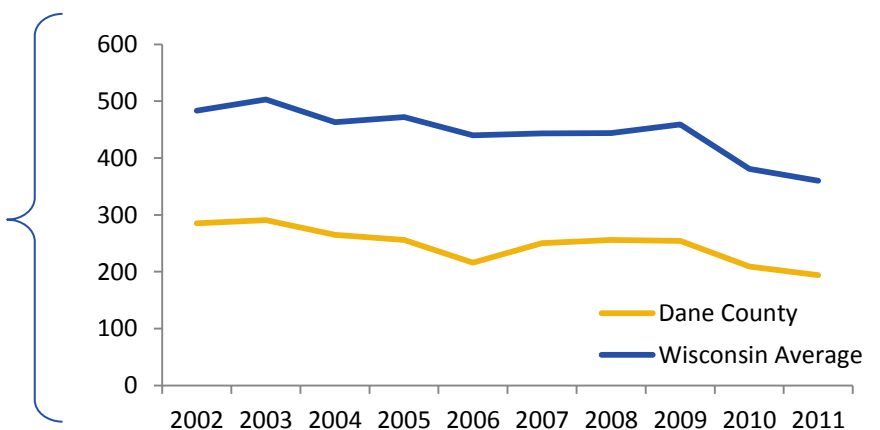
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



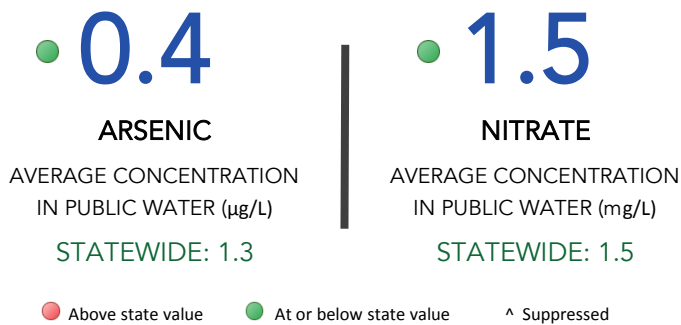
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY DANE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

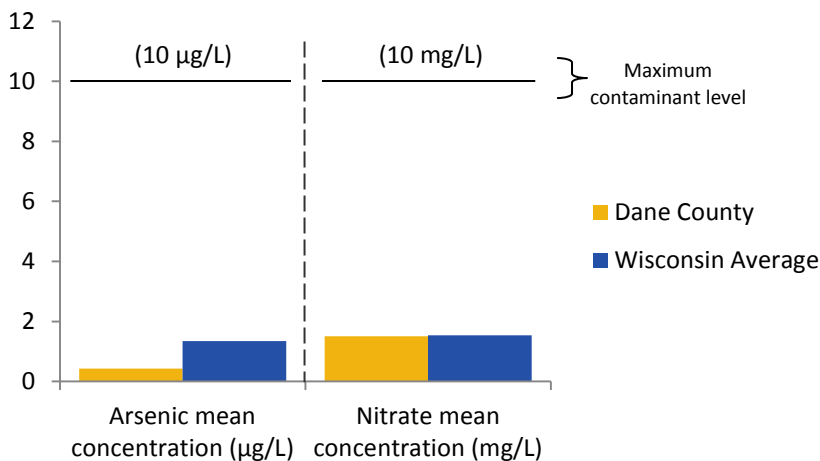
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY DANE COUNTY

PRIVATE DRINKING WATER

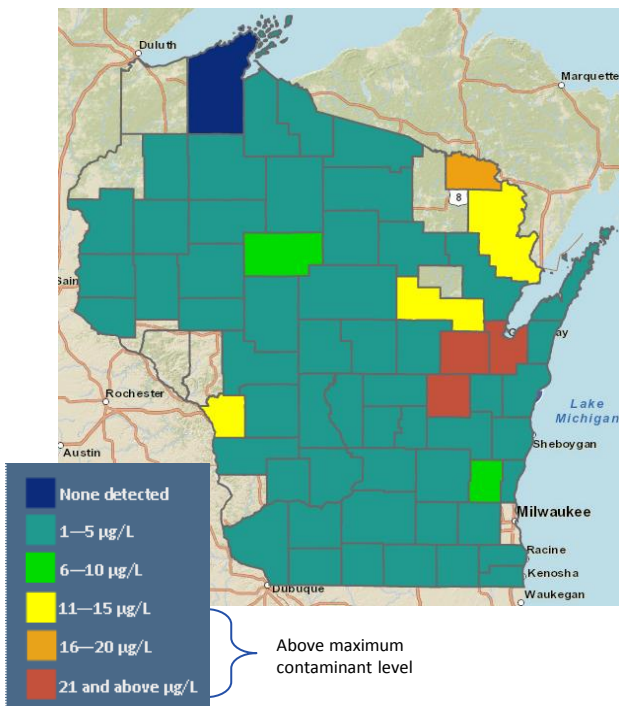
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

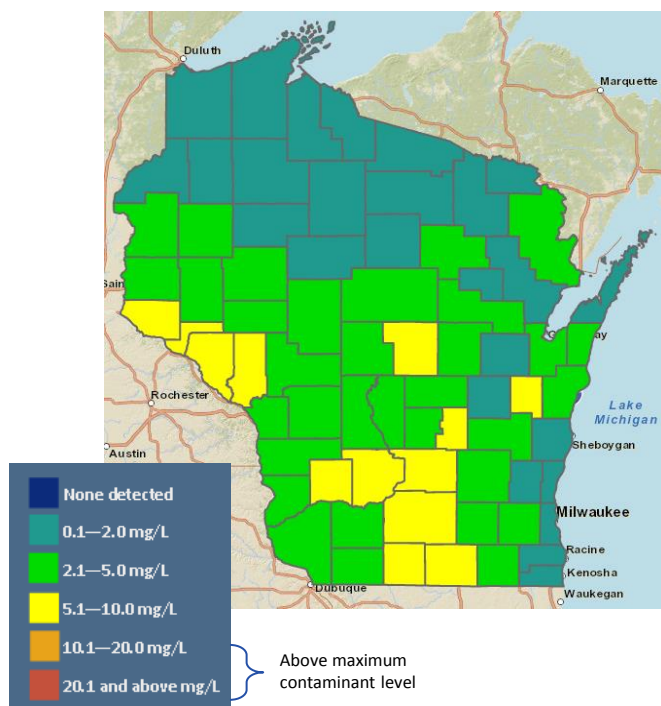
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS DANE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.1**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **1.4%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

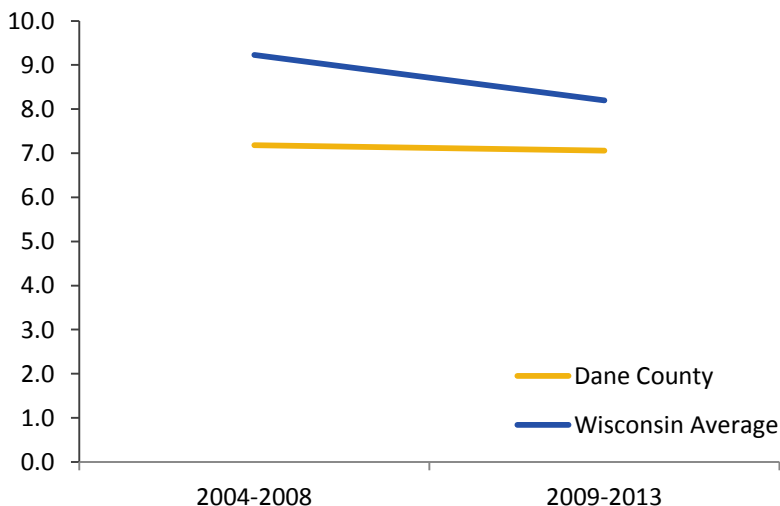
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. § 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

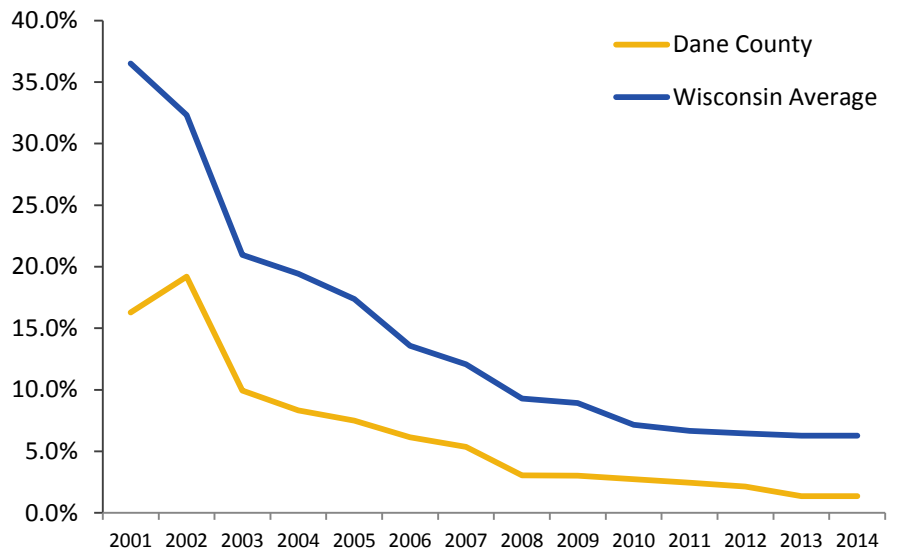
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

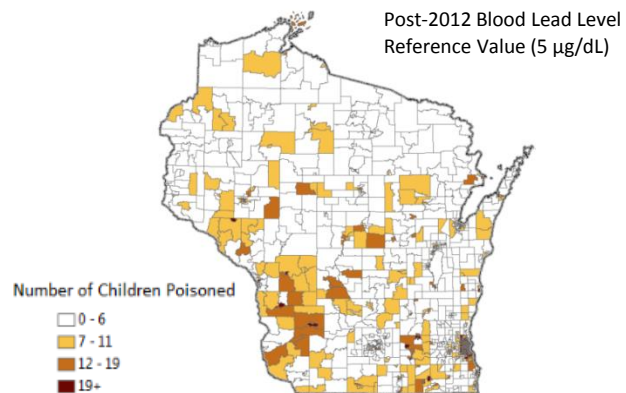
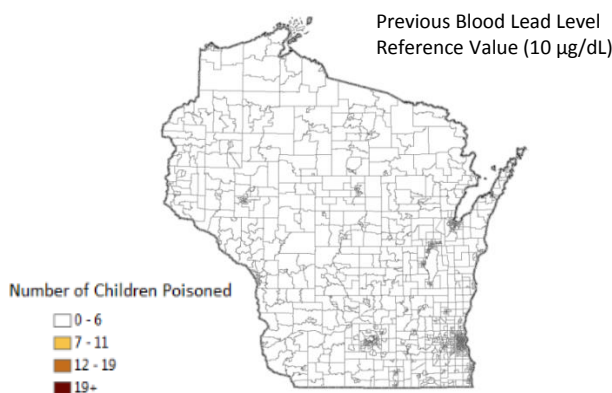
CHILDHOOD LEAD POISONING

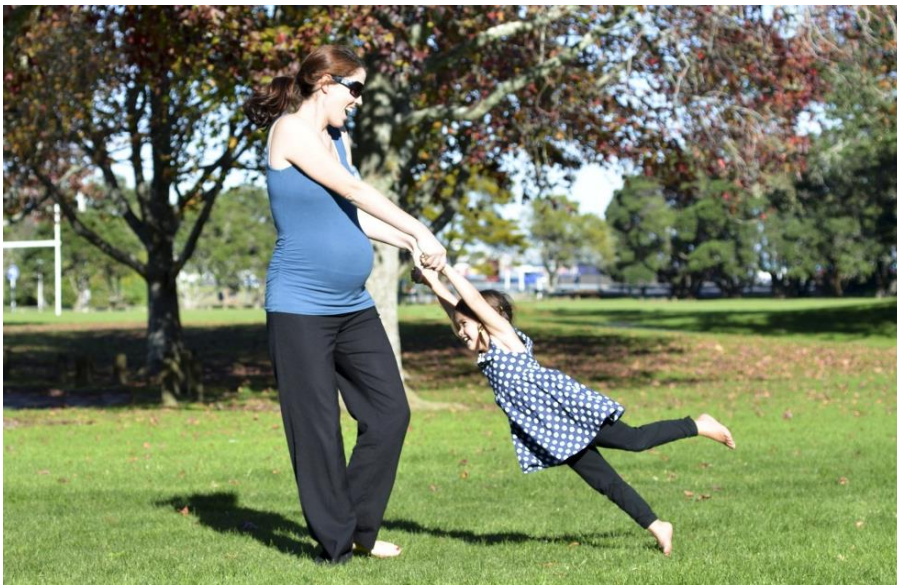
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES DANE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **7.0%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.4%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

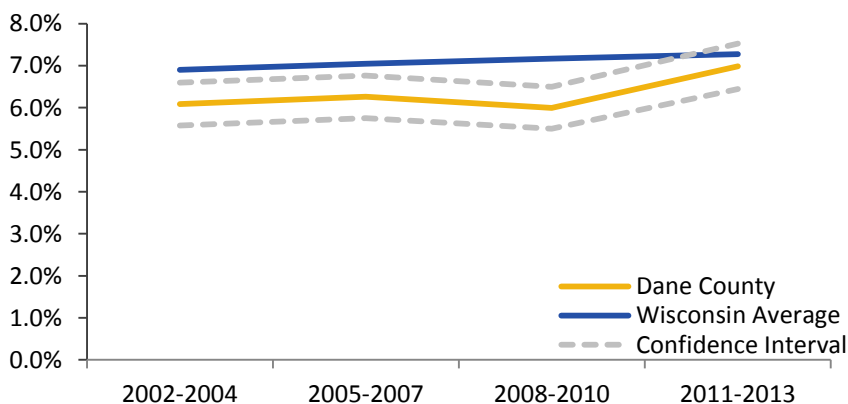
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

DANE COUNTY

PRETERM BIRTH

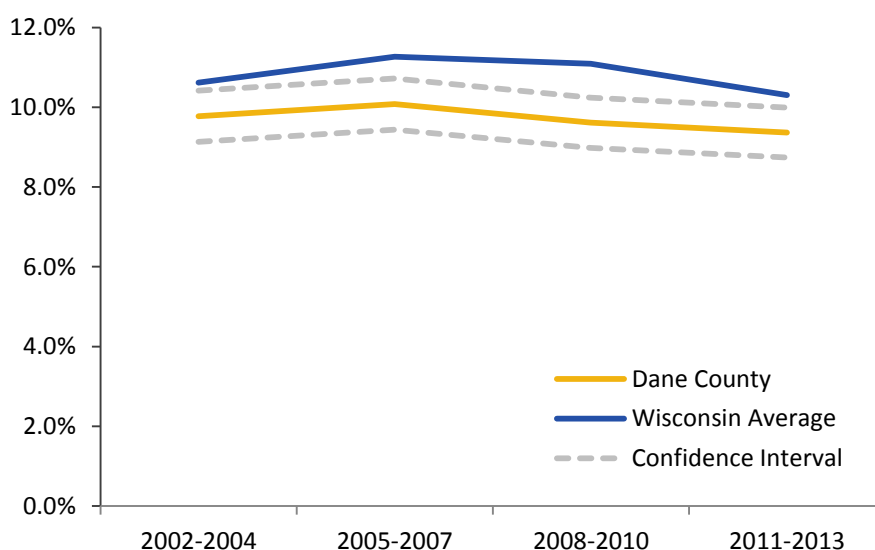
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS DANE COUNTY

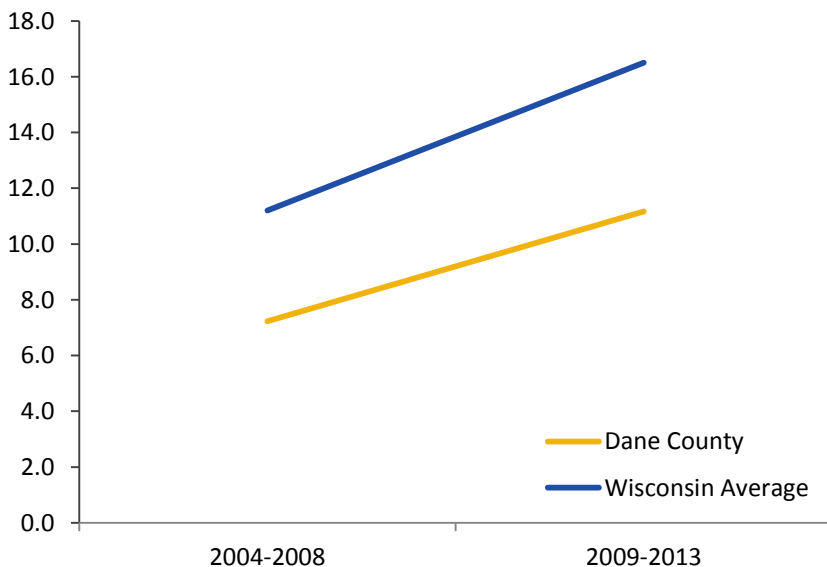
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 11.2</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 19.2</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 54.2</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 198.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



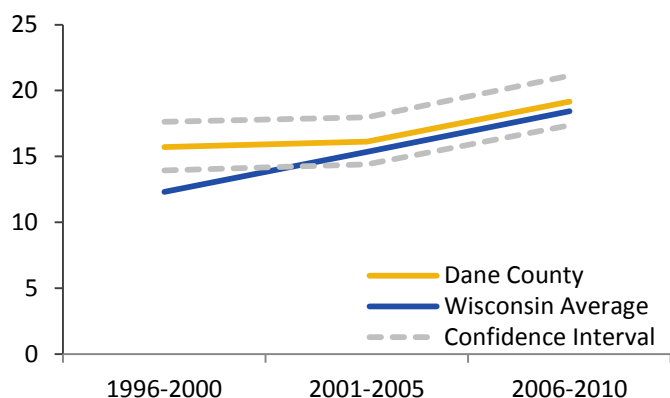


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



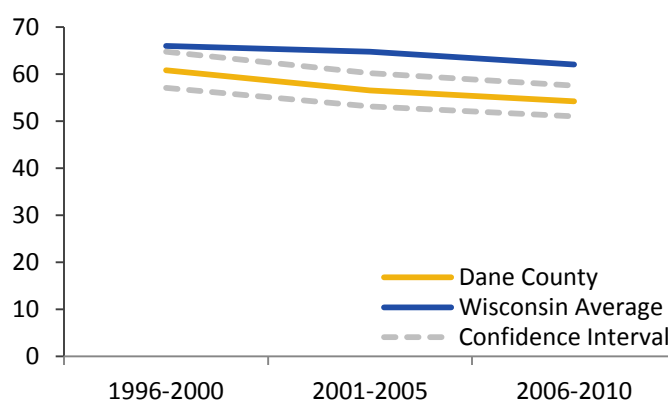
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



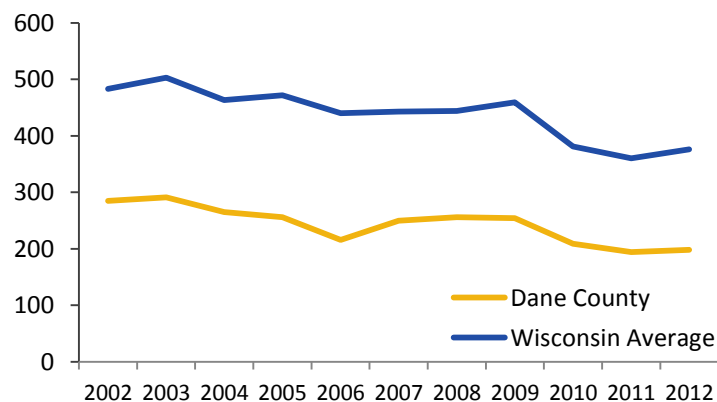
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

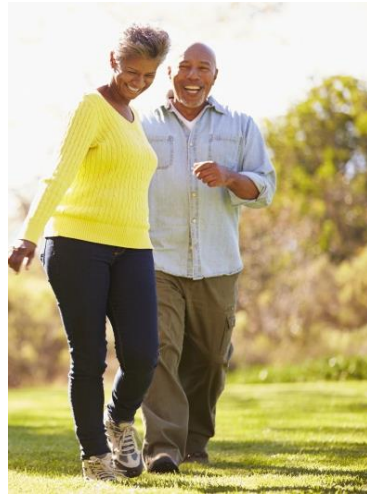
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



DODGE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DODGE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

4.6 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

10.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

4.4% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

6.8% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

9.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

28.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

13.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

58.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

368.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY DODGE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

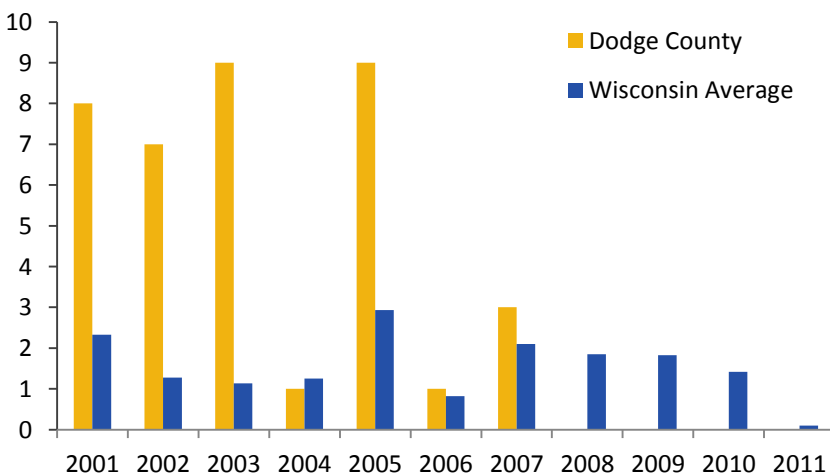
● 10.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

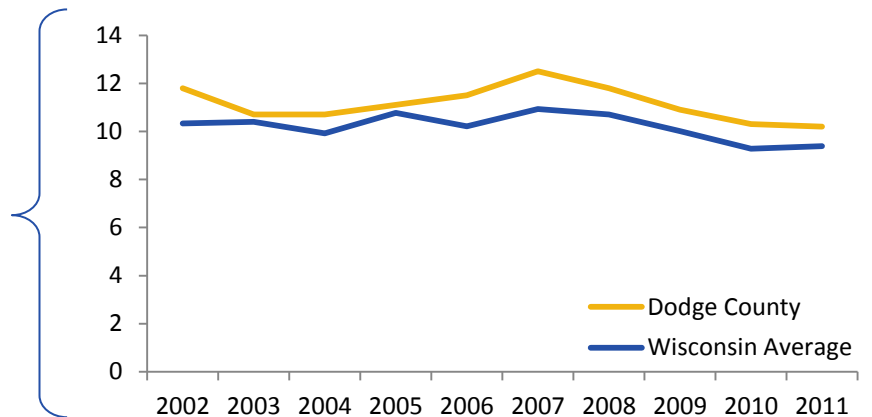
DODGE COUNTY

PARTICULATE MATTER 2.5

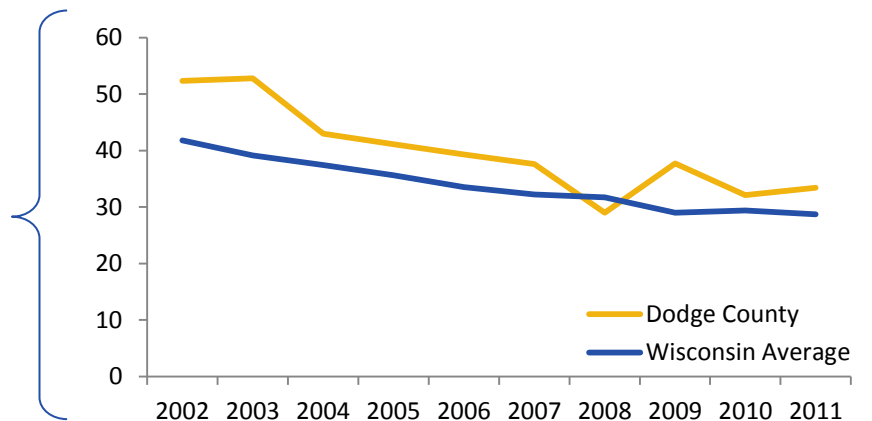
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

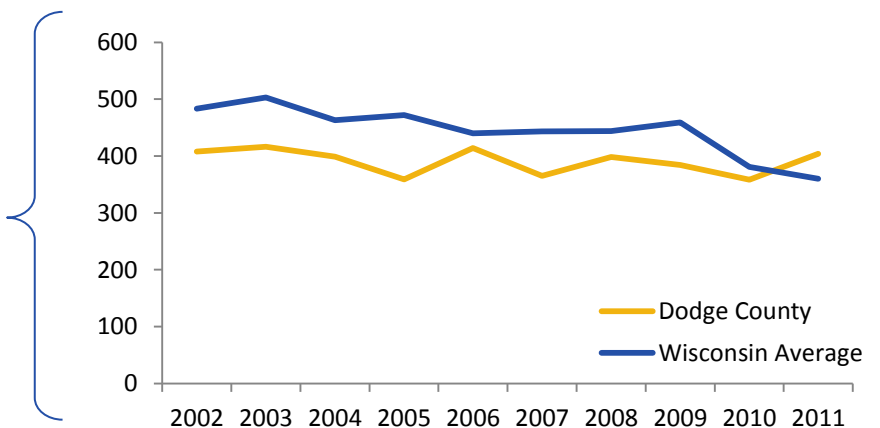
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



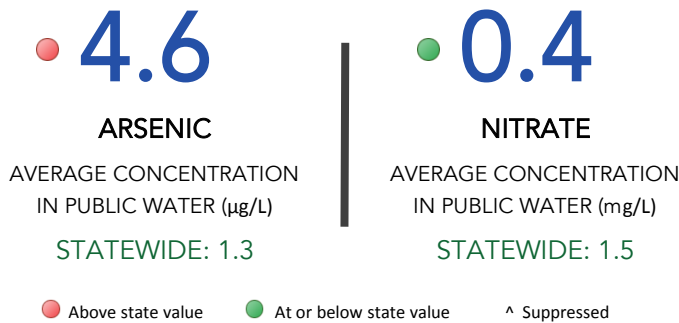
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY DODGE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

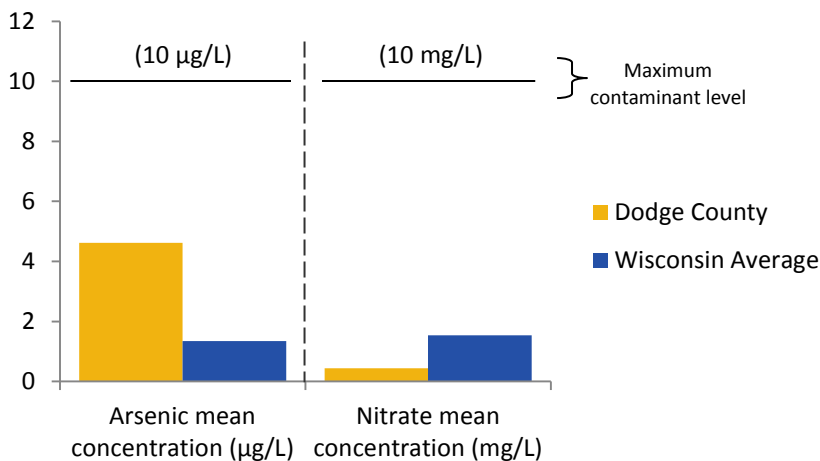
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY DODGE COUNTY

PRIVATE DRINKING WATER

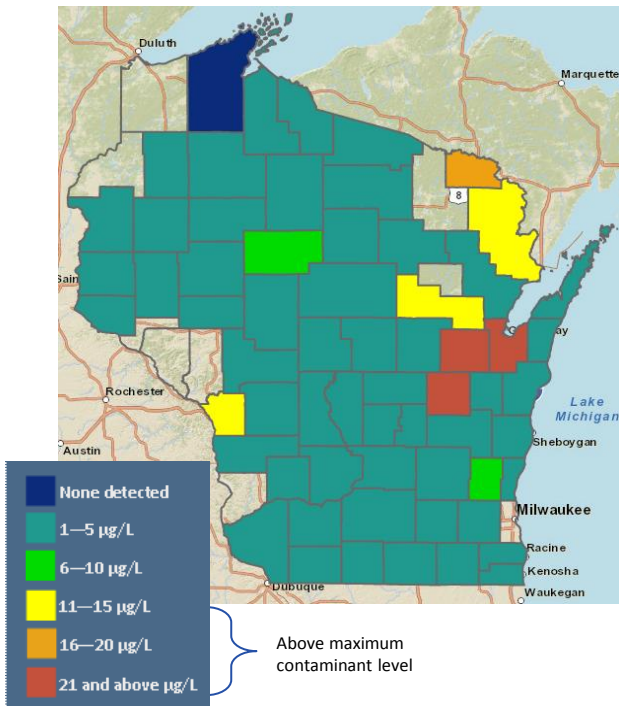
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

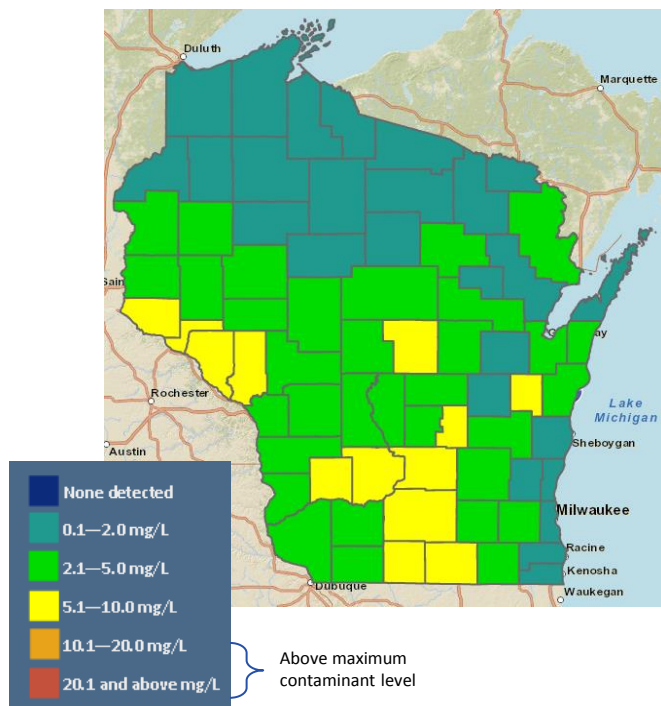
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

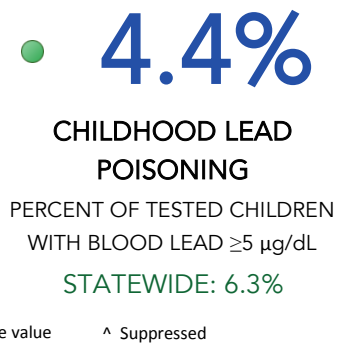
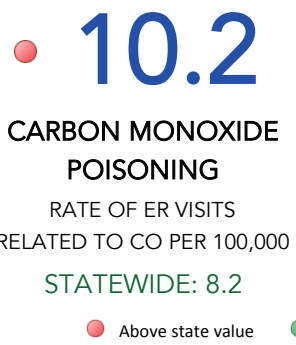


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

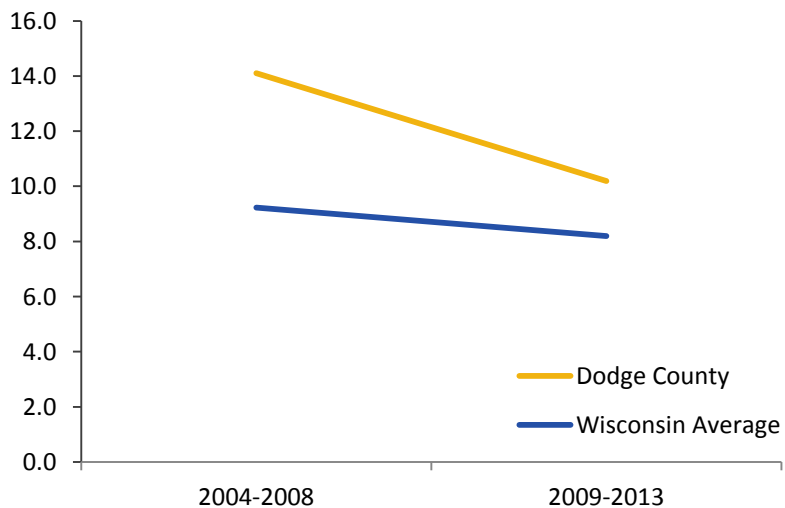


HOME HAZARDS DODGE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. § 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

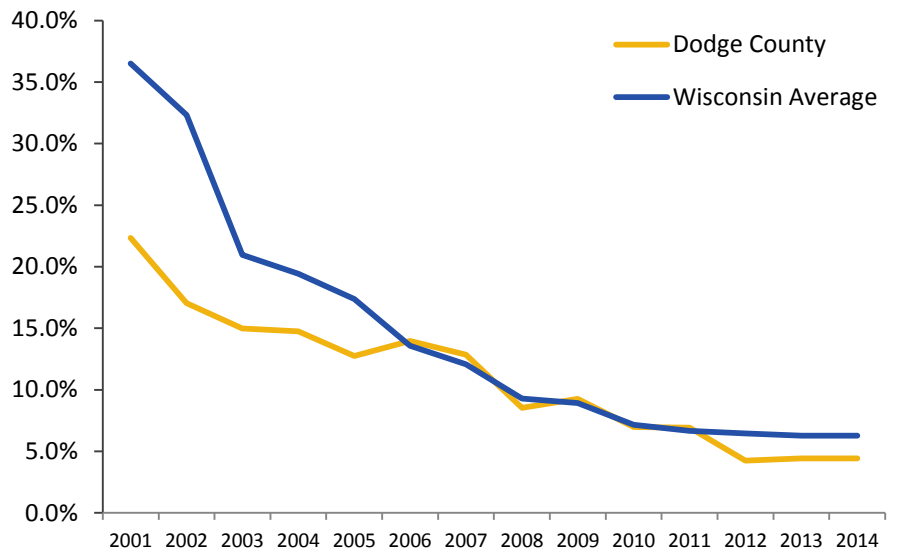
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

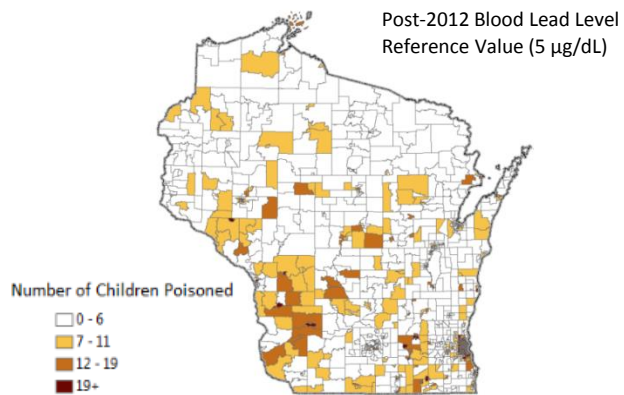
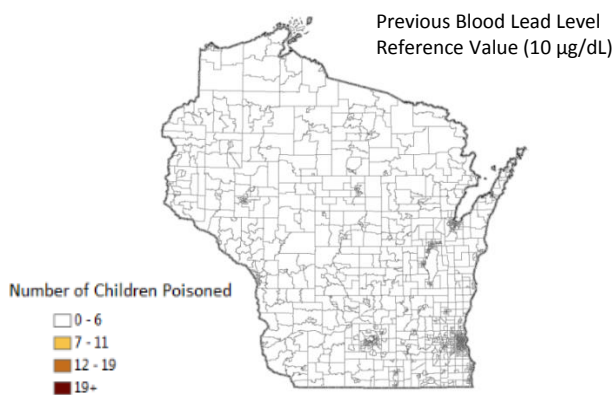
CHILDHOOD LEAD POISONING

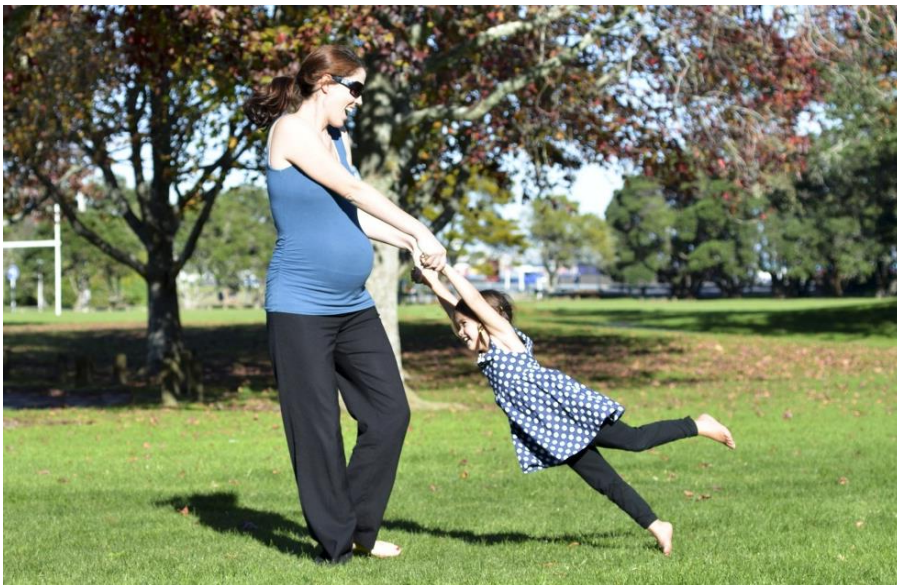
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

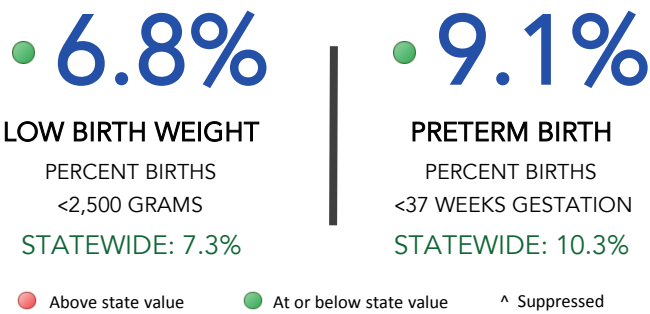
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES DODGE COUNTY

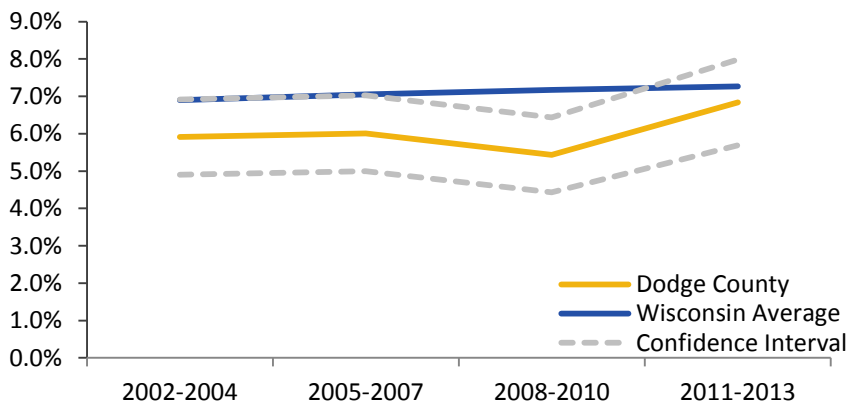
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES DODGE COUNTY

PRETERM BIRTH

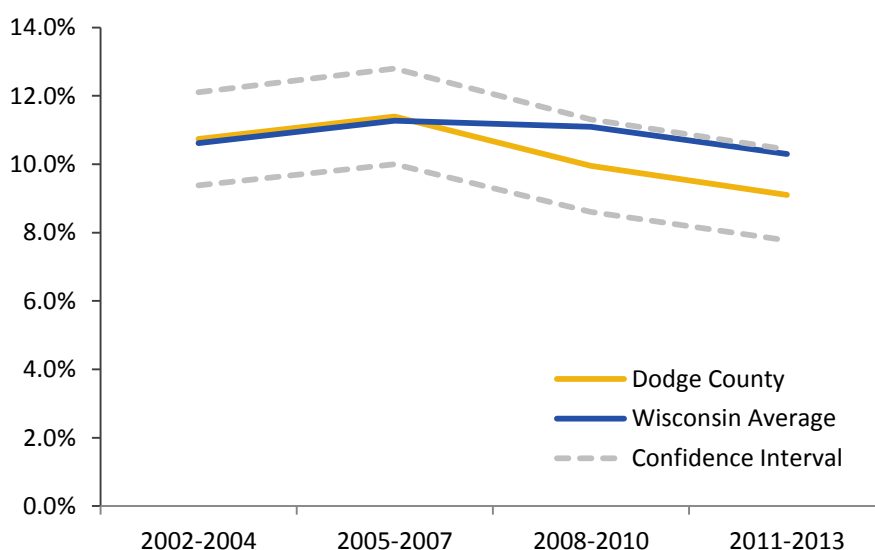
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

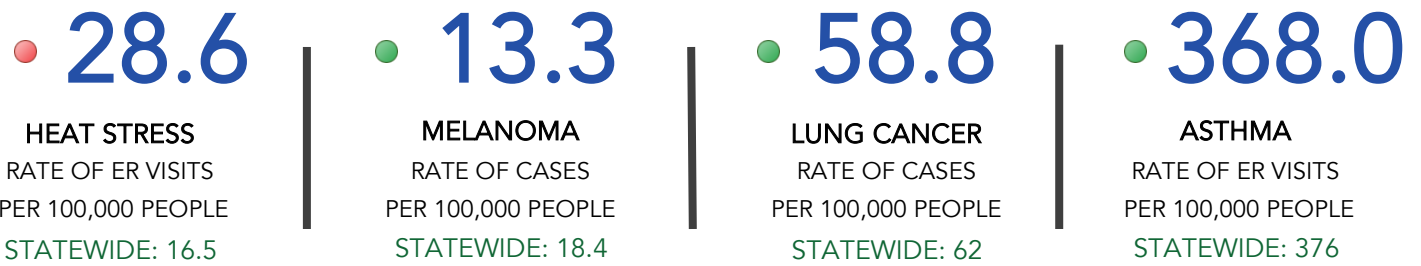
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS DODGE COUNTY

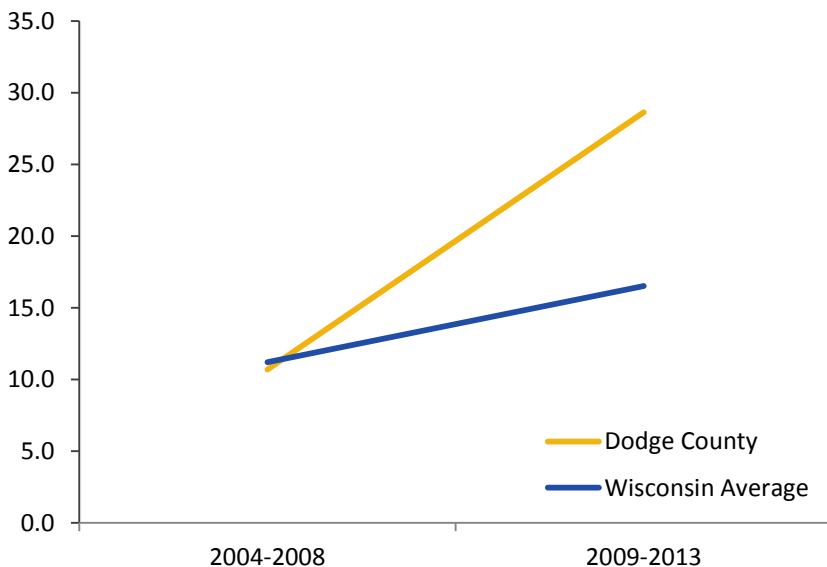
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



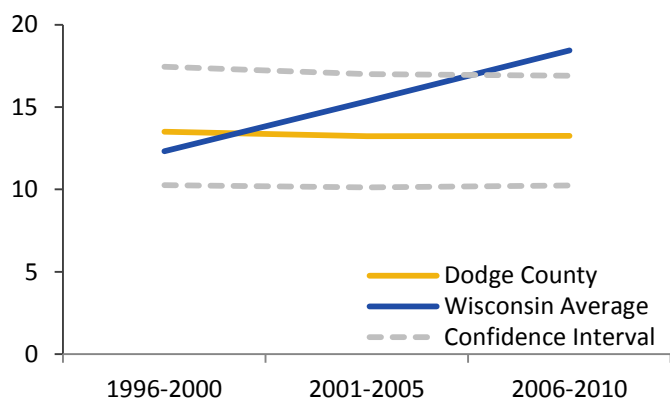


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



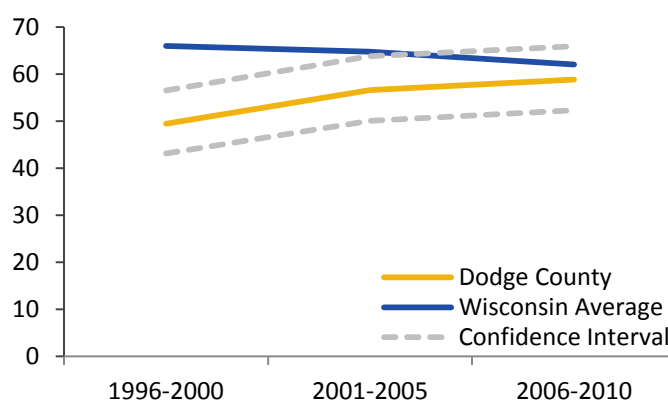
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



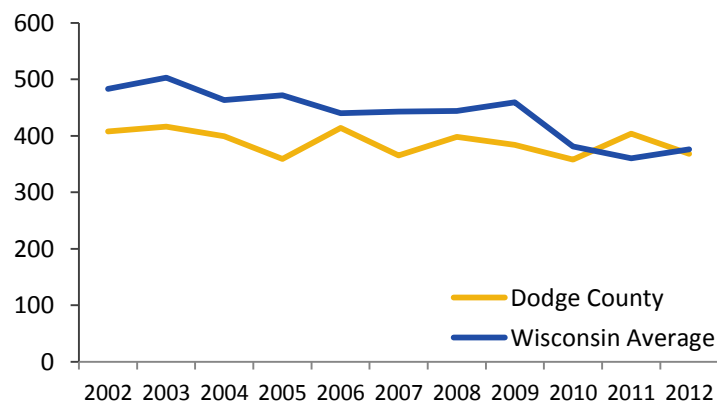
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



DOOR COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DOOR COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 3.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.3 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 9.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.6% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.6% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 11.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 36.8 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 54.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 332.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY DOOR COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● **3.0**

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● **0.0**

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

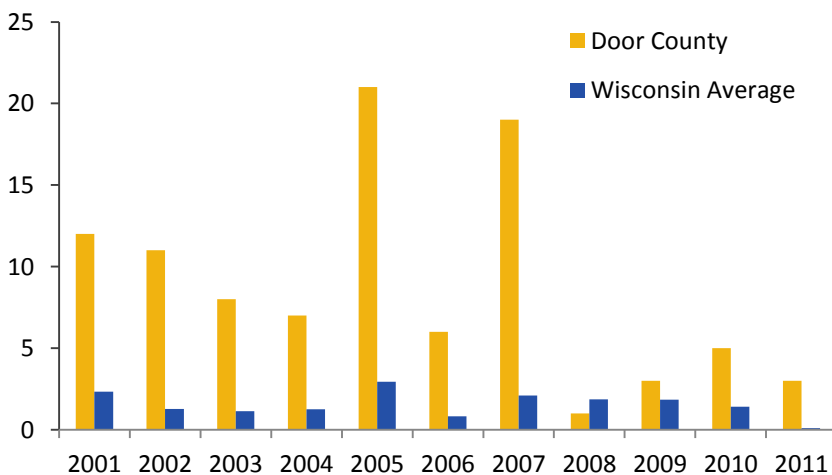
● **8.9**

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

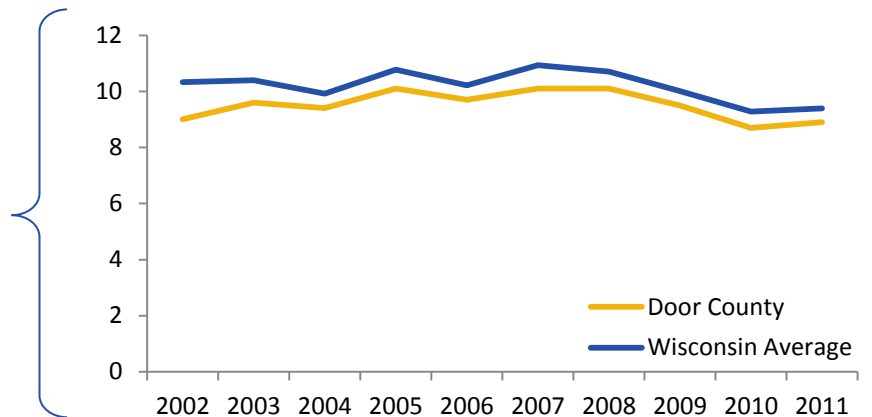
DOOR COUNTY

PARTICULATE MATTER 2.5

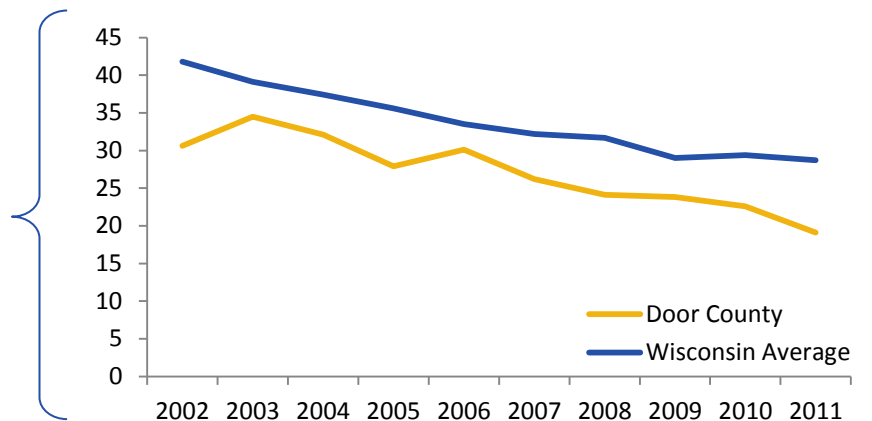
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

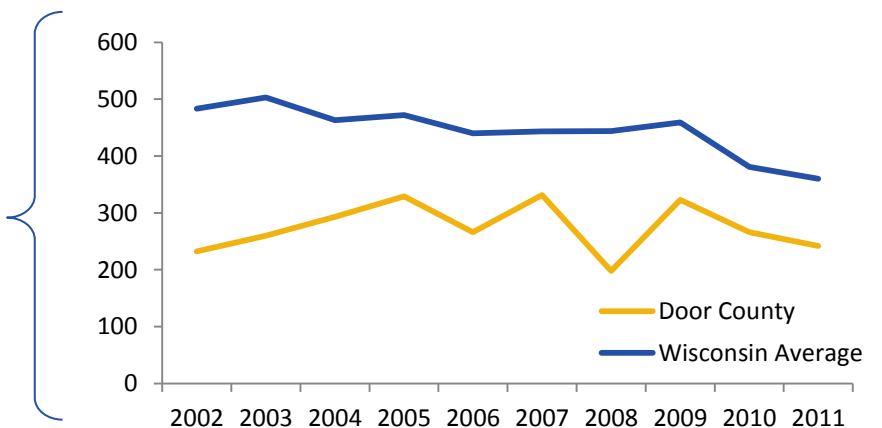
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY DOOR COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● 0.3

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● 2.3

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

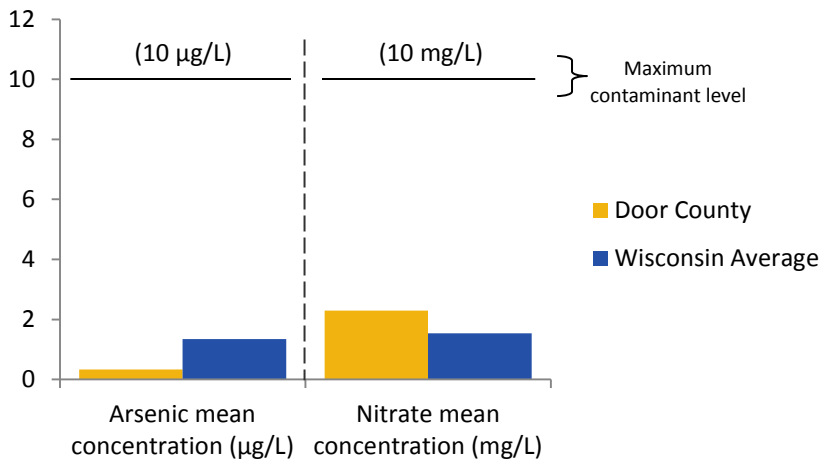
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY DOOR COUNTY

PRIVATE DRINKING WATER

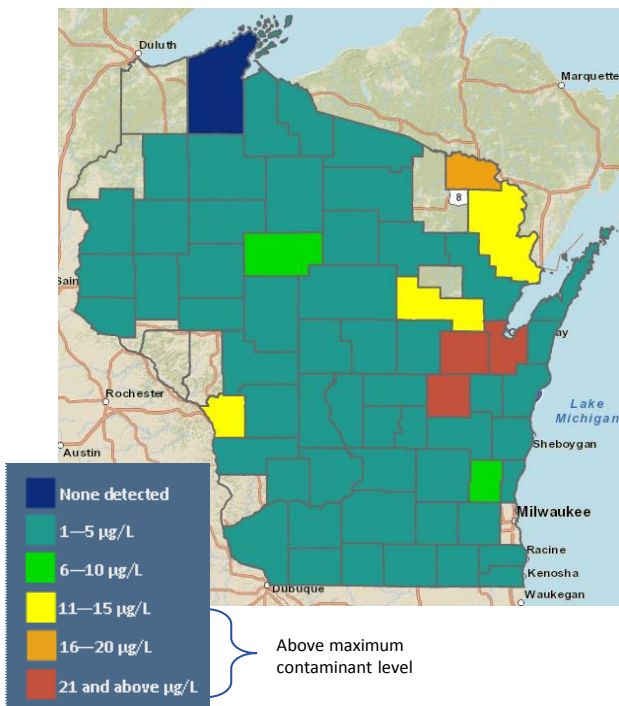
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

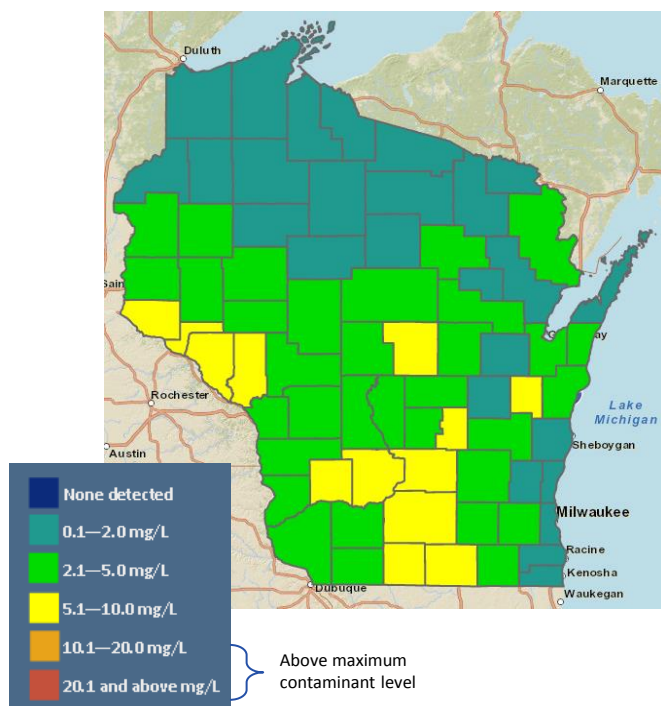
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

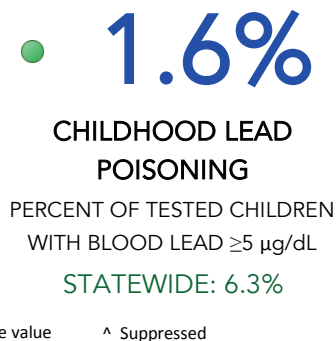
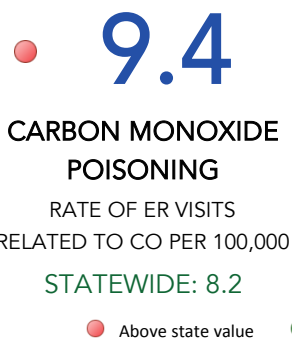


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS DOOR COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

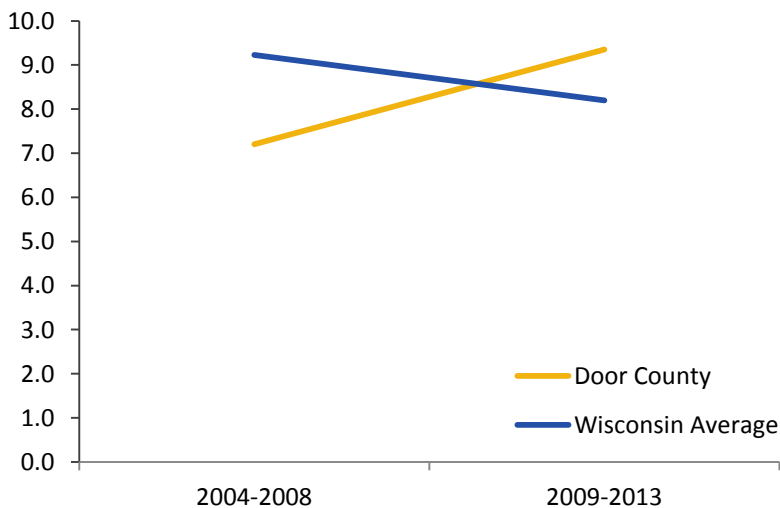


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

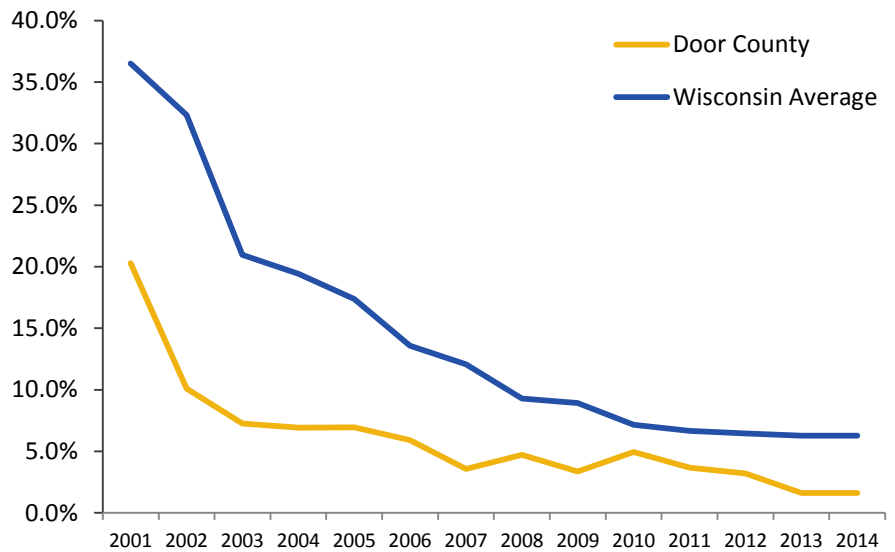
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

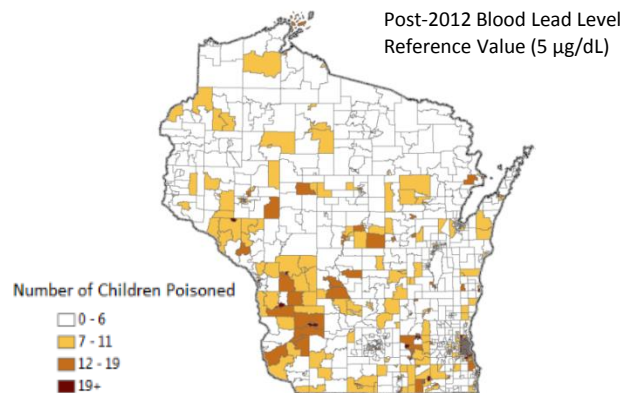
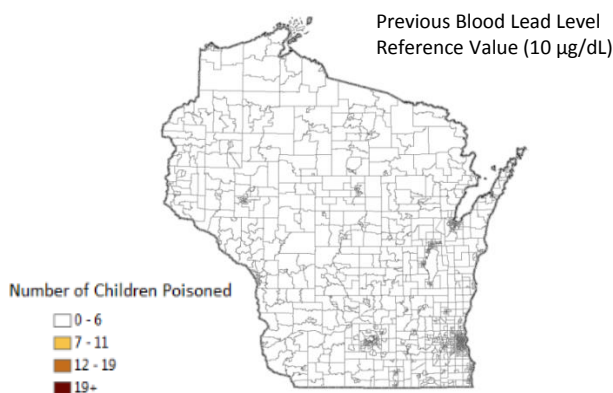
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES DOOR COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **5.6%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.7%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

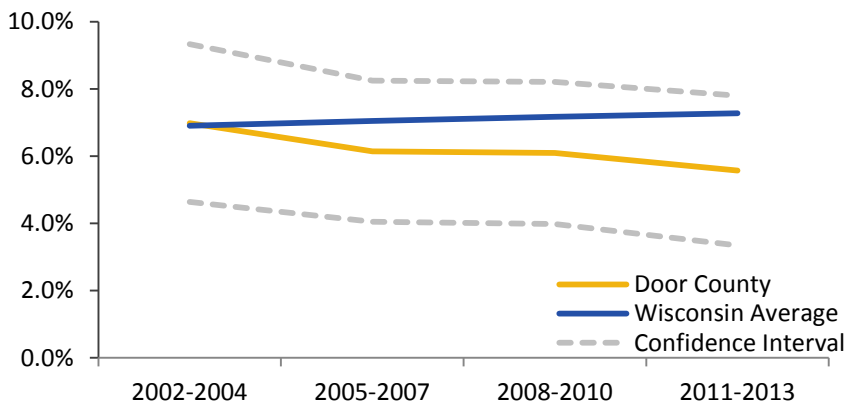
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES DOOR COUNTY

PRETERM BIRTH

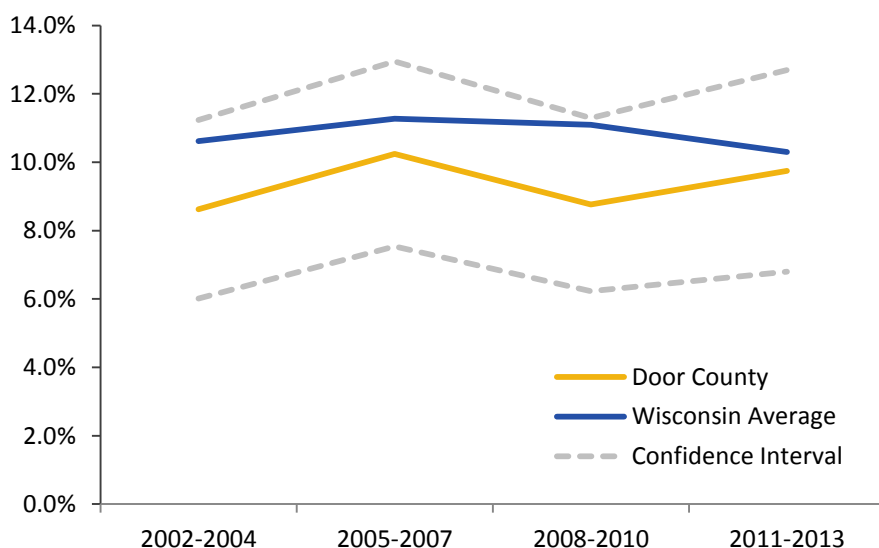
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

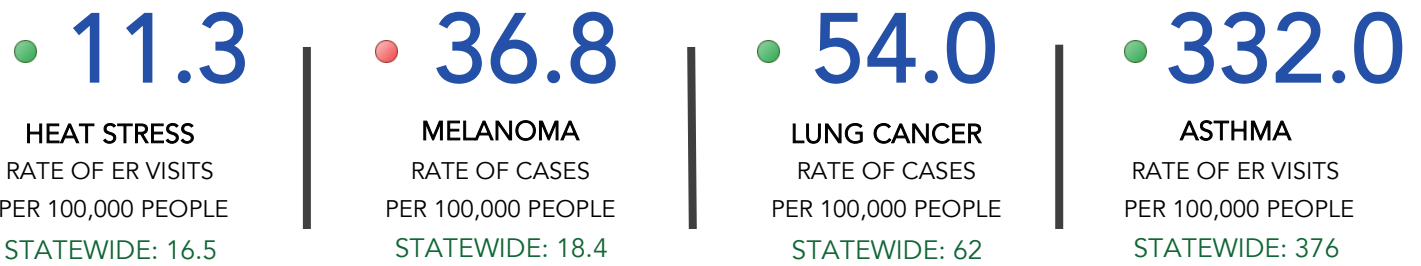
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS DOOR COUNTY

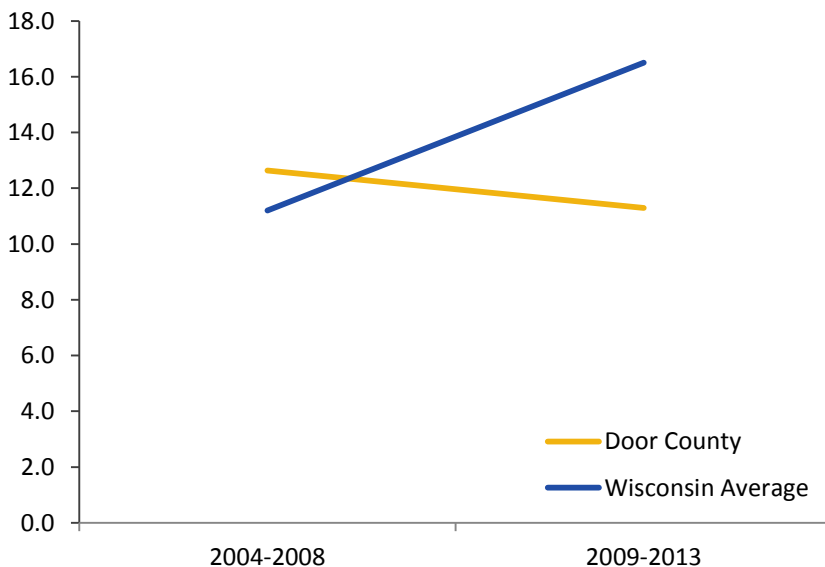
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



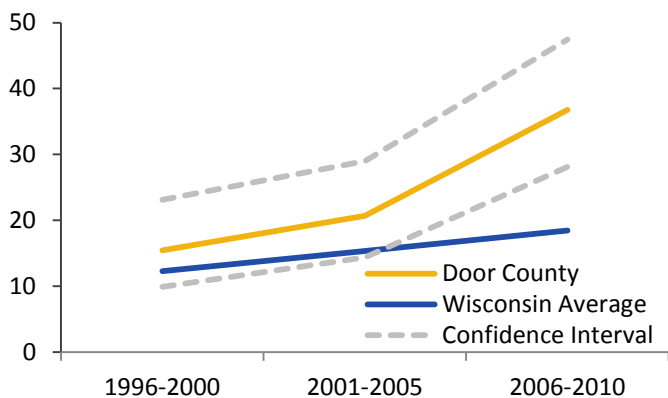


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



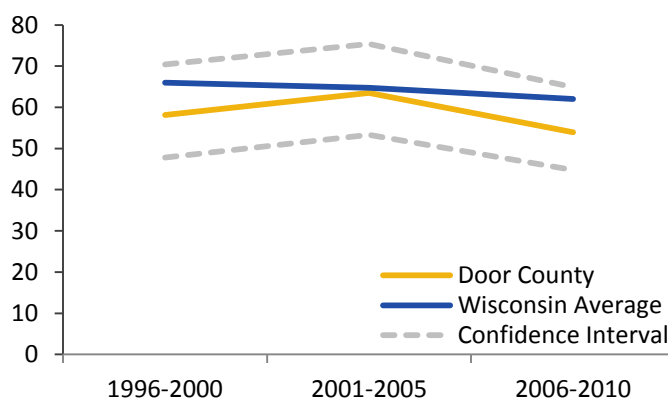
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



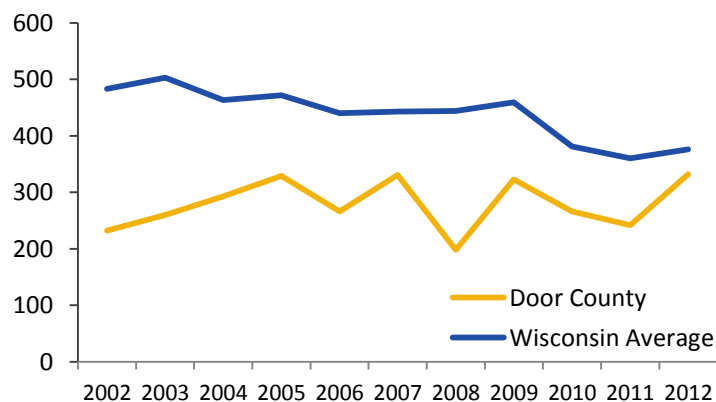
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



DOUGLAS COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DOUGLAS COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.0 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 0.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.3 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.0% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.8% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 17.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 15.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 62.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 462.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY DOUGLAS COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

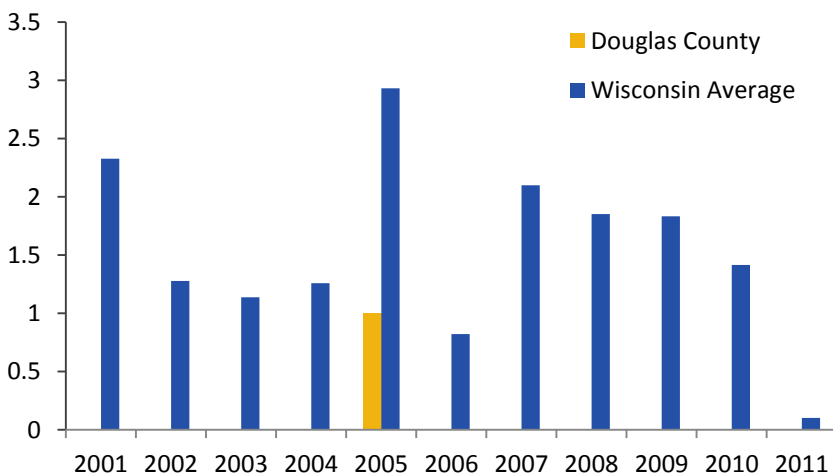
● 8.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

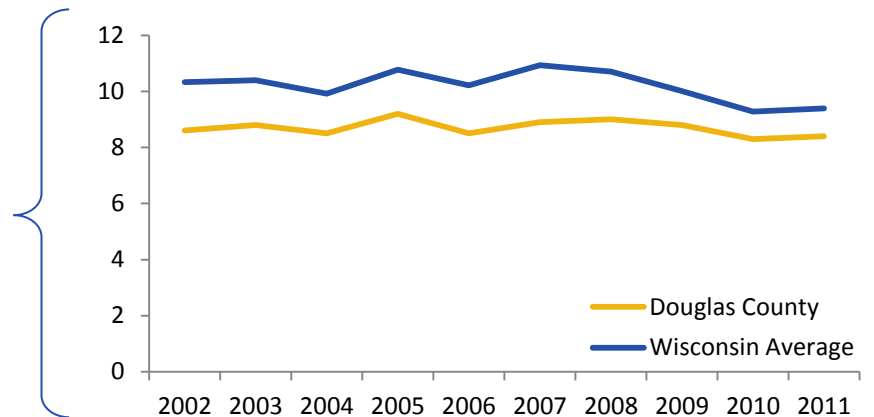
DOUGLAS COUNTY

PARTICULATE MATTER 2.5

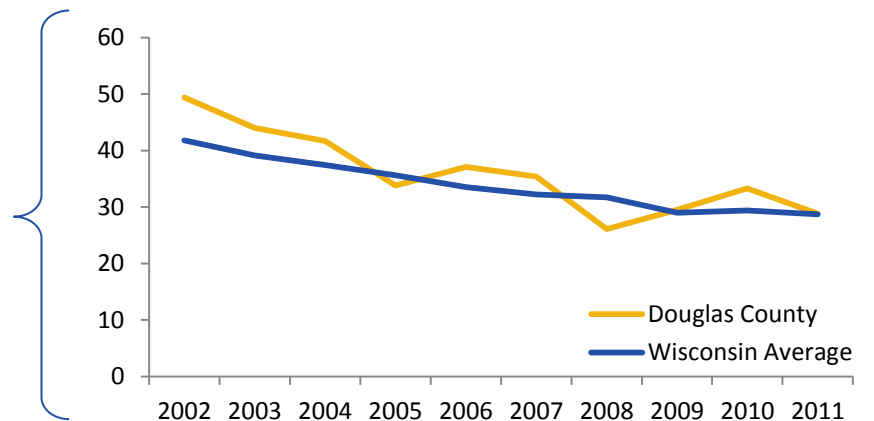
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

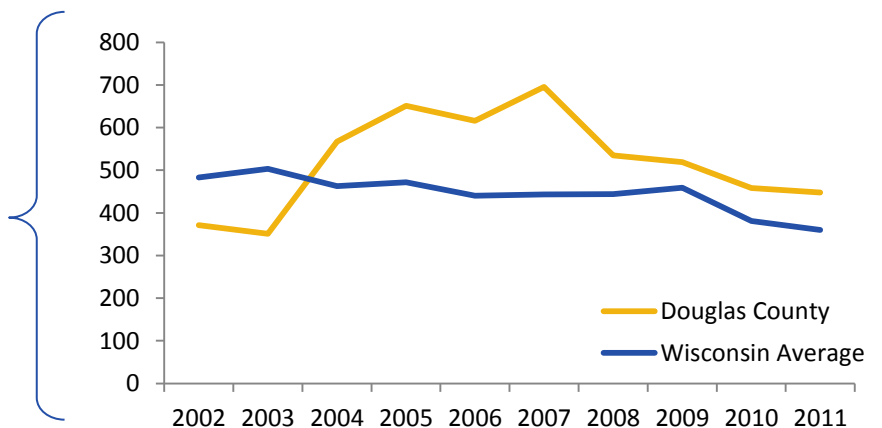
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



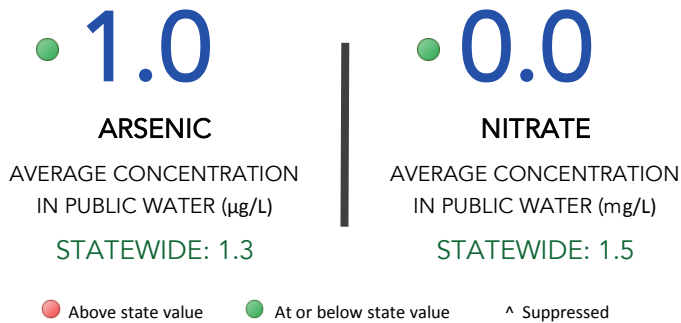
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY DOUGLAS COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

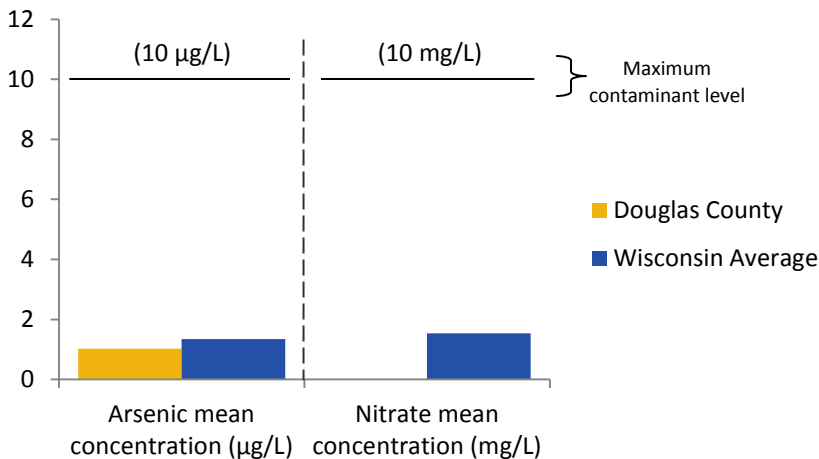
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY DOUGLAS COUNTY

PRIVATE DRINKING WATER

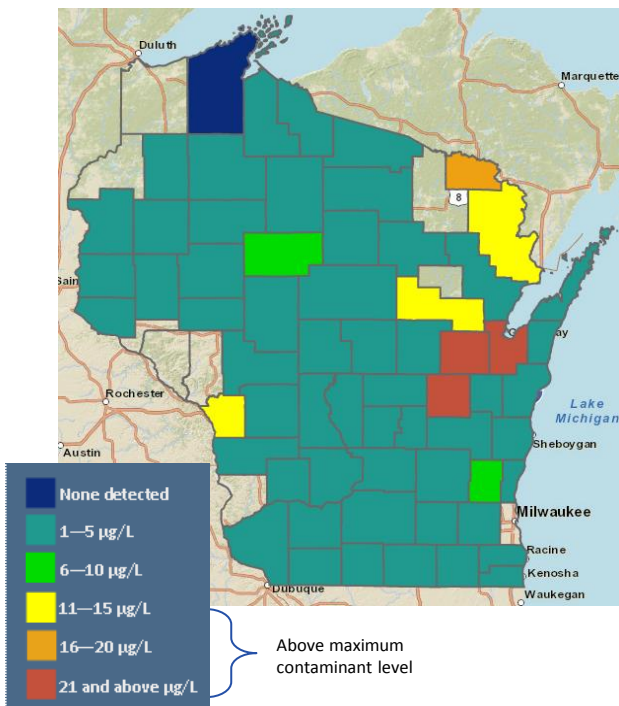
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

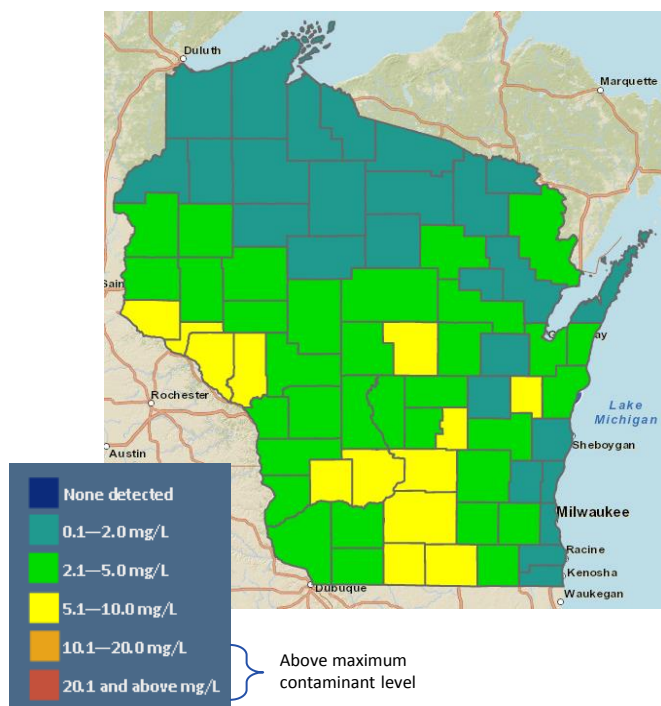
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

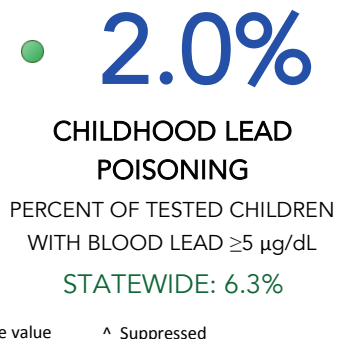
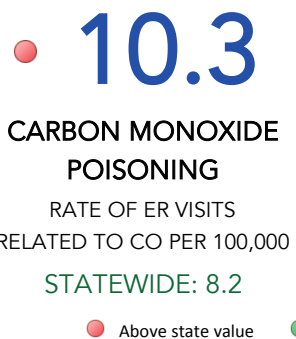


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

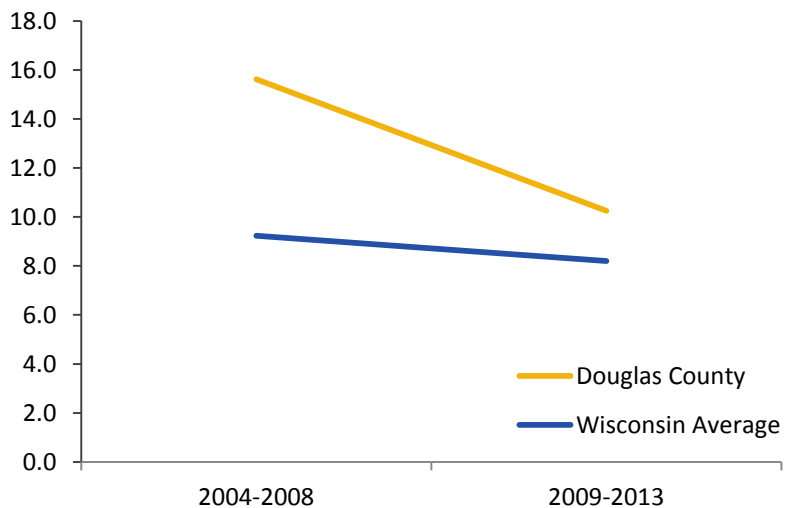


HOME HAZARDS DOUGLAS COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



HOME HAZARDS DOUGLAS COUNTY

CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

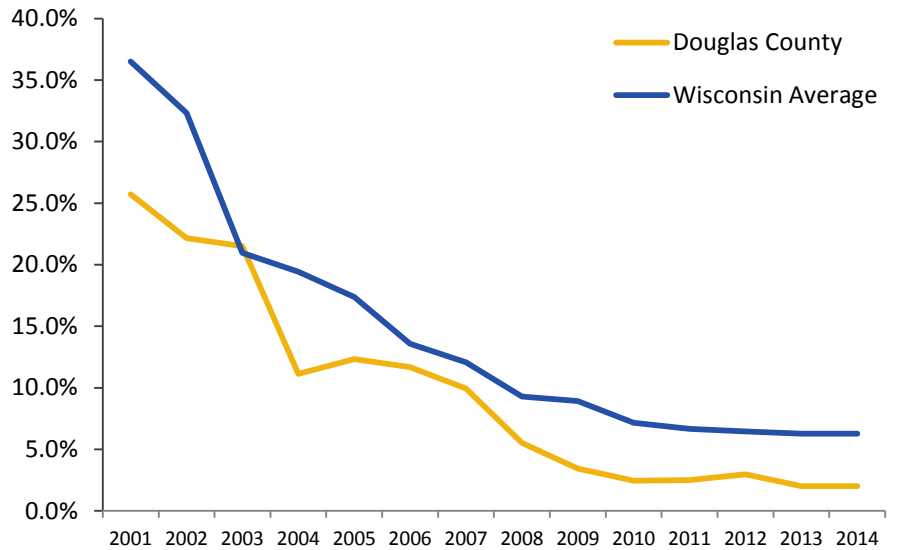
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

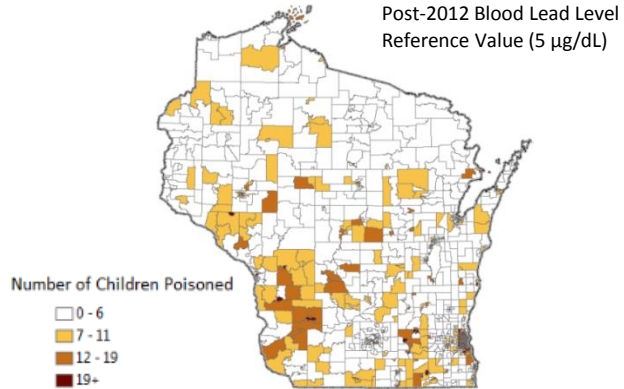
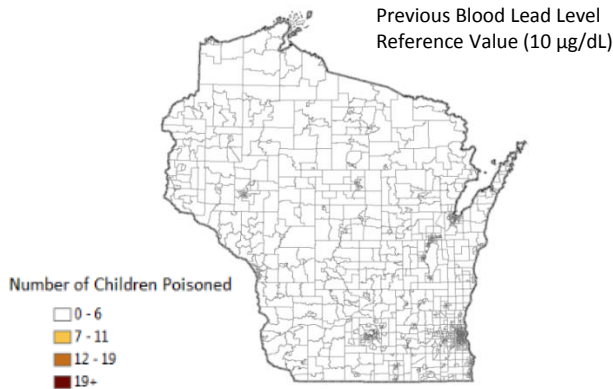
CHILDHOOD LEAD POISONING

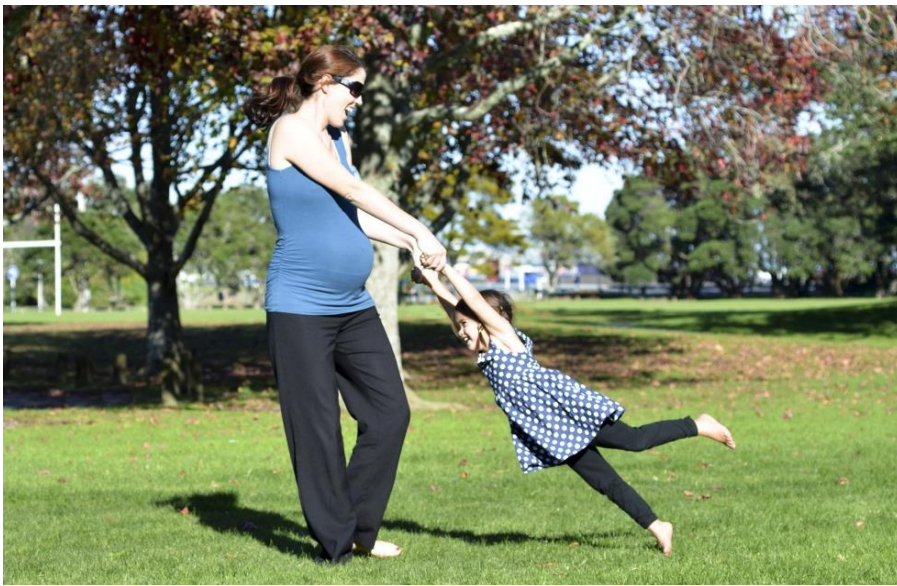
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

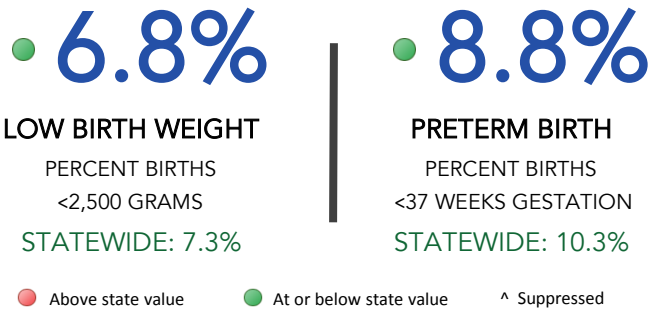
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES DOUGLAS COUNTY

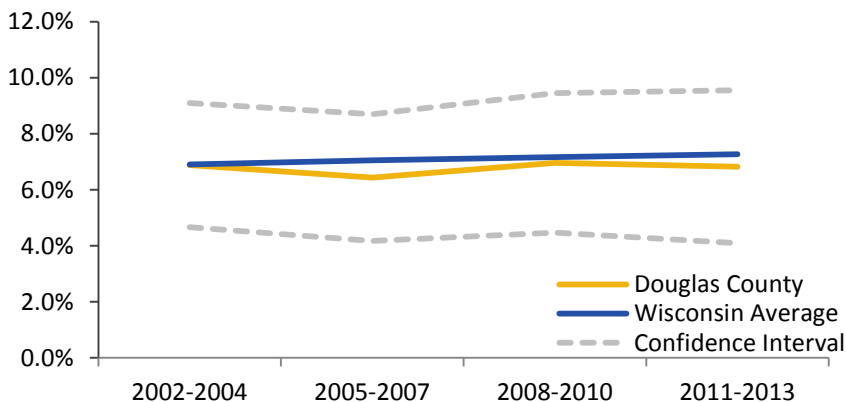
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES DOUGLAS COUNTY

PRETERM BIRTH

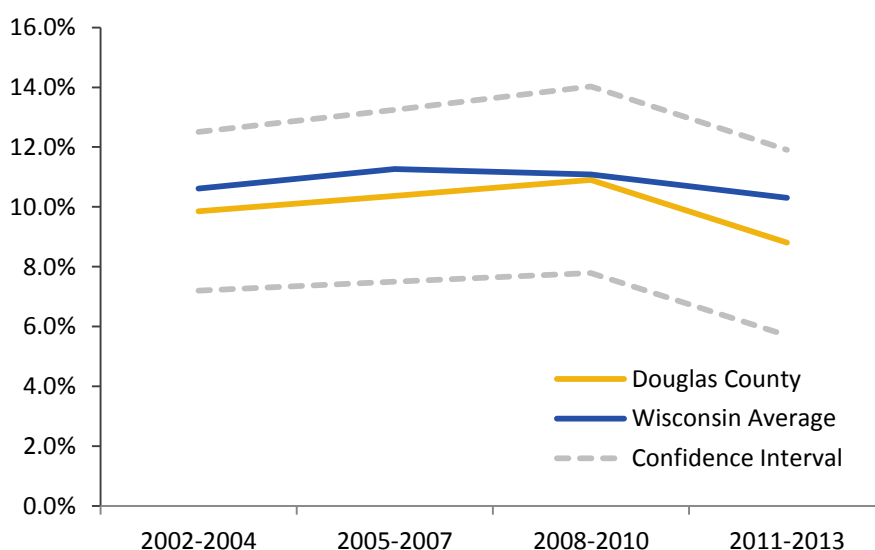
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

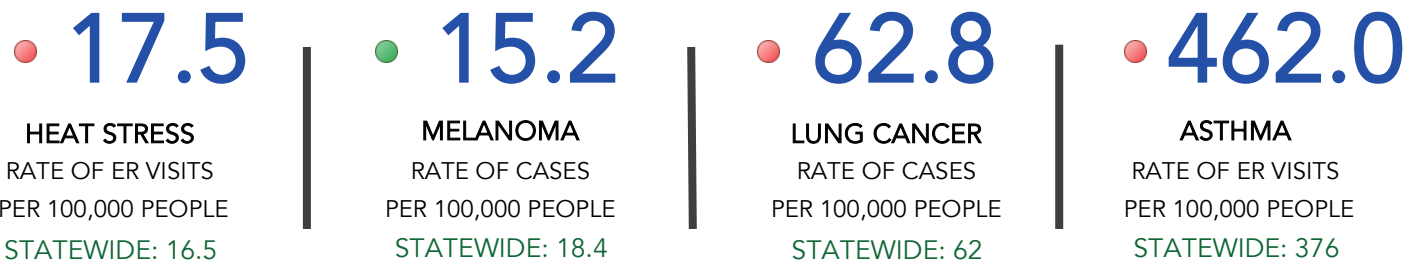
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS DOUGLAS COUNTY

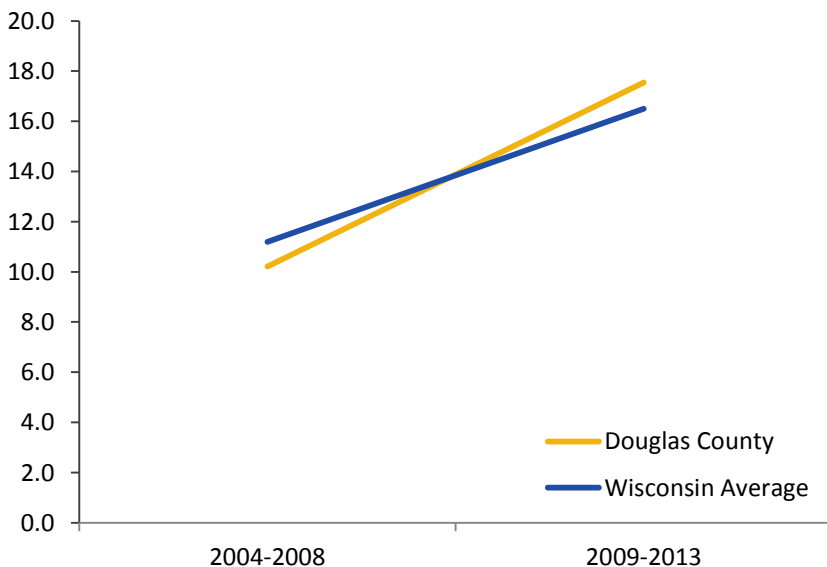
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



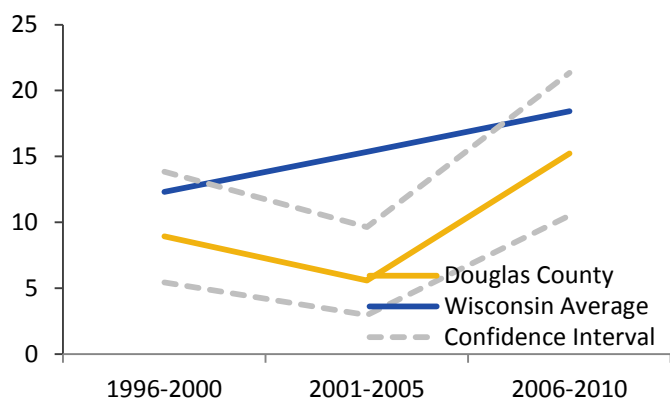


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



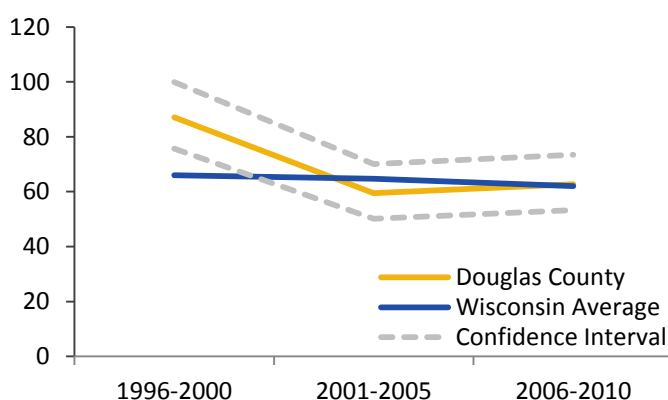
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



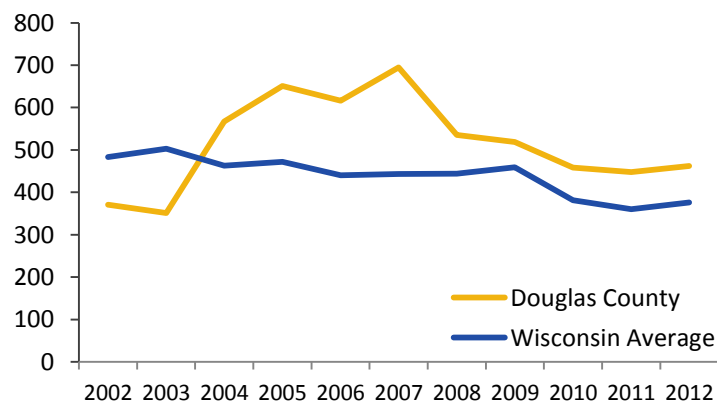
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

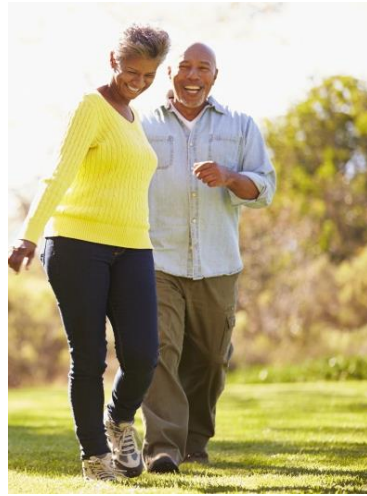
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



DUNN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DUNN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.3 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 2.8 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 5.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.6% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 18.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 13.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 54.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 212.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY DUNN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

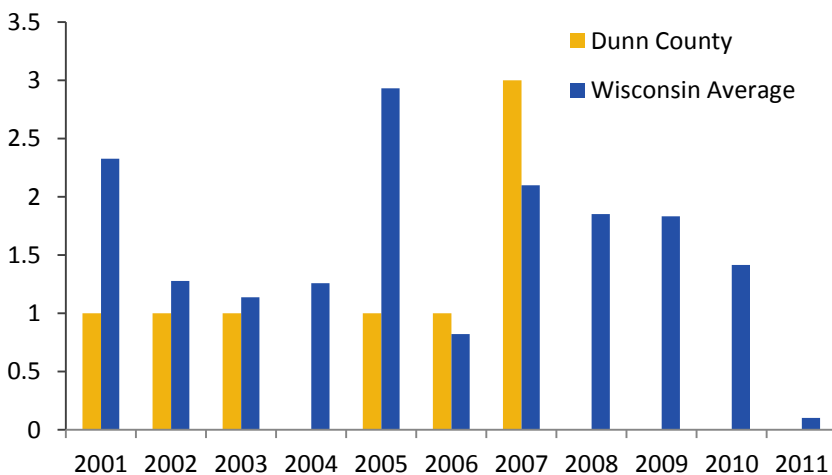
● 9.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

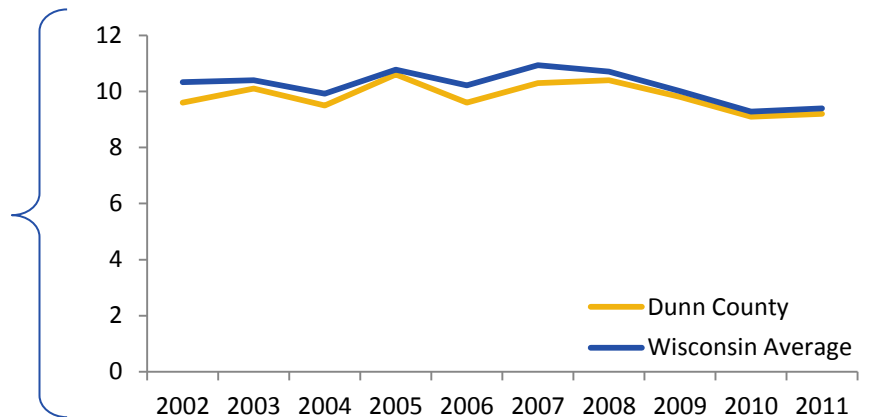
DUNN COUNTY

PARTICULATE MATTER 2.5

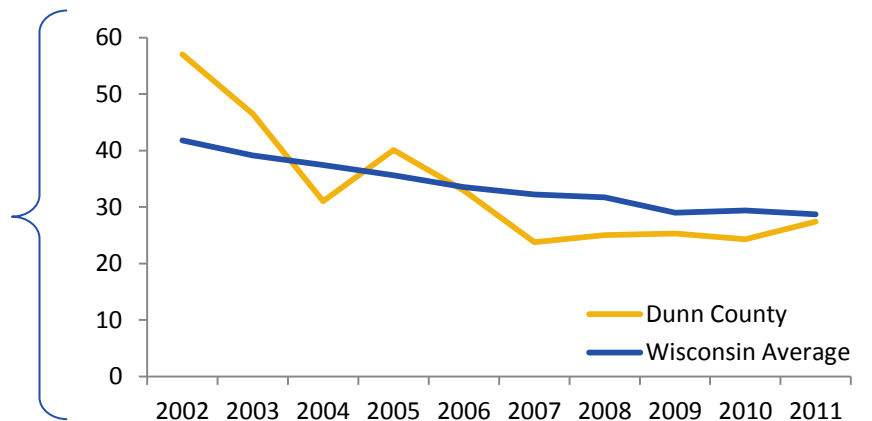
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

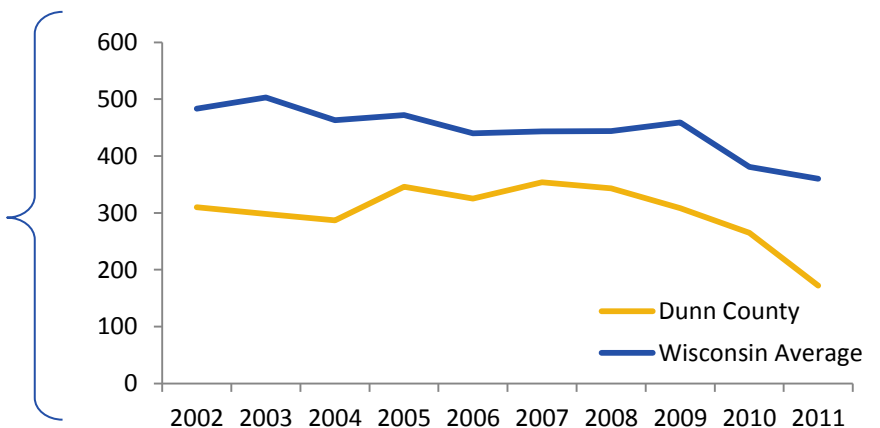
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



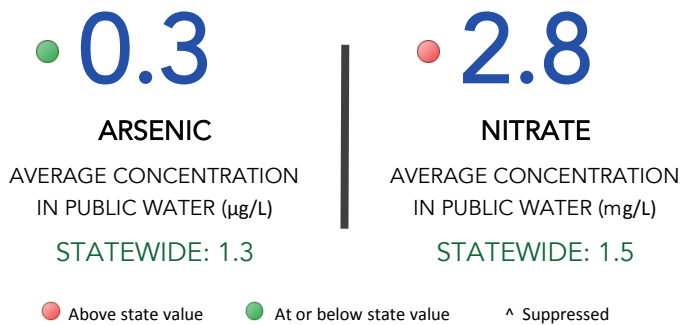
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY DUNN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

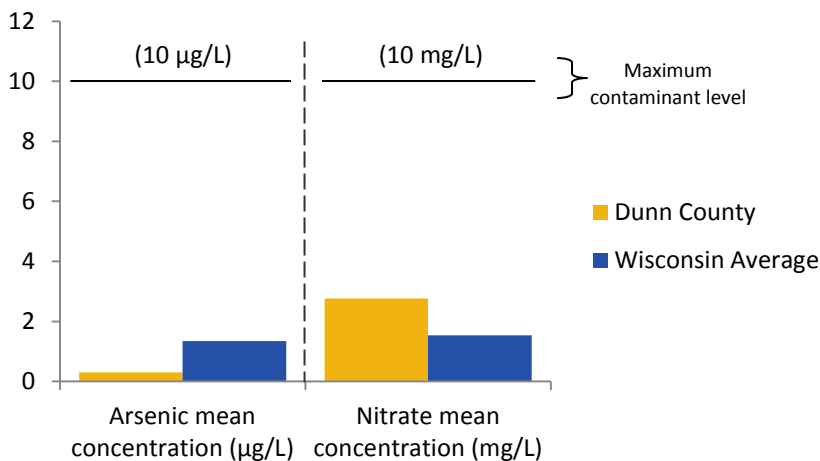
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY DUNN COUNTY

PRIVATE DRINKING WATER

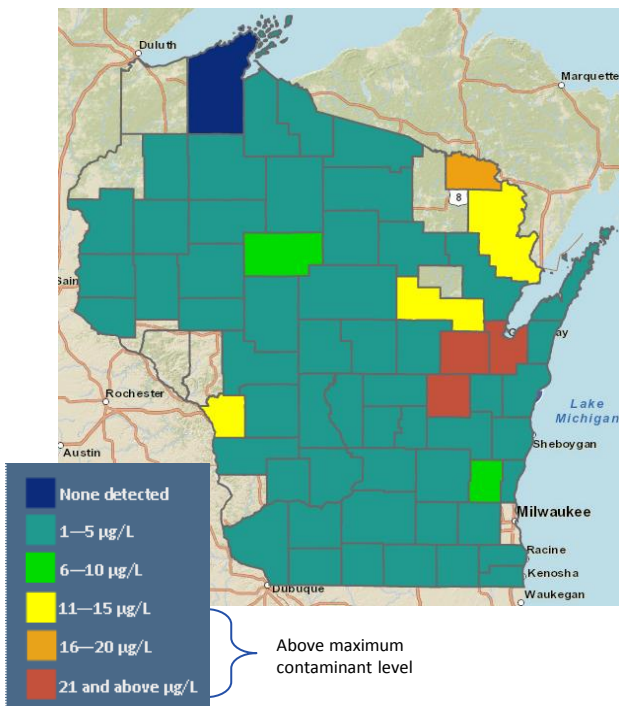
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

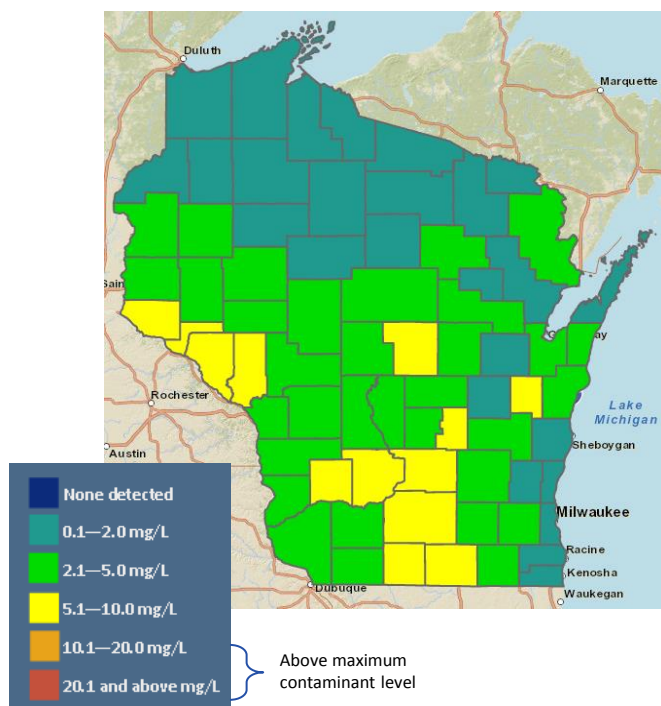
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

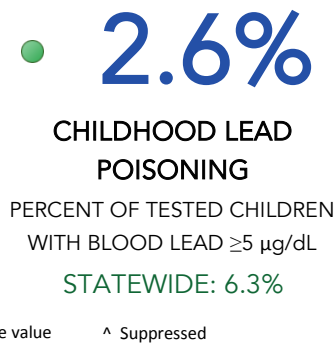
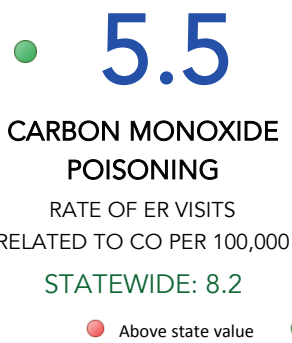


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



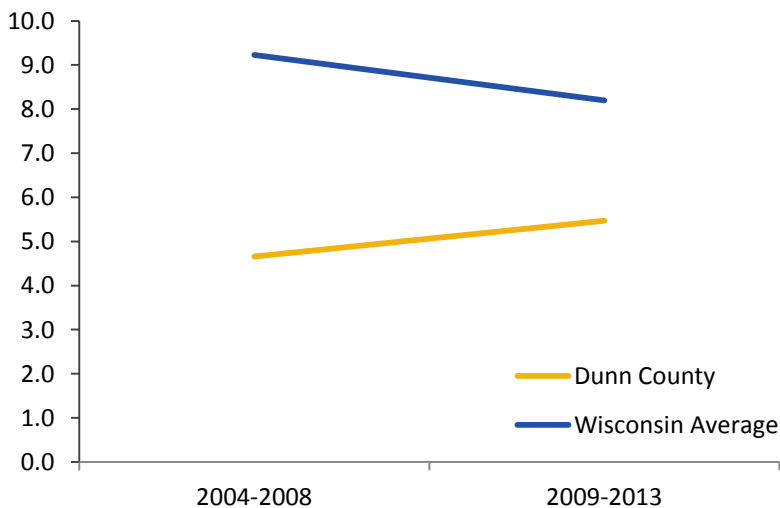
HOME HAZARDS DUNN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht 



HOME HAZARDS DUNN COUNTY

CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

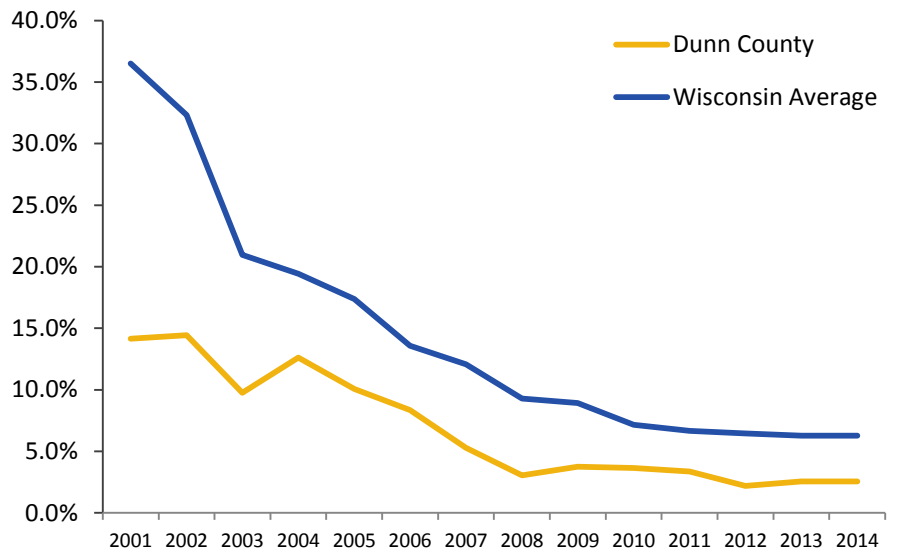
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

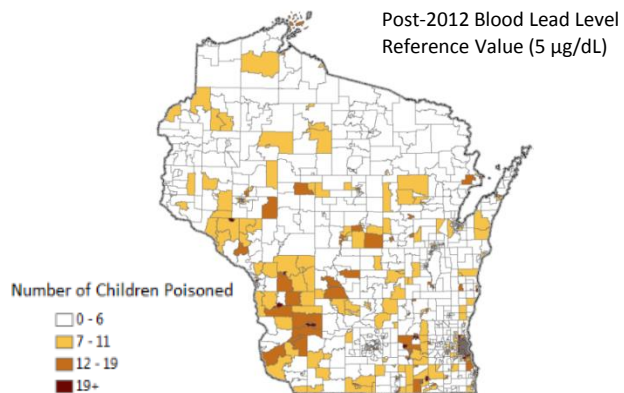
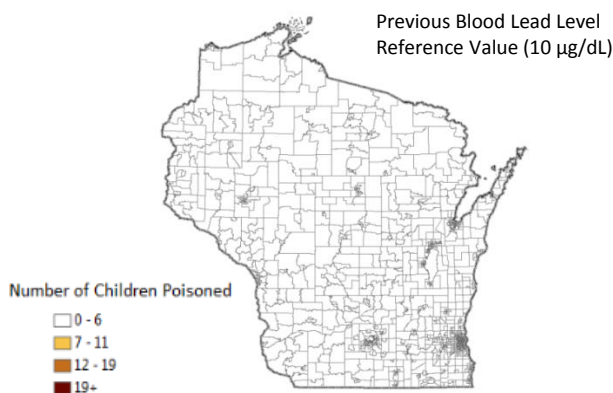
CHILDHOOD LEAD POISONING

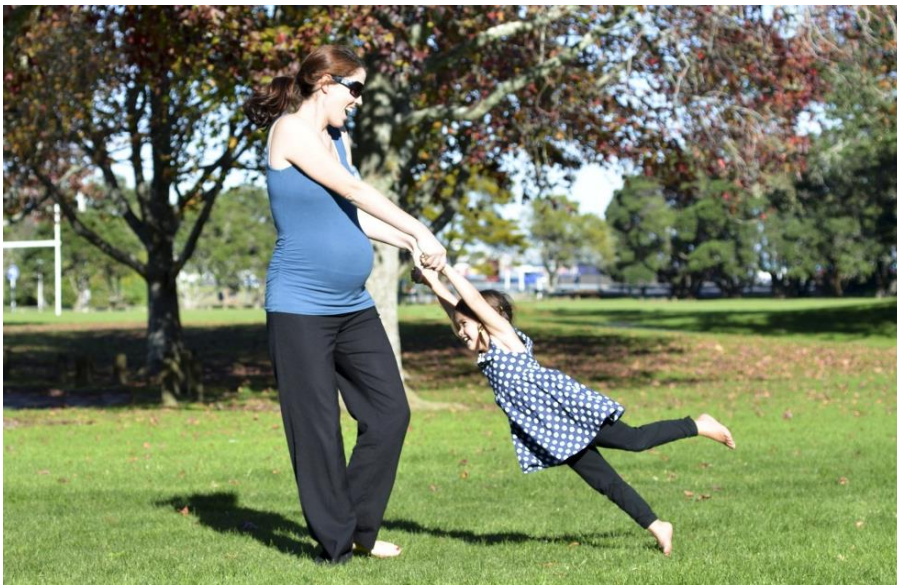
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

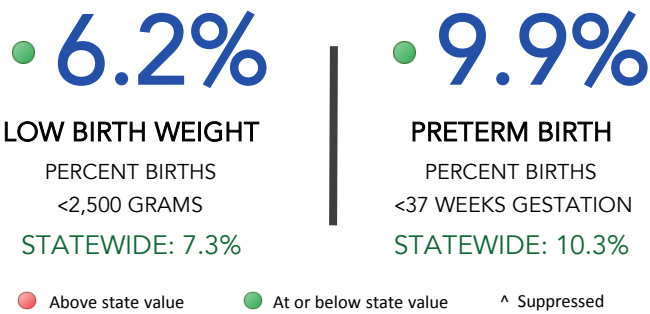
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES DUNN COUNTY

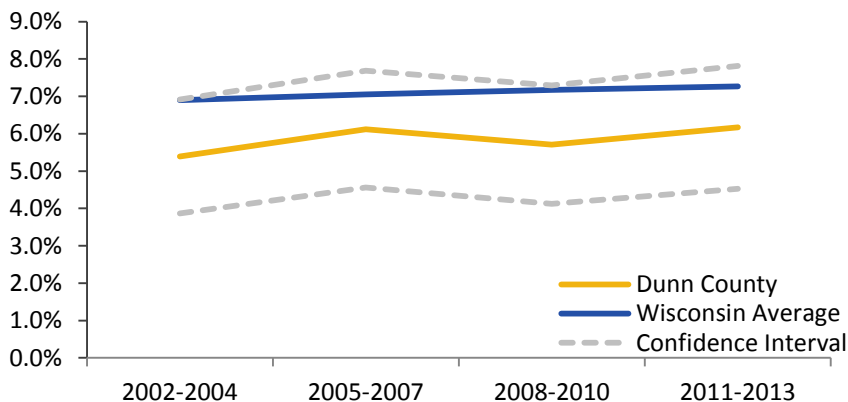
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES DUNN COUNTY

PRETERM BIRTH

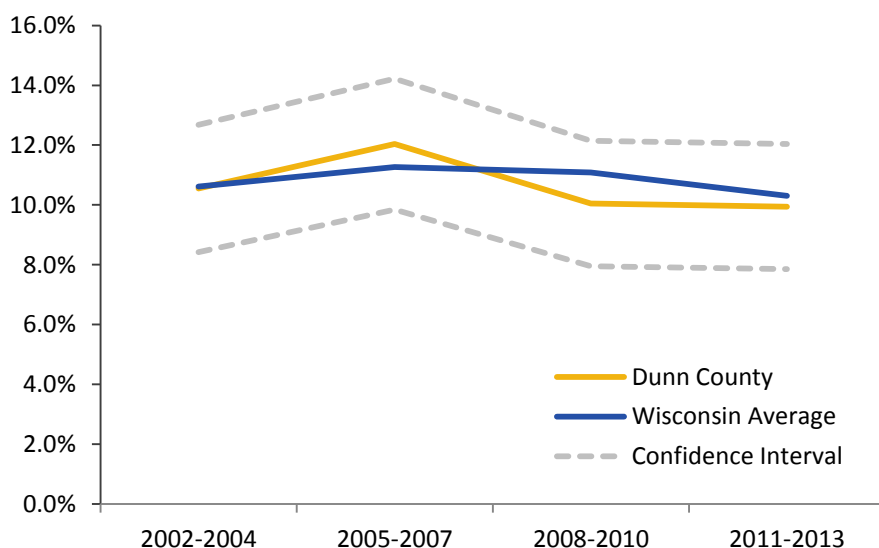
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

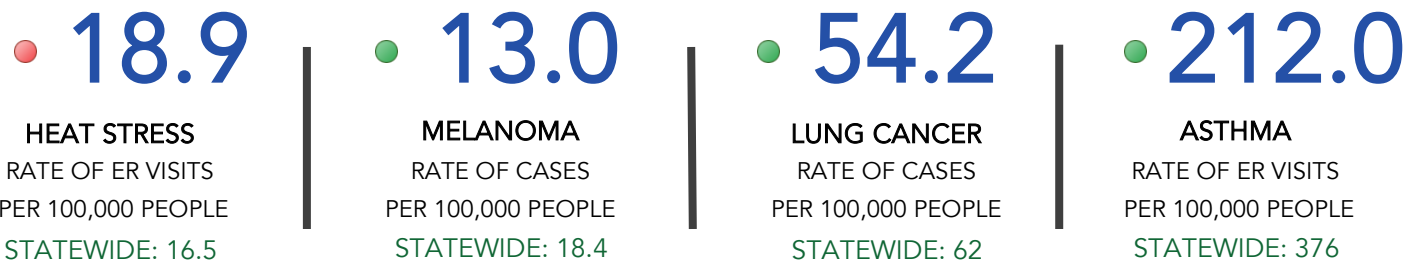
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS DUNN COUNTY

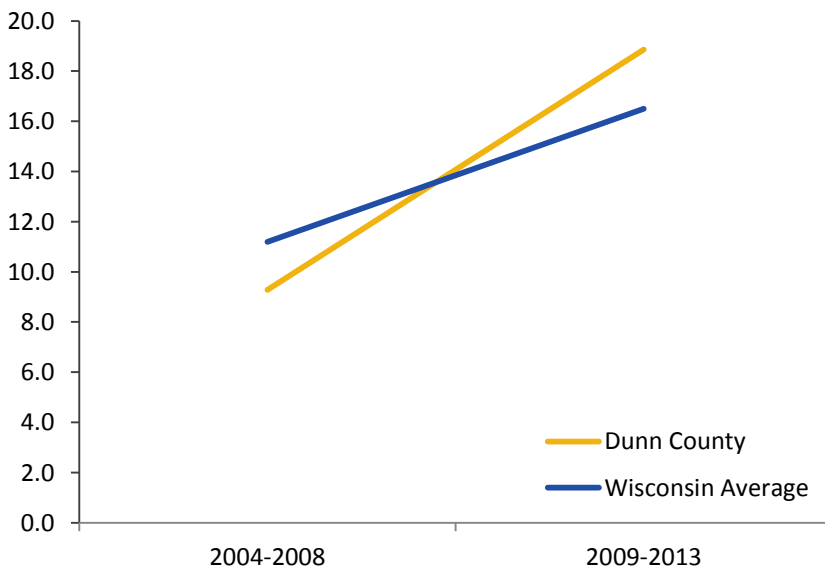
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



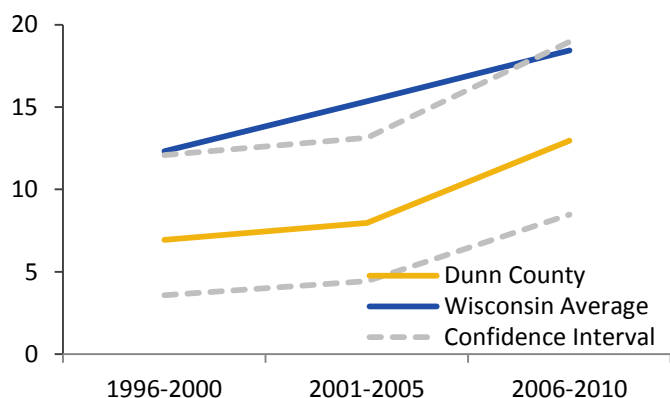


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



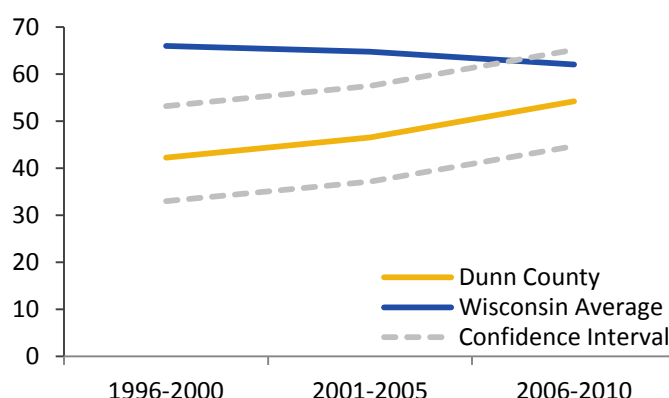
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



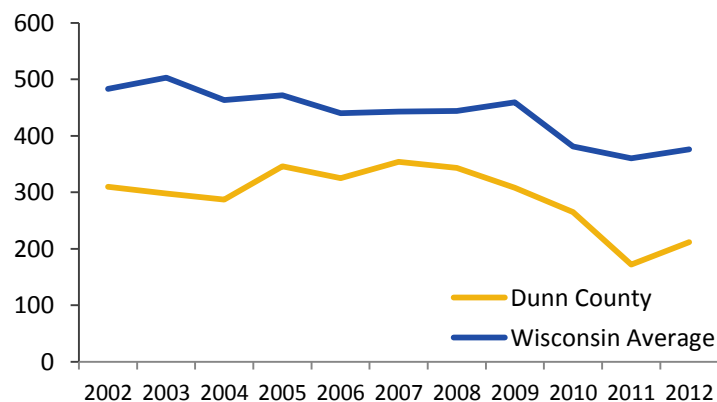
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



EAU CLAIRE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

EAU CLAIRE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.5 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 6.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.9% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.0% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 7.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 9.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 16.7 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 52.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 230.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY EAU CLAIRE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

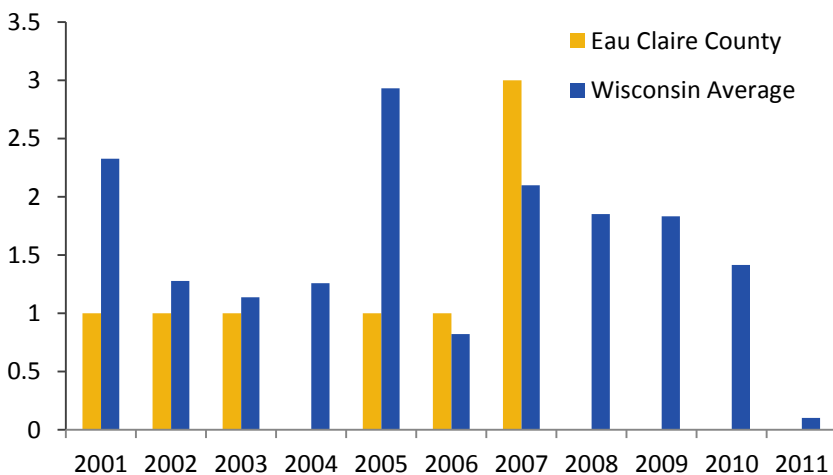
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **9.5**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

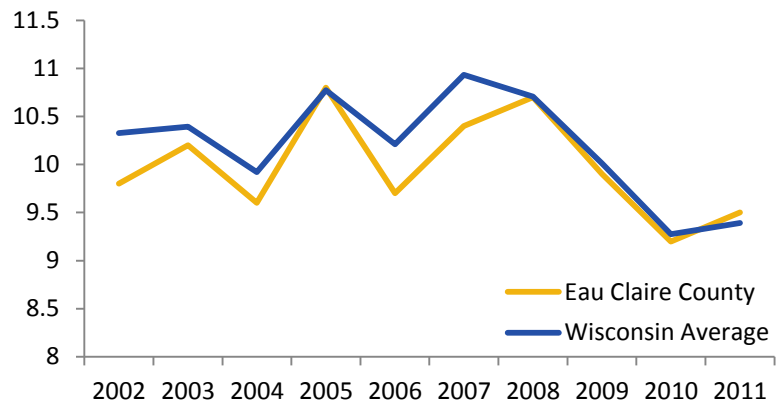
EAU CLAIRE COUNTY

PARTICULATE MATTER 2.5

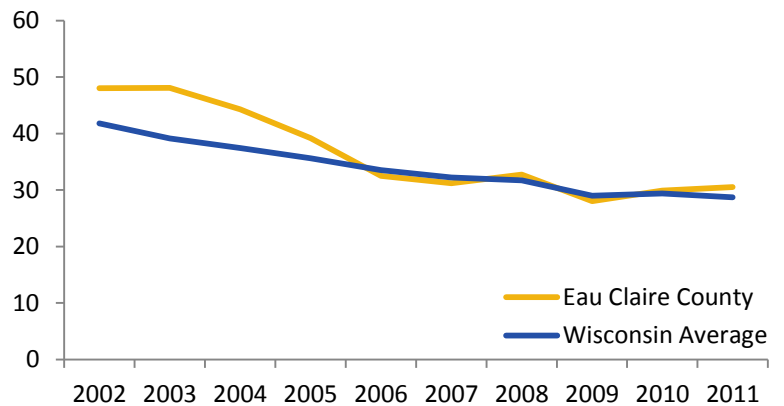
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

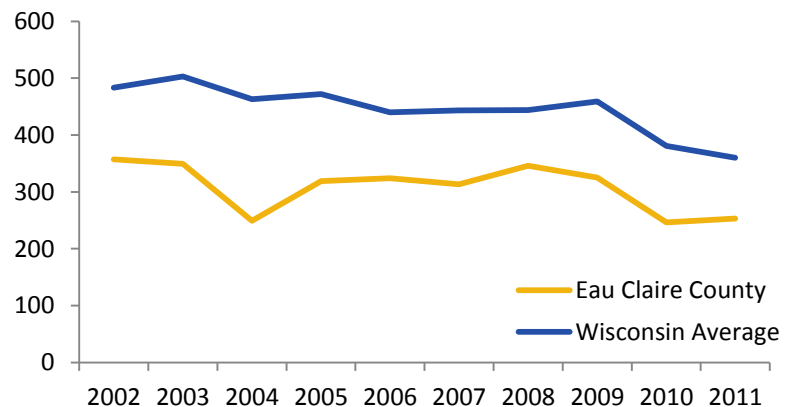
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



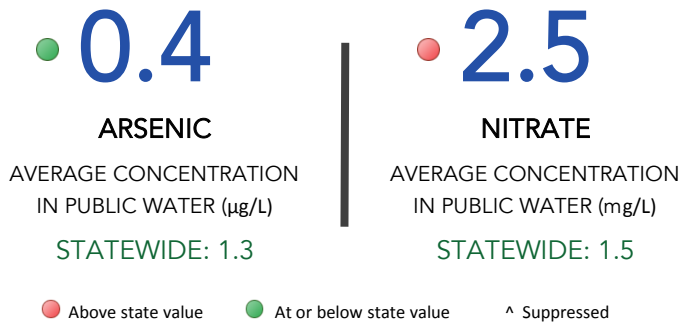
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY EAU CLAIRE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

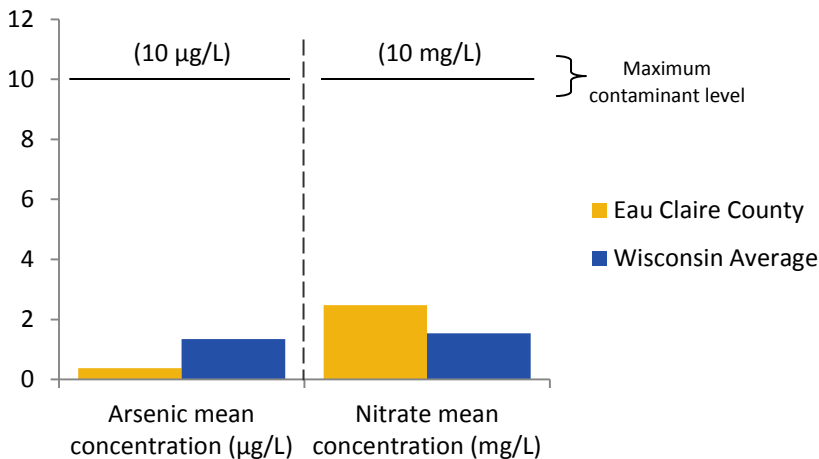
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY EAU CLAIRE COUNTY

PRIVATE DRINKING WATER

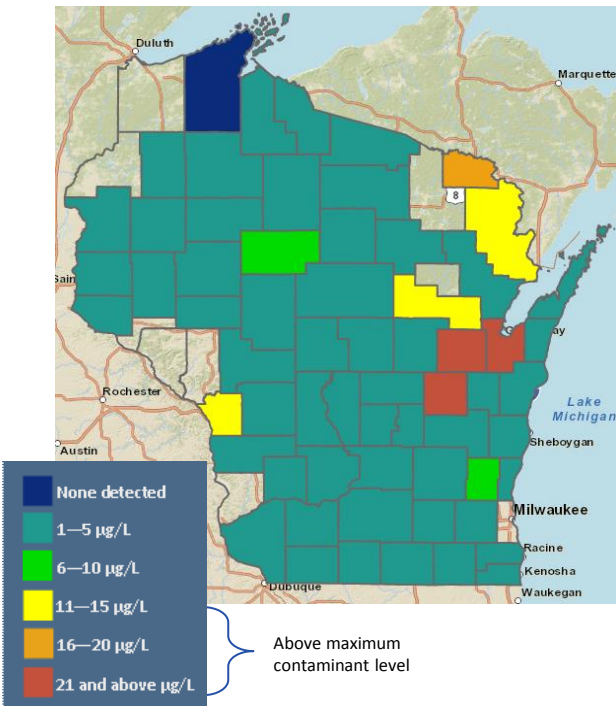
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

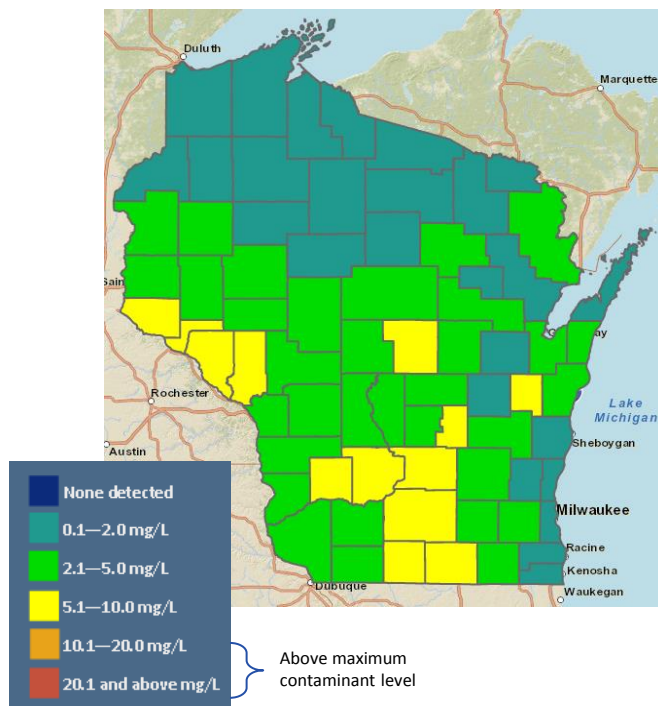
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS EAU CLAIRE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.4**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **1.9%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

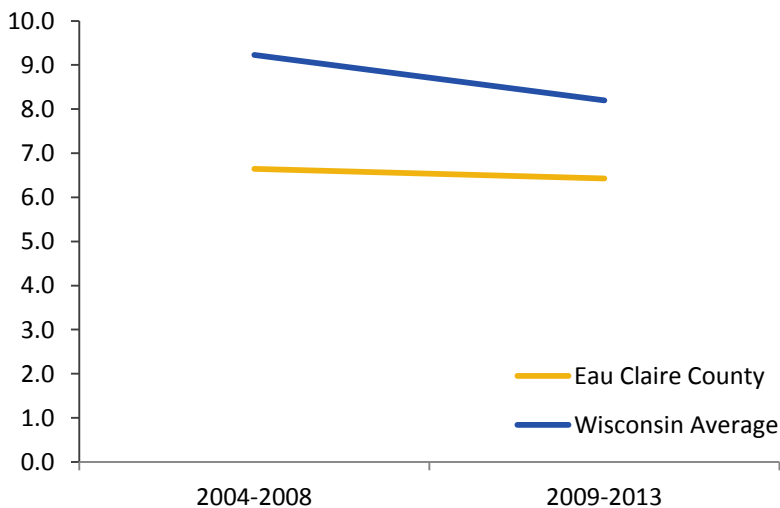
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

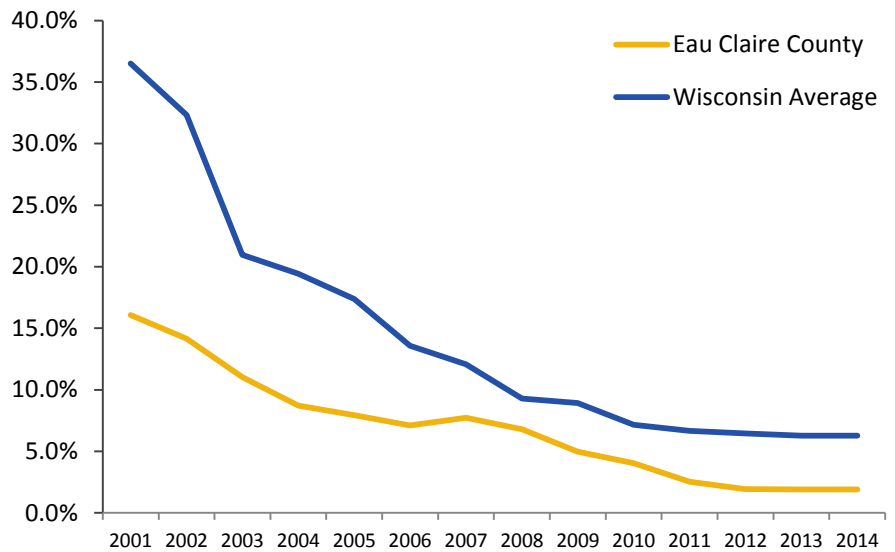
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

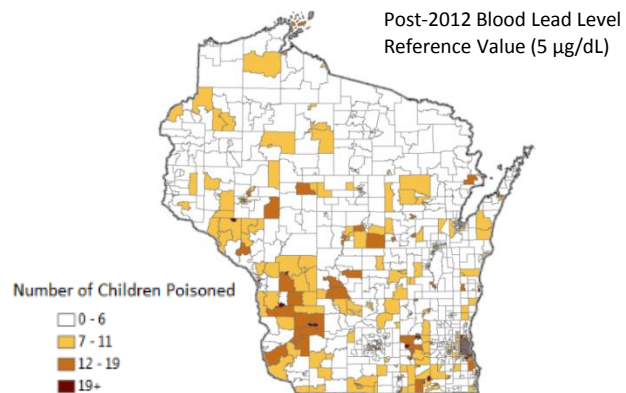
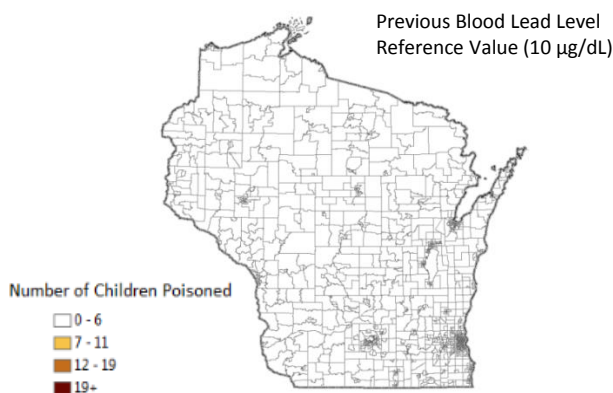
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES EAU CLAIRE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.0%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **7.9%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

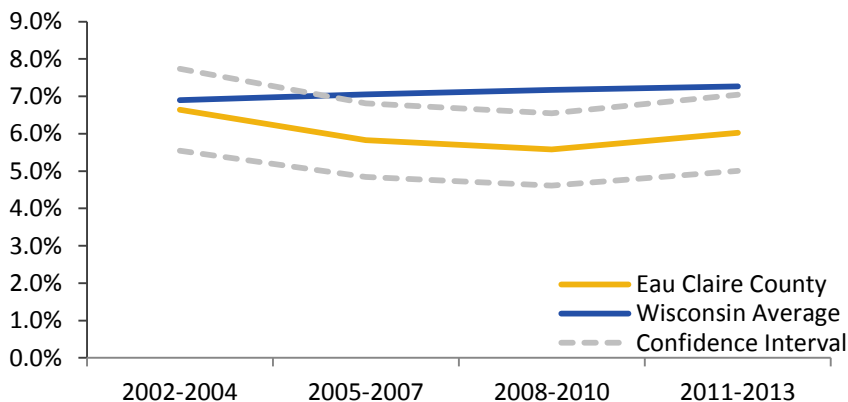
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

EAU CLAIRE COUNTY

PRETERM BIRTH

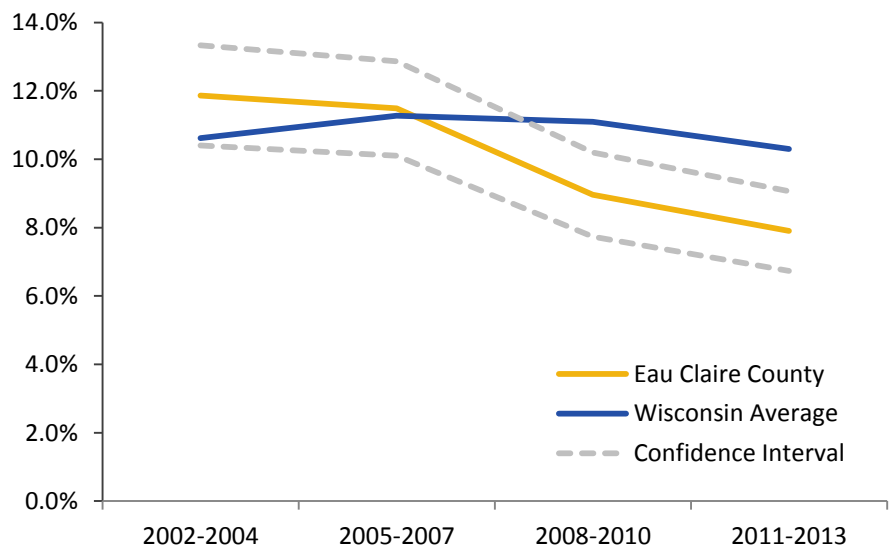
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS EAU CLAIRE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **9.6**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

● **16.7**
MELANOMA
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 18.4

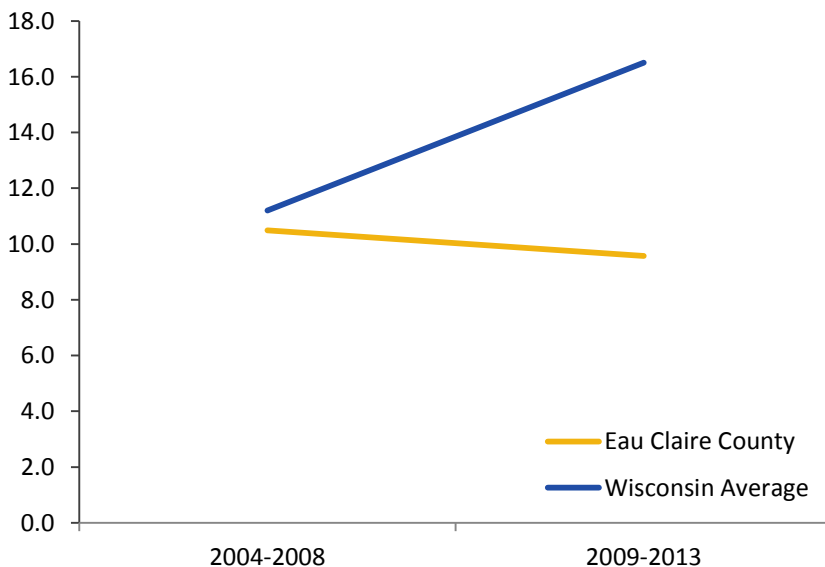
● **52.2**
LUNG CANCER
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 62

● **230.0**
ASTHMA
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



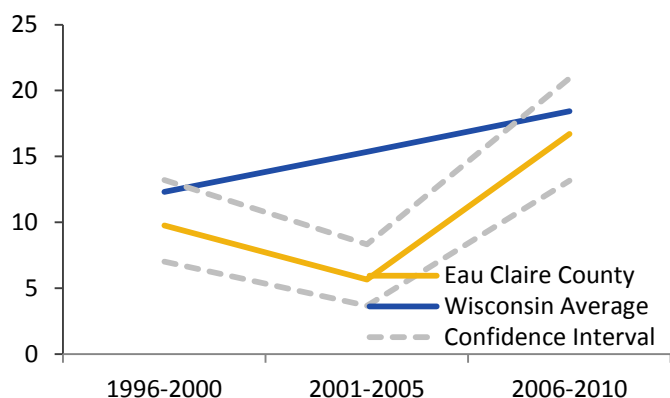


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



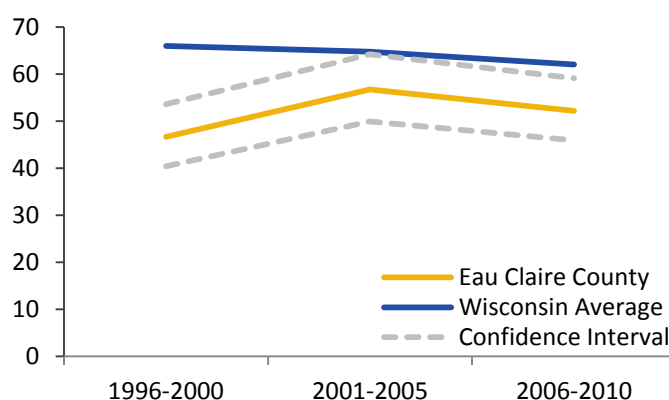
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



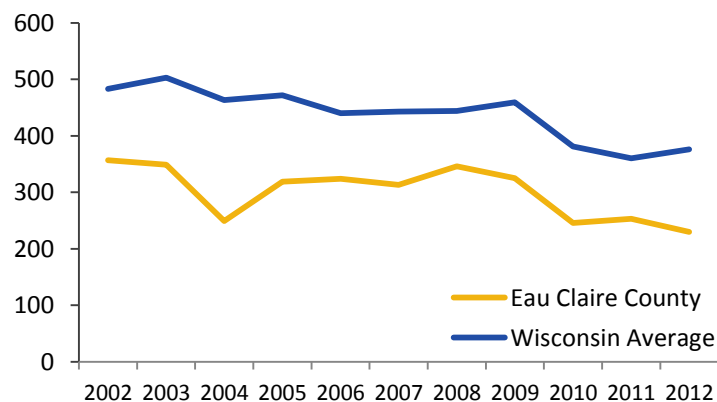
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

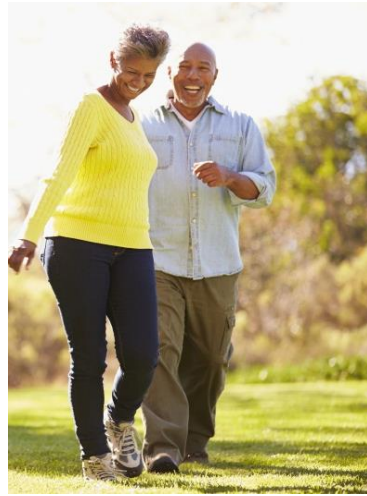
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
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dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



FLORENCE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

FLORENCE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.7 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.5 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 0.0 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.0% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

^ | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

^ | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 0.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

^ | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 66.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 0.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY FLORENCE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

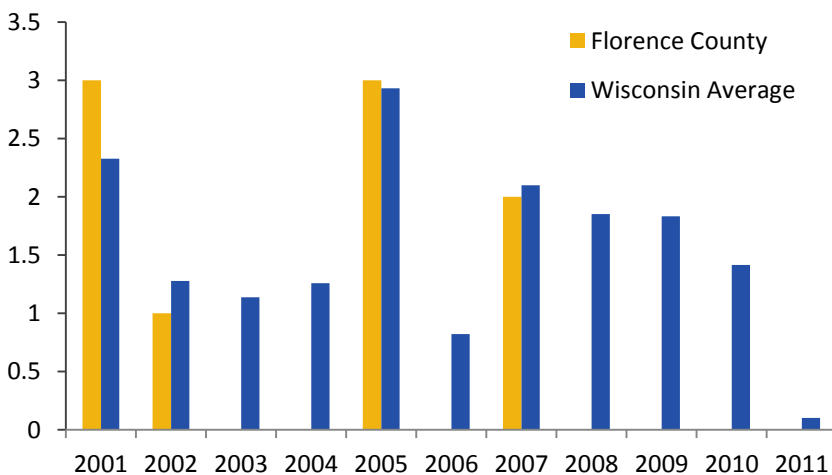
● 7.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m3)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

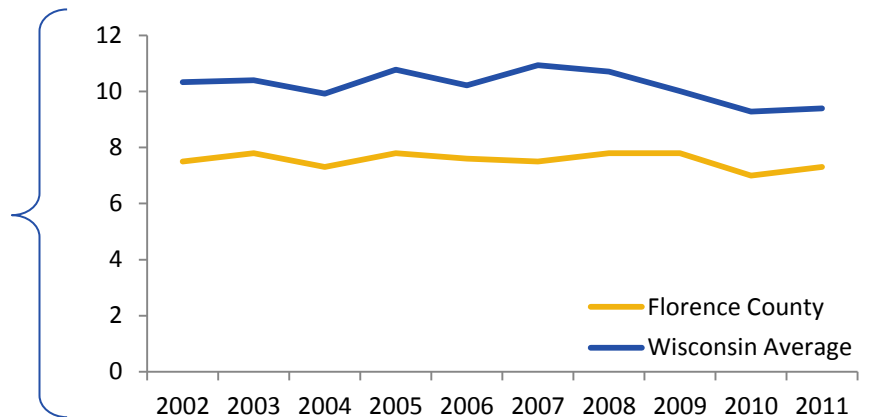
FLORENCE COUNTY

PARTICULATE MATTER 2.5

Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

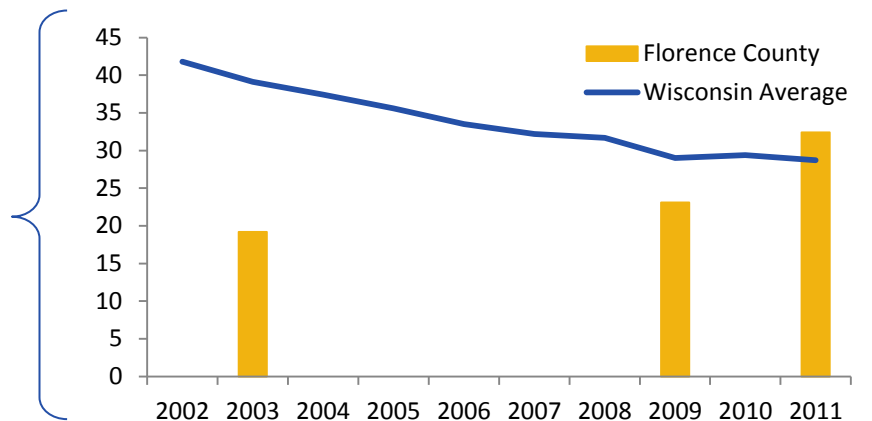
For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

**PARTICULATE MATTER 2.5
ANNUAL AVERAGE**
(µg/m³)

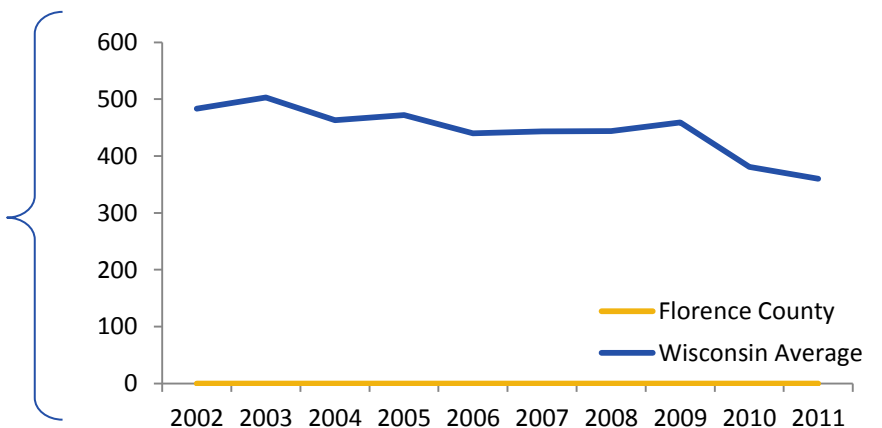


**HEART ATTACK
HOSPITALIZATIONS**
Rate per 10,000 people

2002, 2004-2008, and 2010 are suppressed for Florence County.



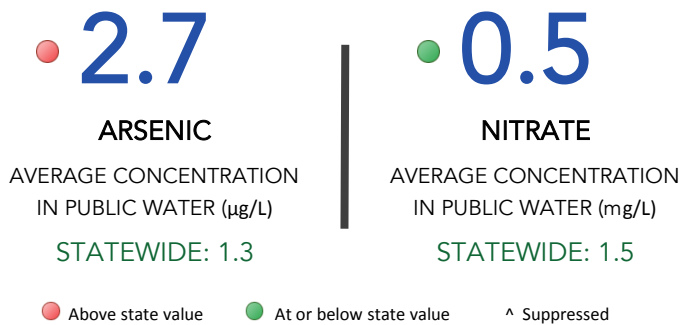
**ASTHMA
EMERGENCY ROOM VISITS**
Rate per 100,000 people





WATER QUALITY FLORENCE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

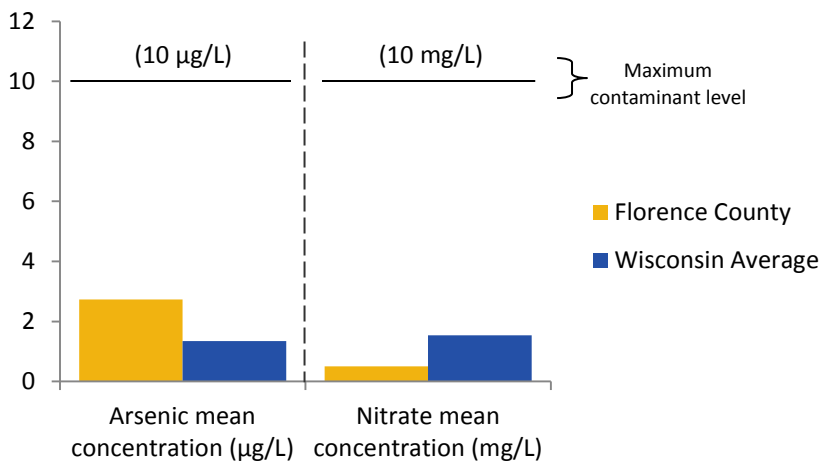
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY FLORENCE COUNTY

PRIVATE DRINKING WATER

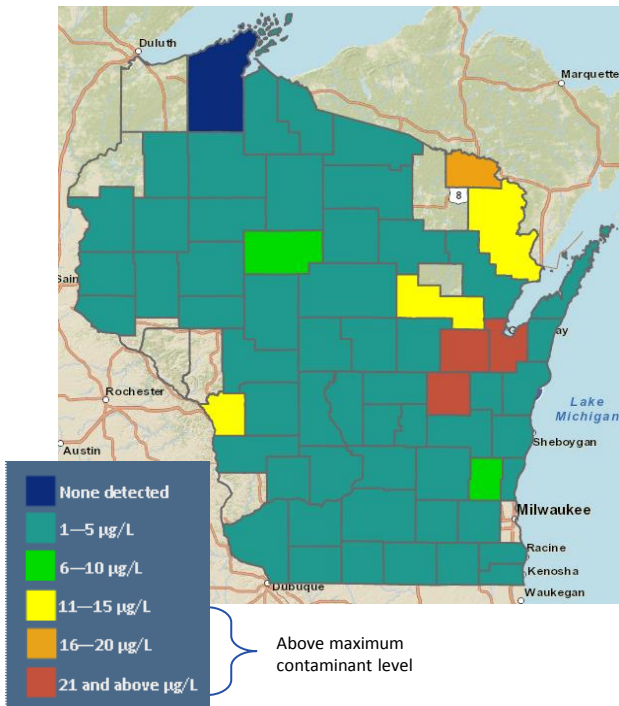
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

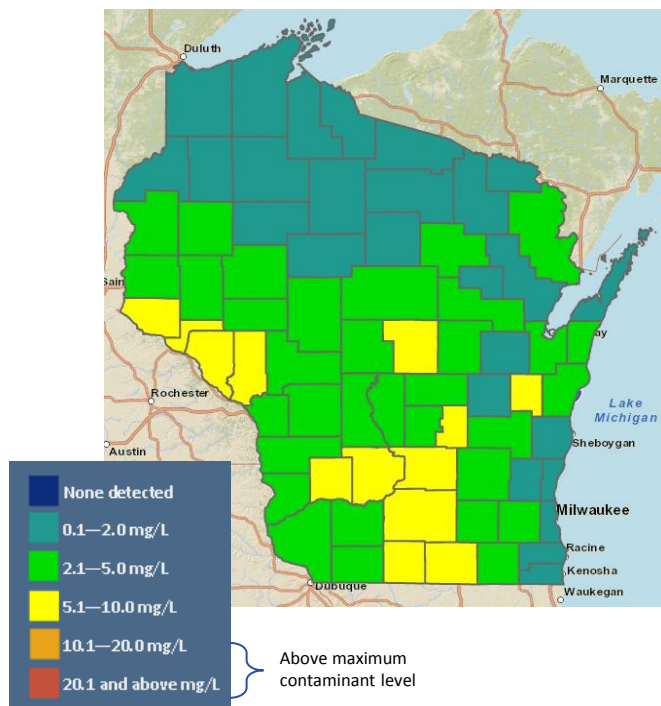
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

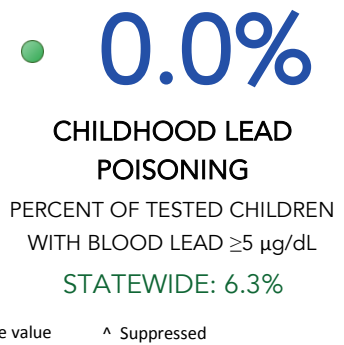
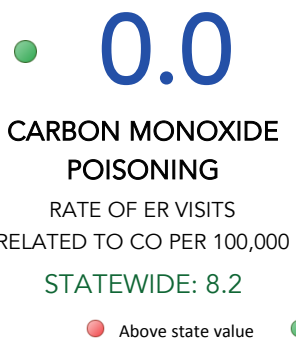


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS FLORENCE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

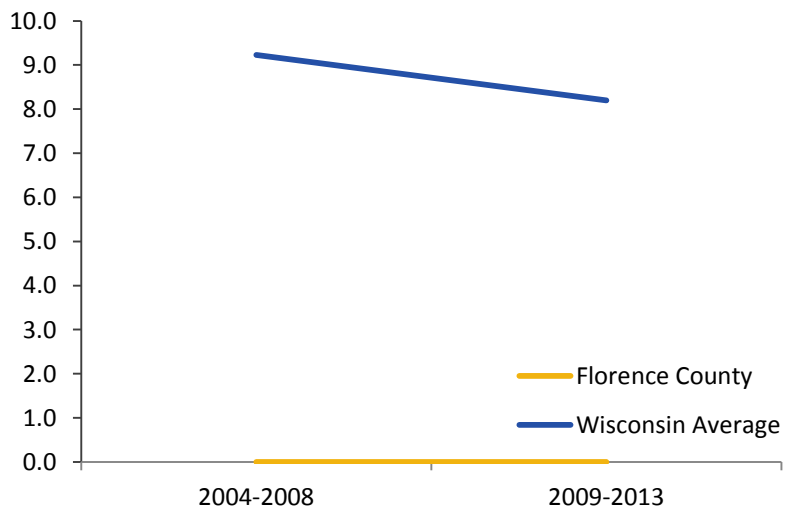


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

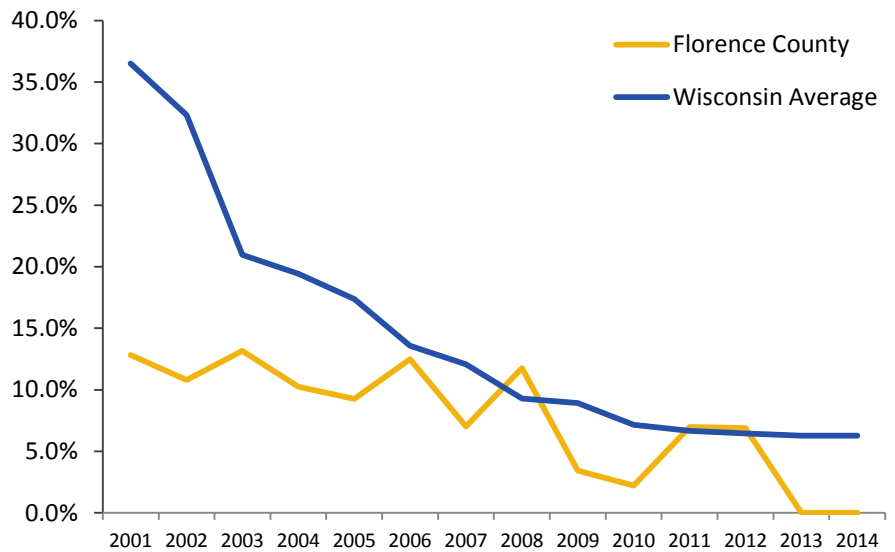
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

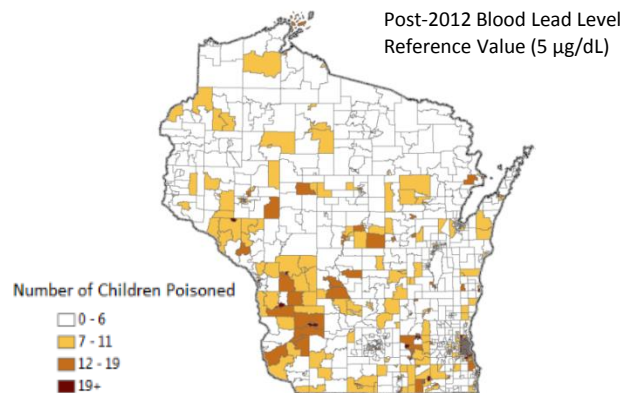
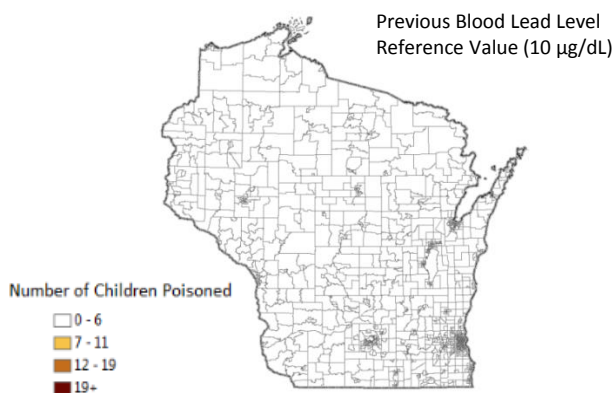
CHILDHOOD LEAD POISONING

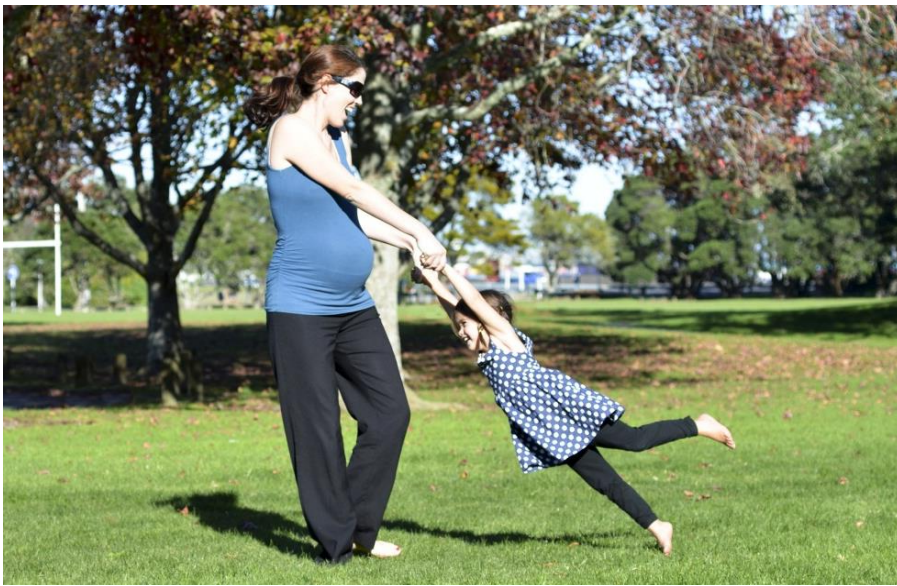
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





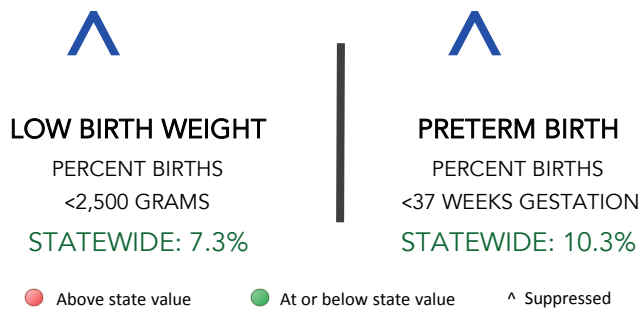
BIRTH OUTCOMES FLORENCE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

LOW BIRTH WEIGHT

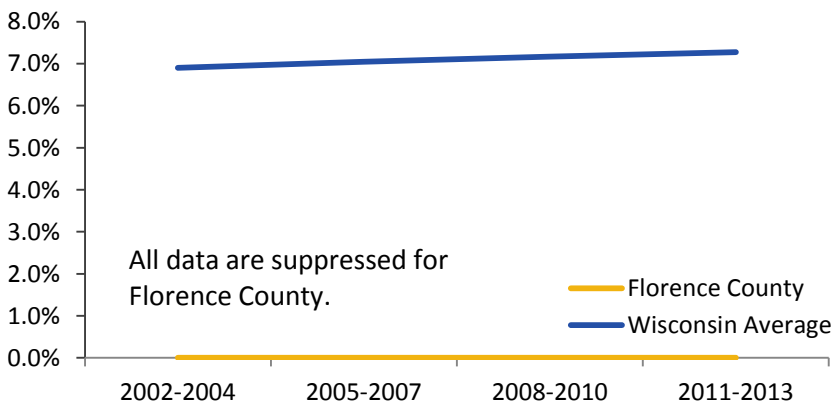
Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.



LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES FLORENCE COUNTY

PRETERM BIRTH

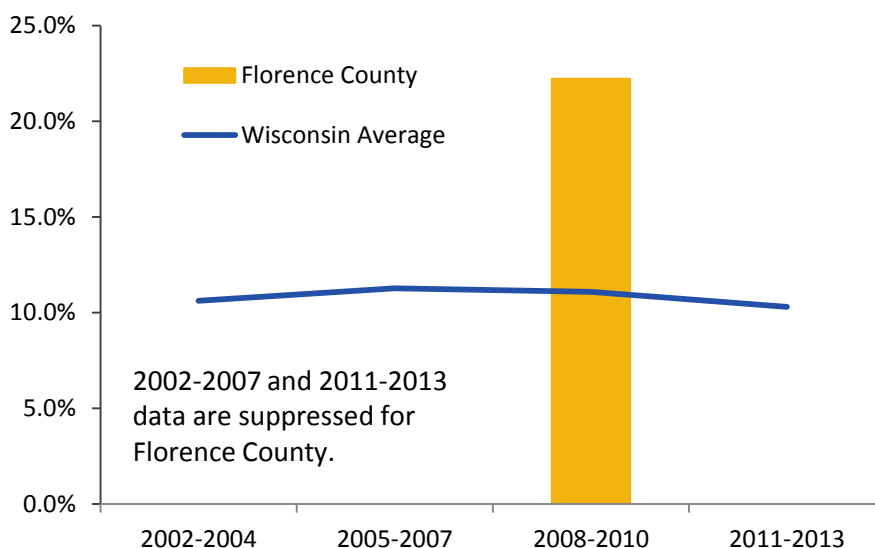
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

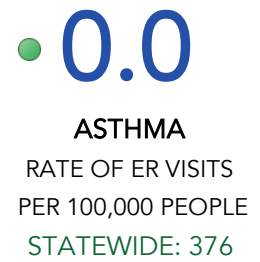
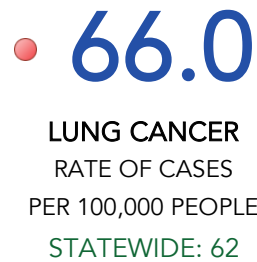
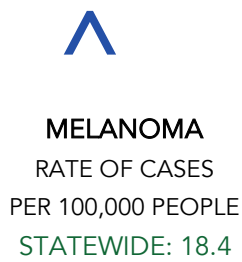
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS FLORENCE COUNTY

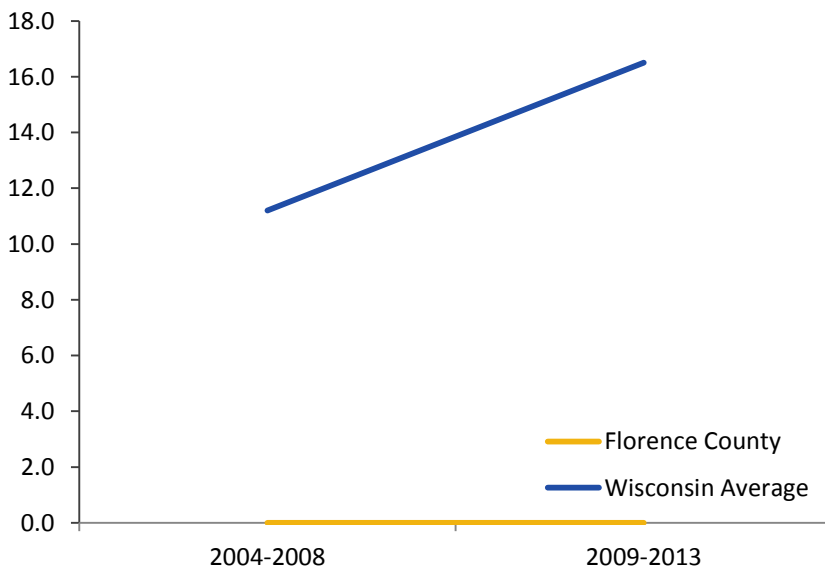
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



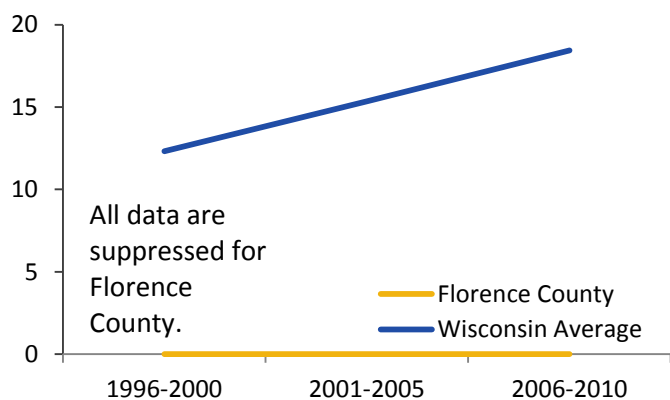


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



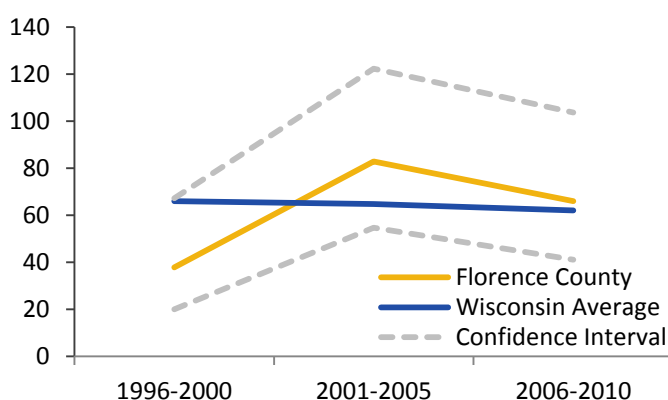
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



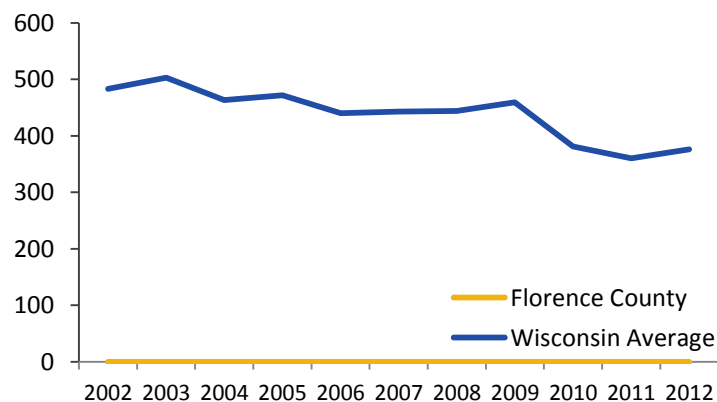
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



FOND DU LAC COUNTY ENVIRONMENTAL HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

FOND DU LAC COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.0 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 3.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.9% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 19.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 28.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 62.9 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 195.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY FOND DU LAC COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● **2.0**

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● **0.0**

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

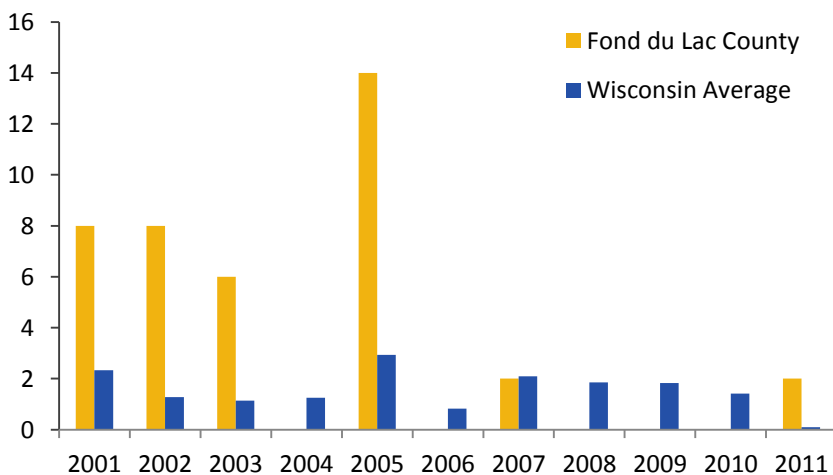
● **10.2**

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

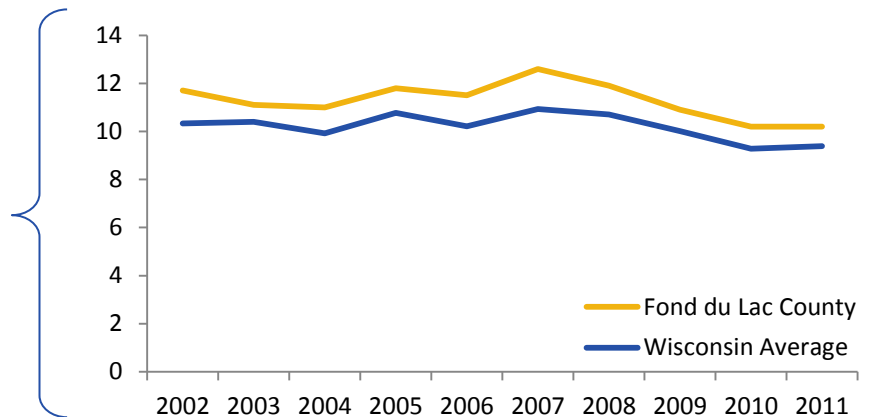
FOND DU LAC COUNTY

PARTICULATE MATTER 2.5

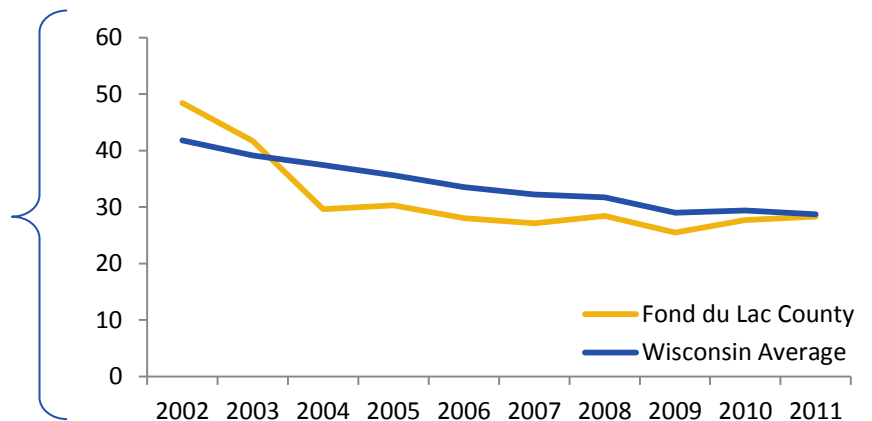
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

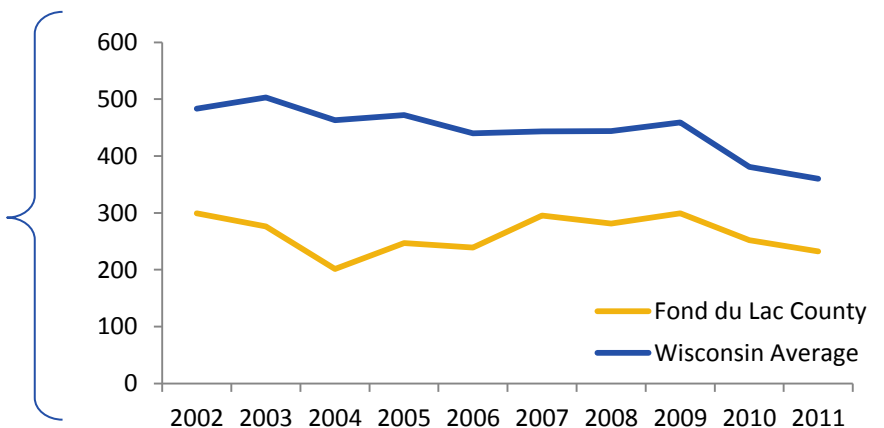
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY FOND DU LAC COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● **1.0**

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● Above state value ● At or below state value ^ Suppressed

● **0.9**

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

PUBLIC DRINKING WATER

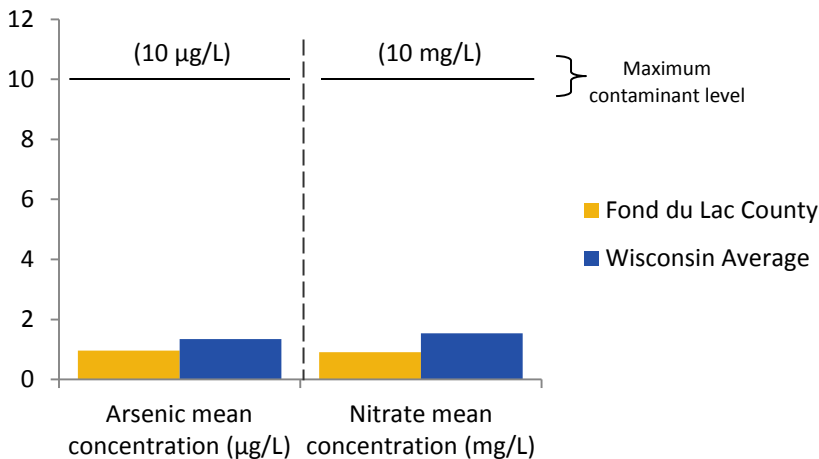
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY FOND DU LAC COUNTY

PRIVATE DRINKING WATER

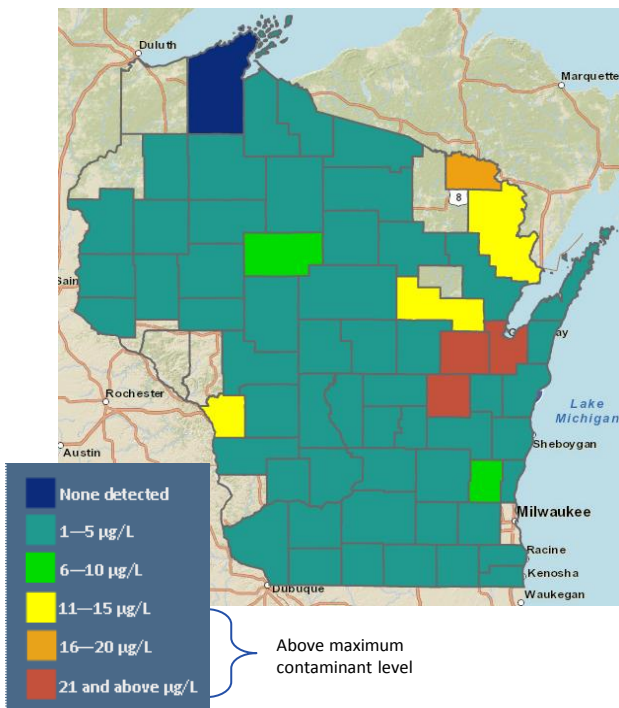
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

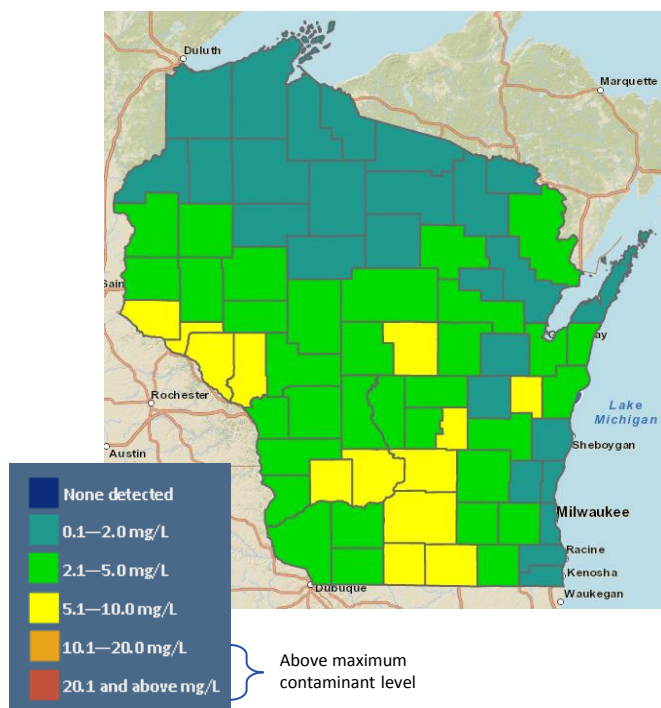
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS FOND DU LAC COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **3.6**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **4.9%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

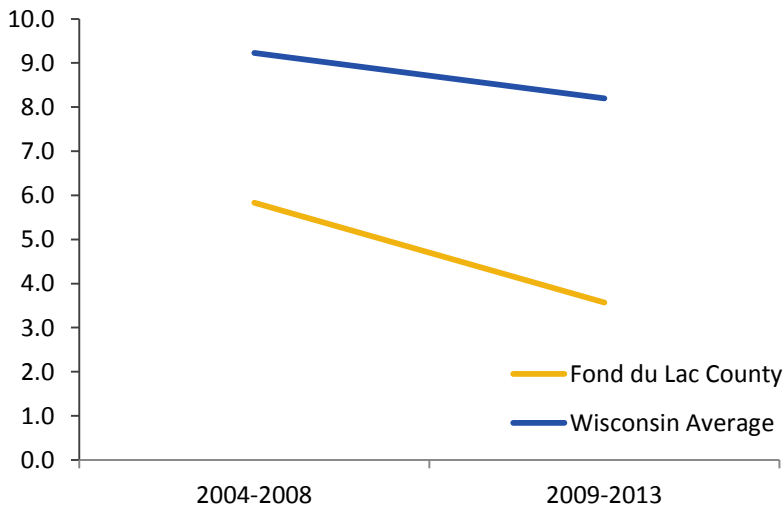
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

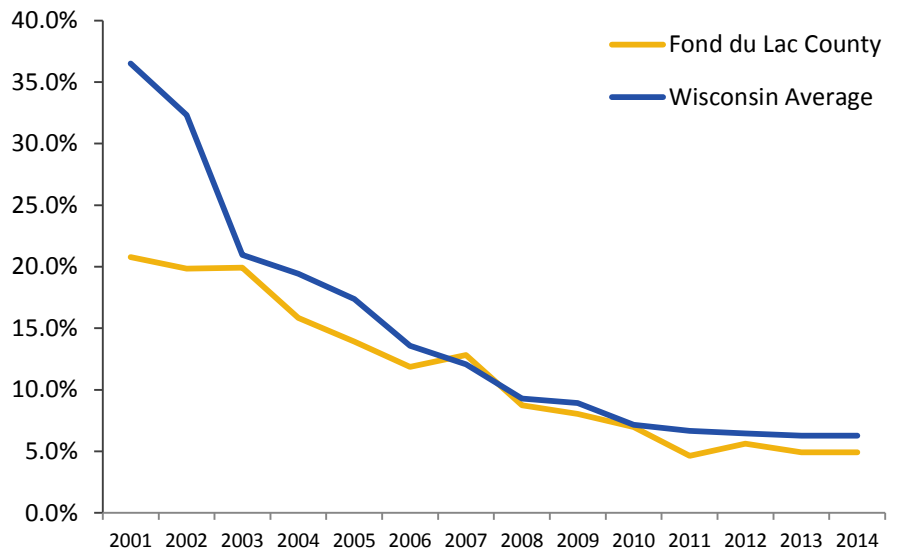
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

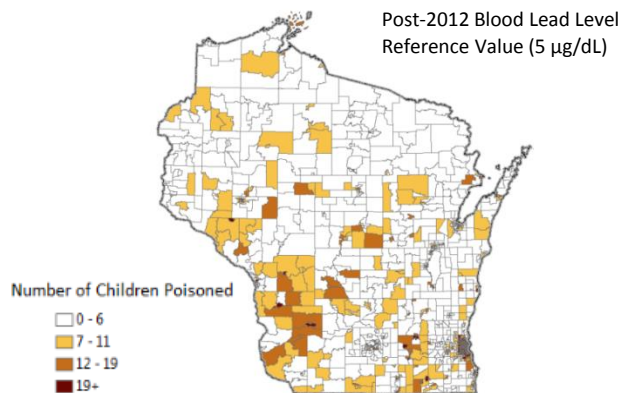
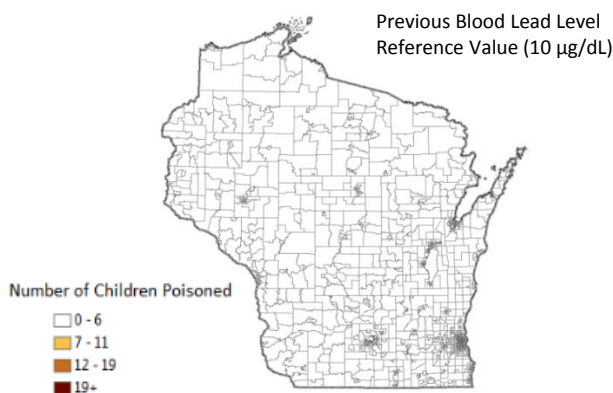
CHILDHOOD LEAD POISONING

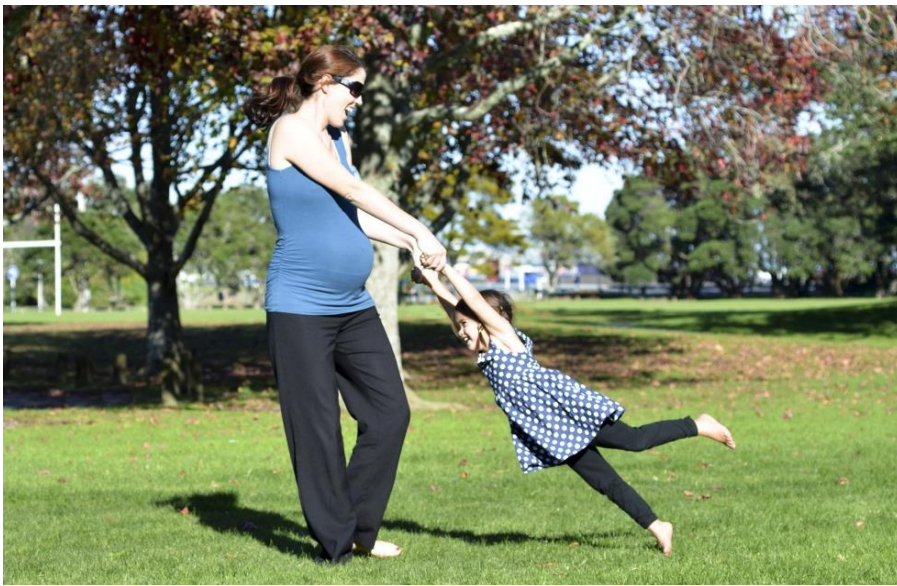
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES FOND DU LAC COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.4%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.9%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

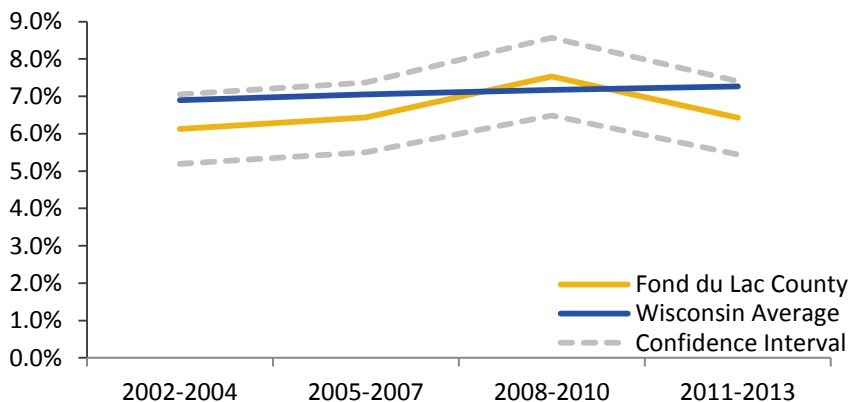
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

FOND DU LAC COUNTY

PRETERM BIRTH

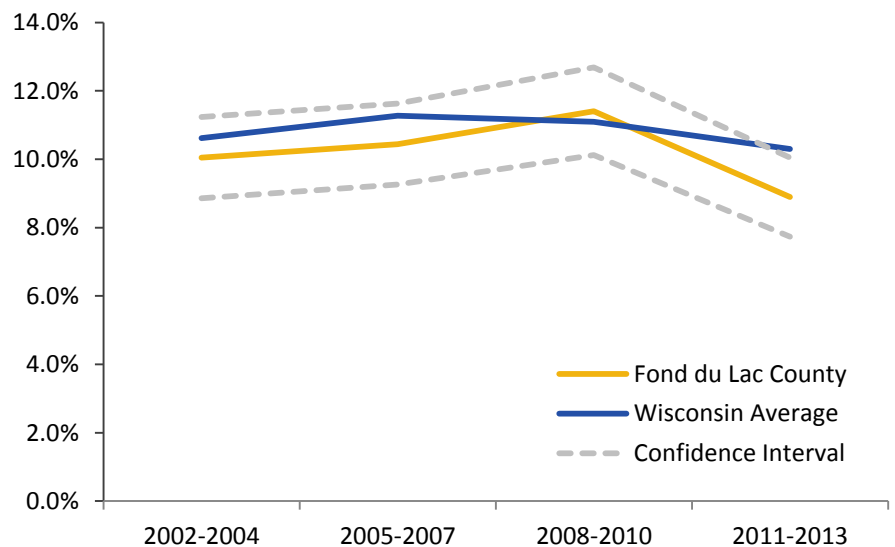
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

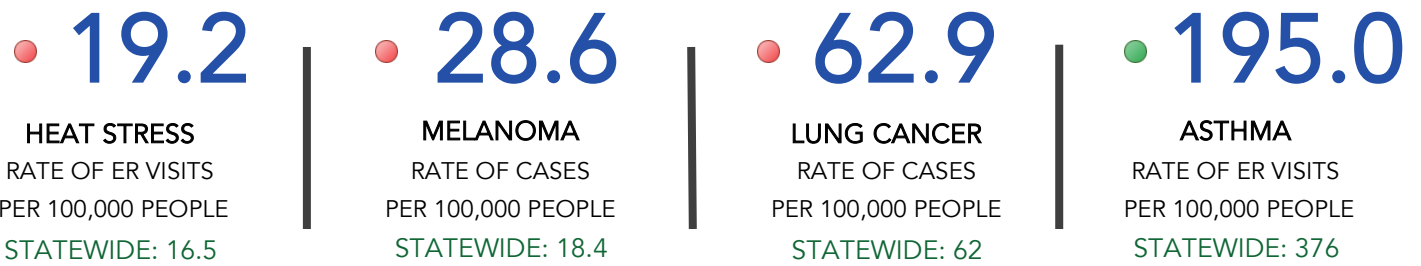
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS FOND DU LAC COUNTY

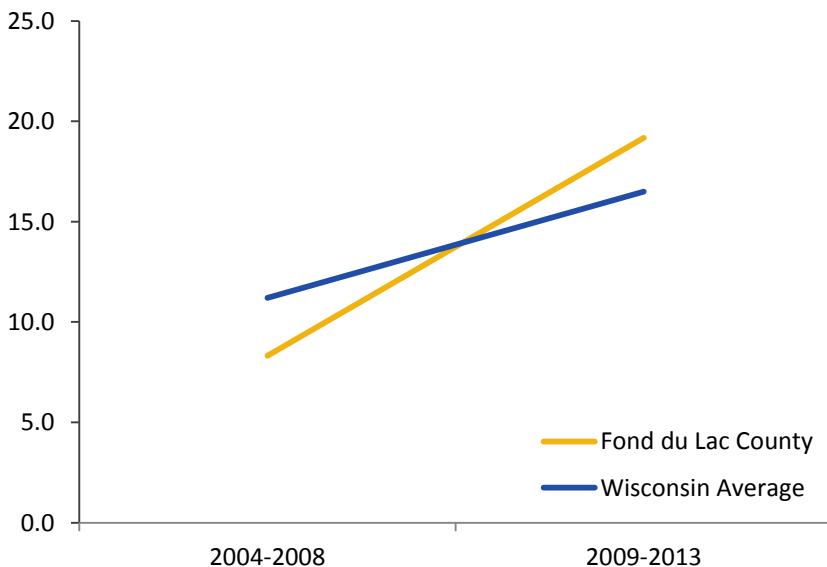
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



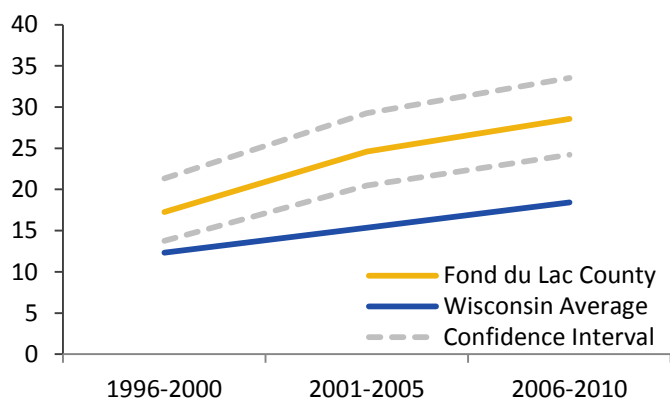


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



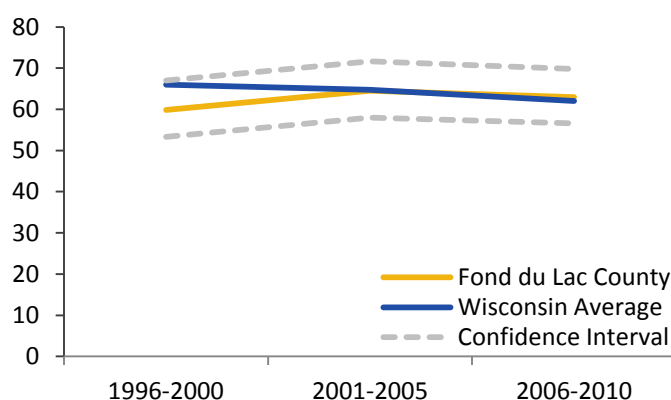
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



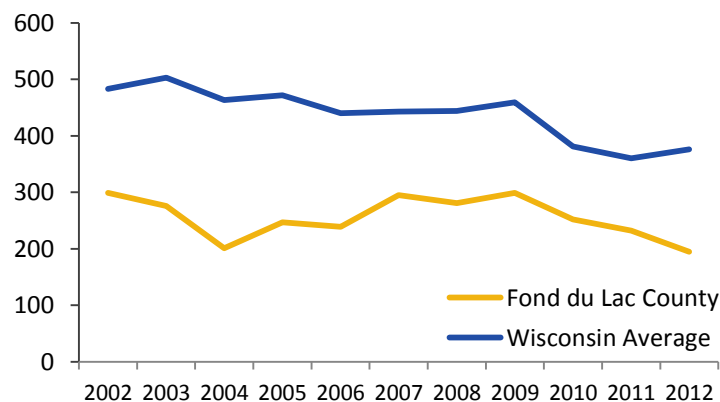
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

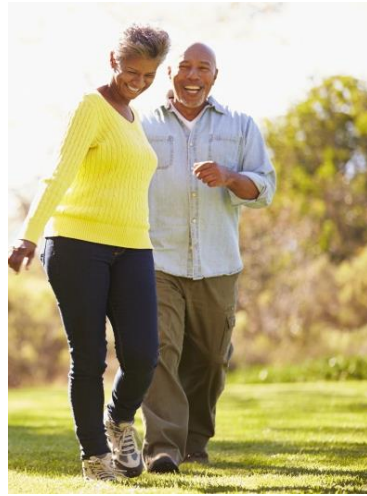
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



FOREST COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

FOREST COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.9 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.7 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.7

Childhood Lead Poisoning

● 3.0% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.6% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 13.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 20.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 13.9 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 80.6 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 375.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Due to small numbers, aggregated rates were calculated for this county.
Years displayed in this profile: Aggregated data from 2004-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY FOREST COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

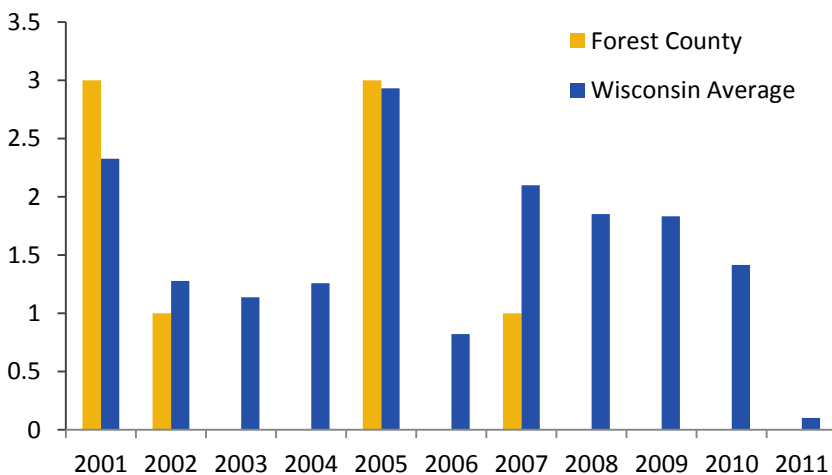
● 7.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





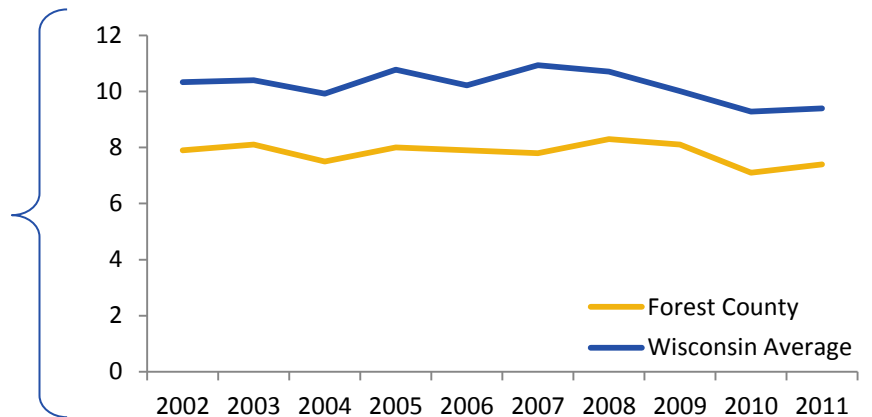
AIR QUALITY FOREST COUNTY

PARTICULATE MATTER 2.5

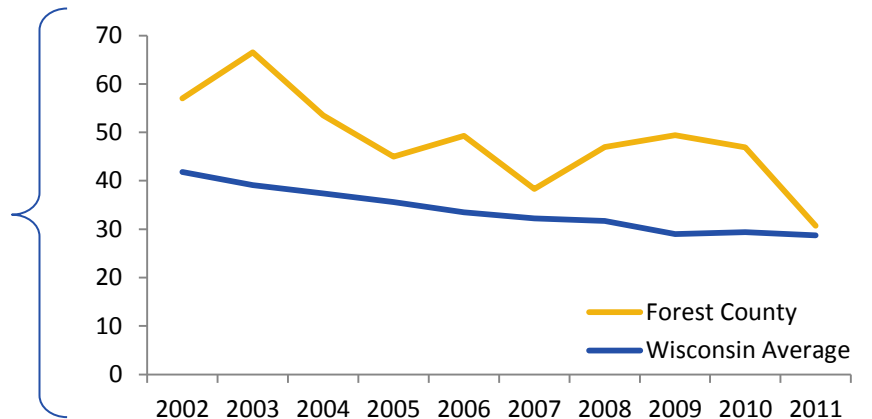
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

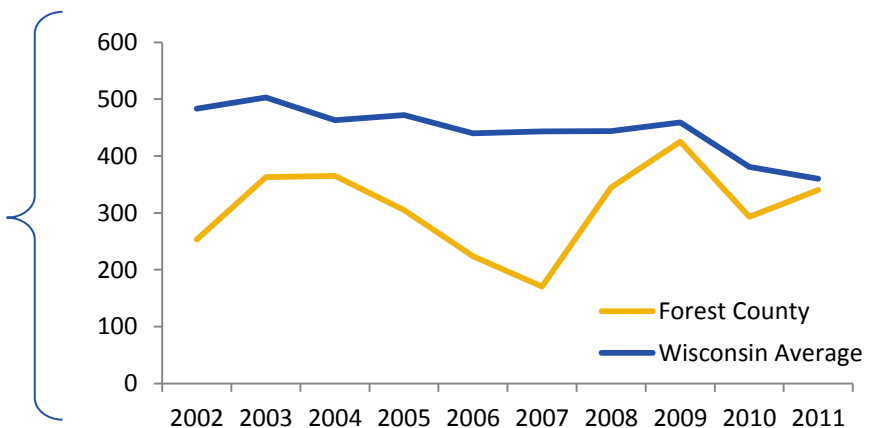
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



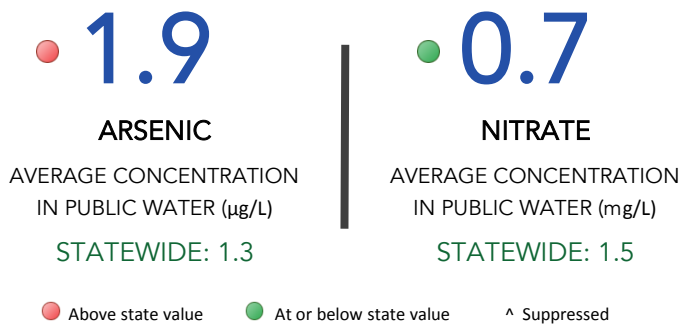
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY FOREST COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

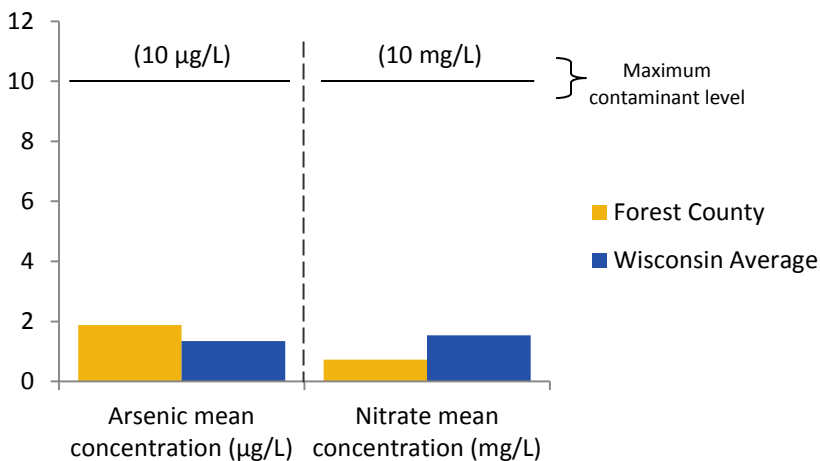
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY FOREST COUNTY

PRIVATE DRINKING WATER

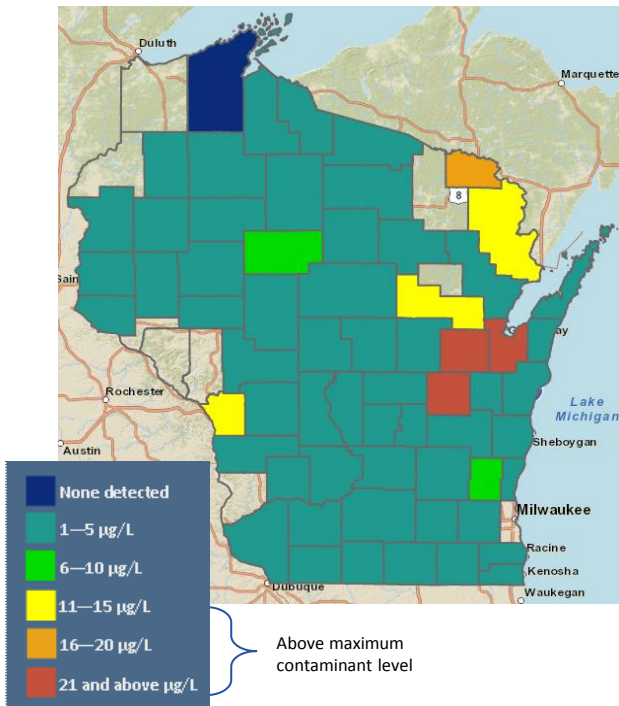
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

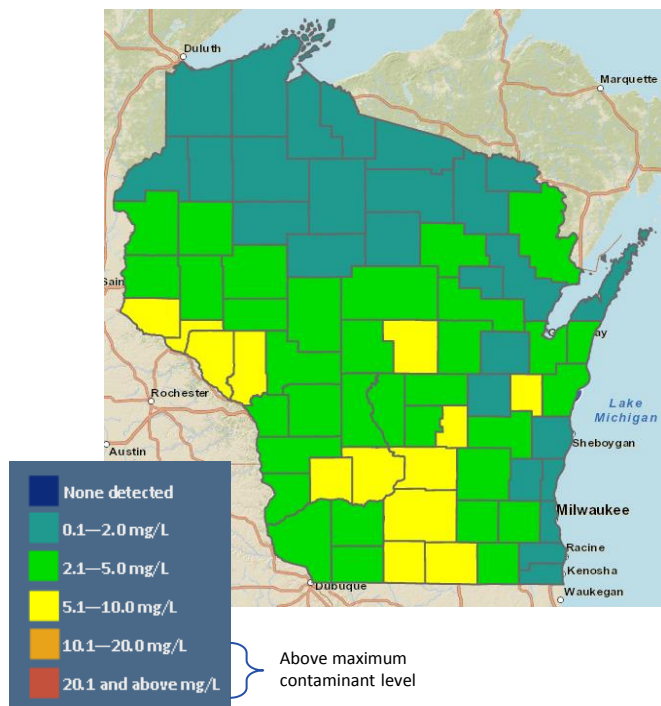
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS FOREST COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.1**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.7

● Above state value ● At or below state value ^ Suppressed

● **3.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

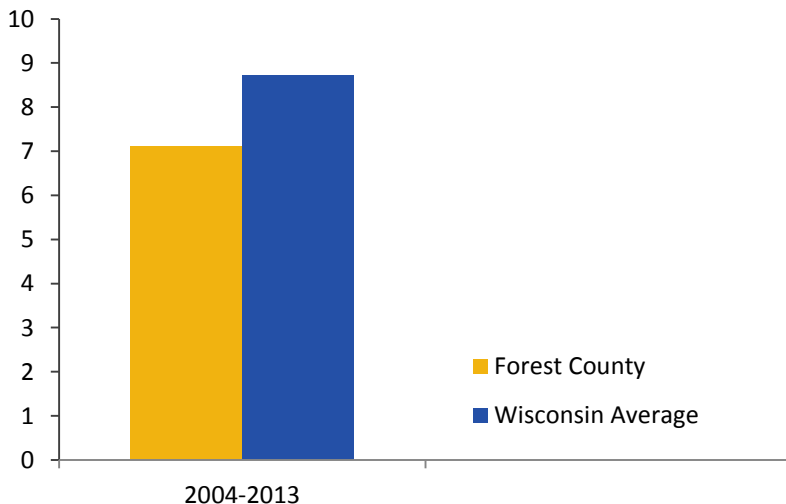
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

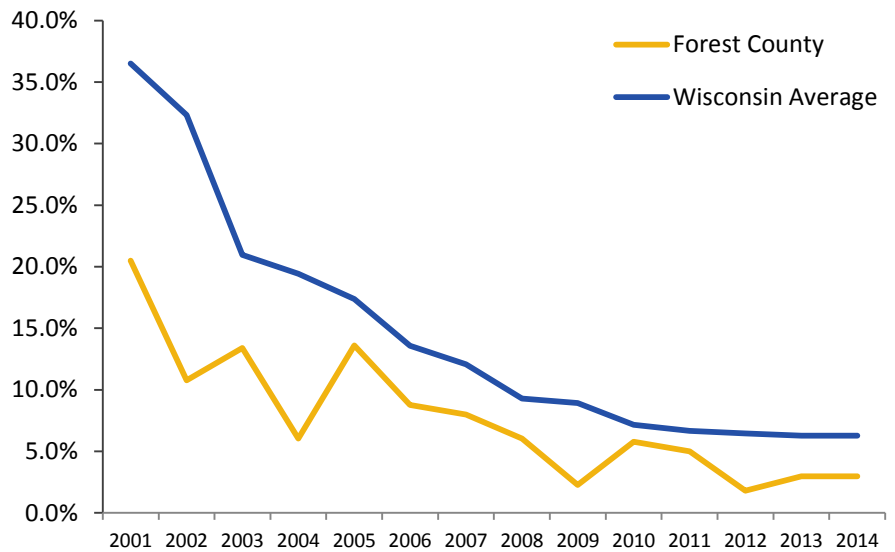
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

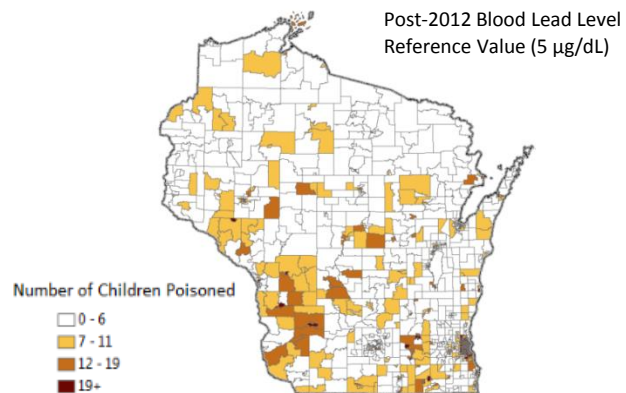
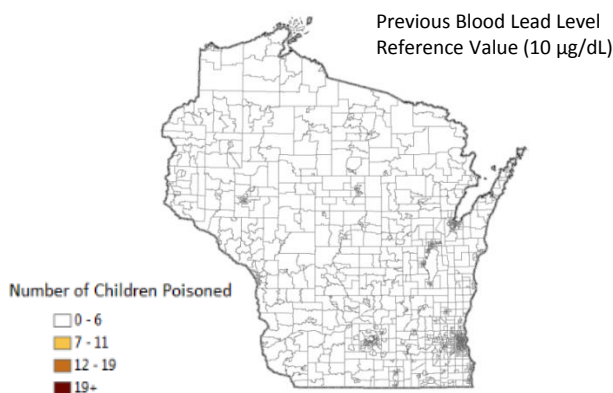
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

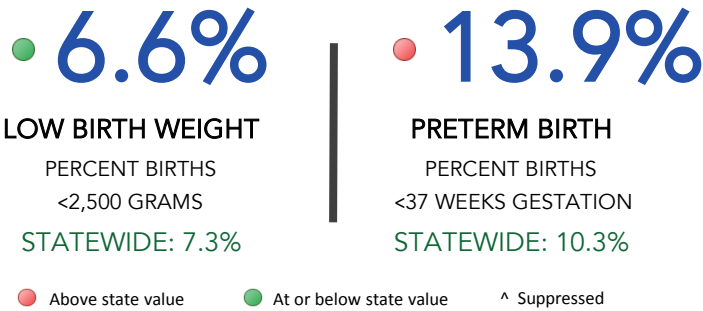
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES FOREST COUNTY

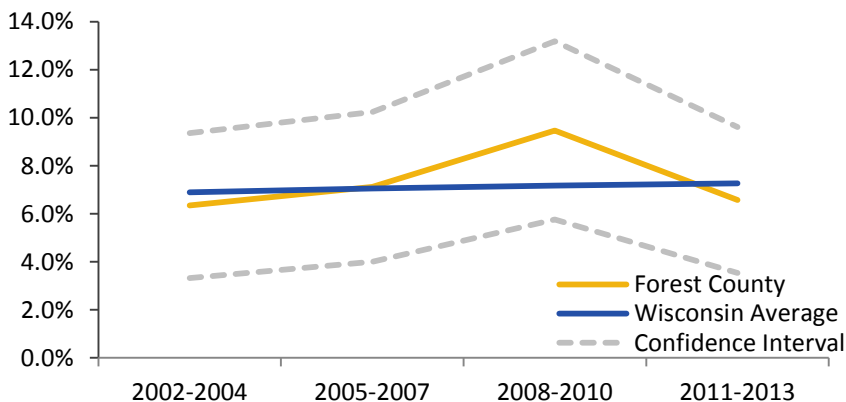
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES FOREST COUNTY

PRETERM BIRTH

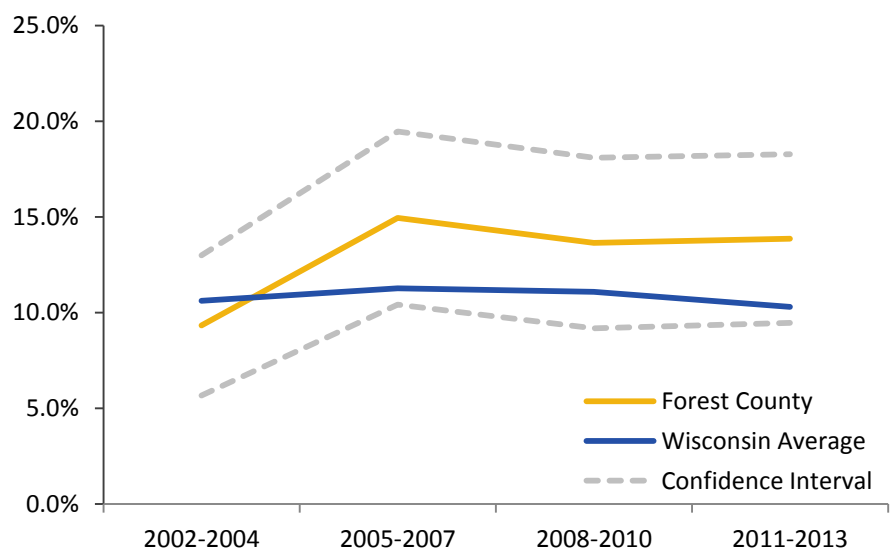
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

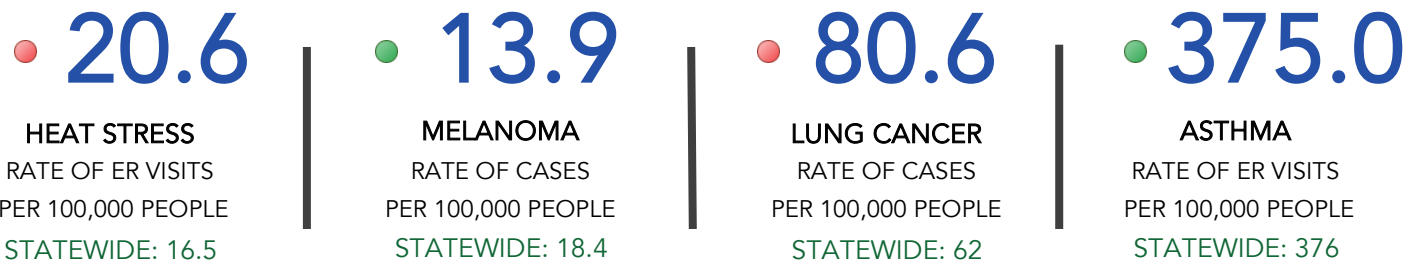
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS FOREST COUNTY

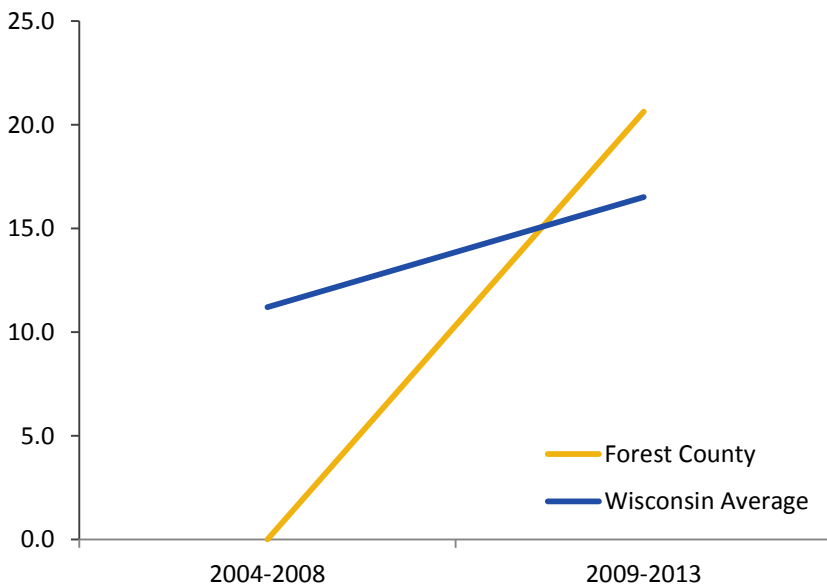
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



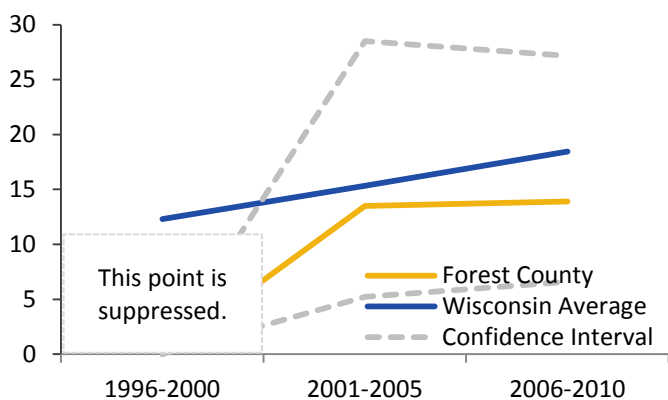


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



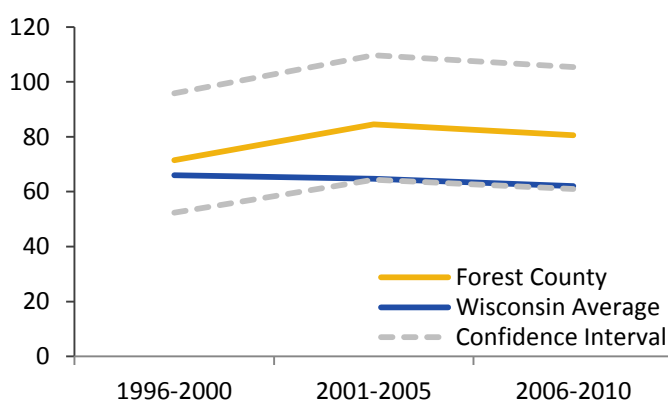
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



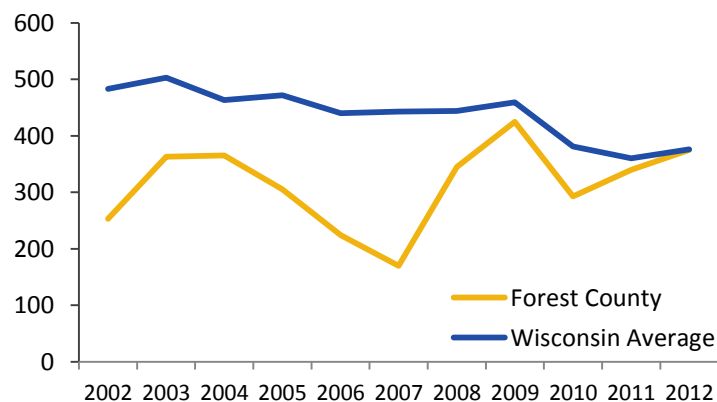
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data aggregated from 2004-2013 displayed on the dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. Due to small numbers, aggregated rates were calculated for this county.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

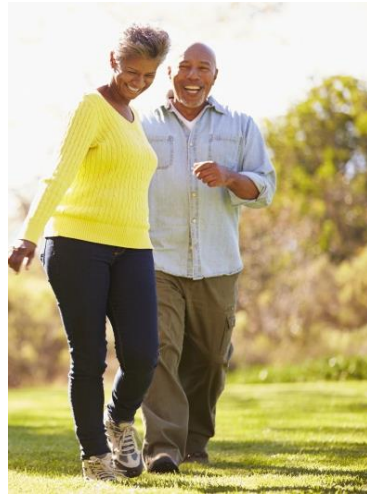
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



GRANT COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

GRANT COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.5 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.9% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 32.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 12.9 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 53.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 311.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY GRANT COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

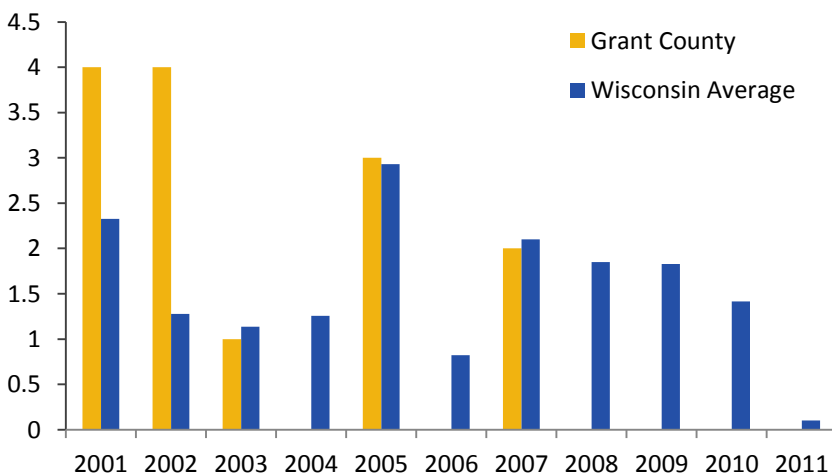
● 10.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





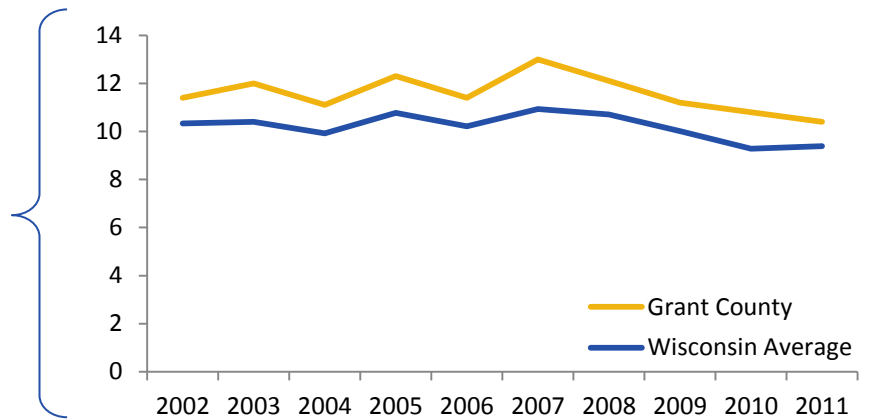
AIR QUALITY GRANT COUNTY

PARTICULATE MATTER 2.5

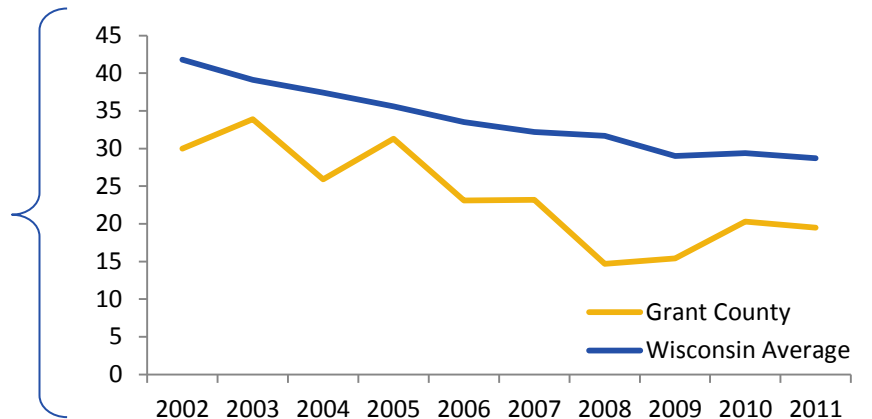
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

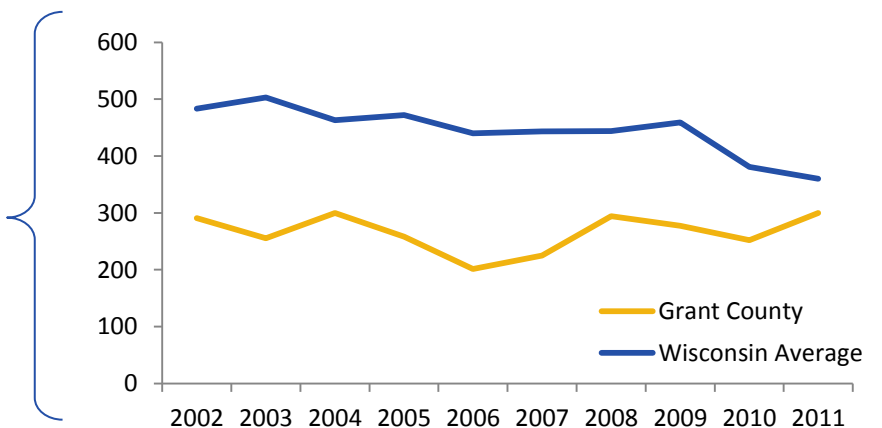
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY GRANT COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● 0.5

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● 1.2

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

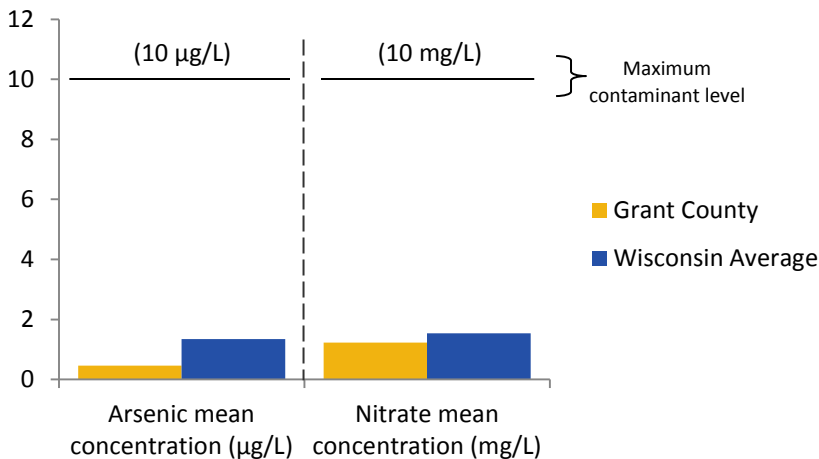
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY GRANT COUNTY

PRIVATE DRINKING WATER

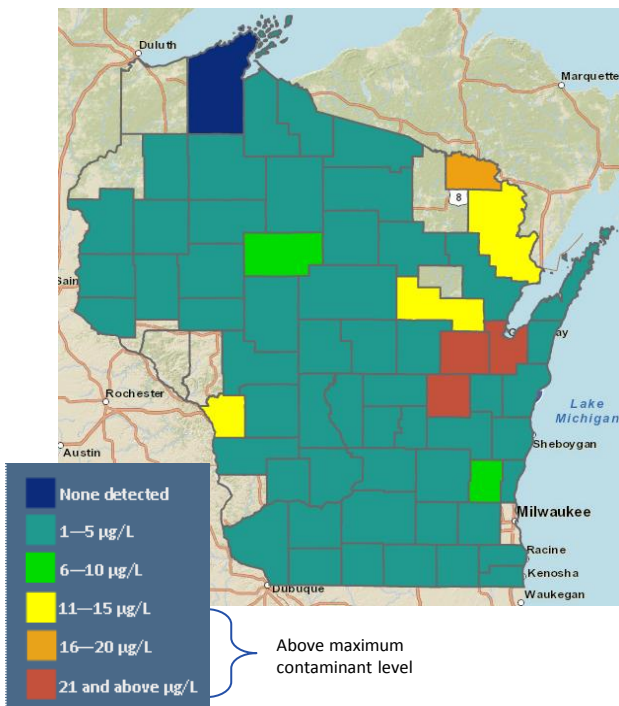
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

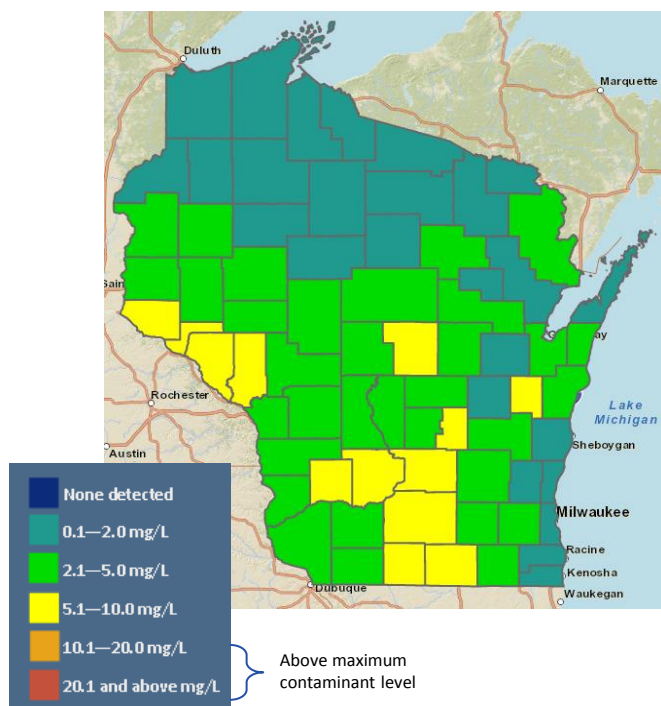
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS GRANT COUNTY

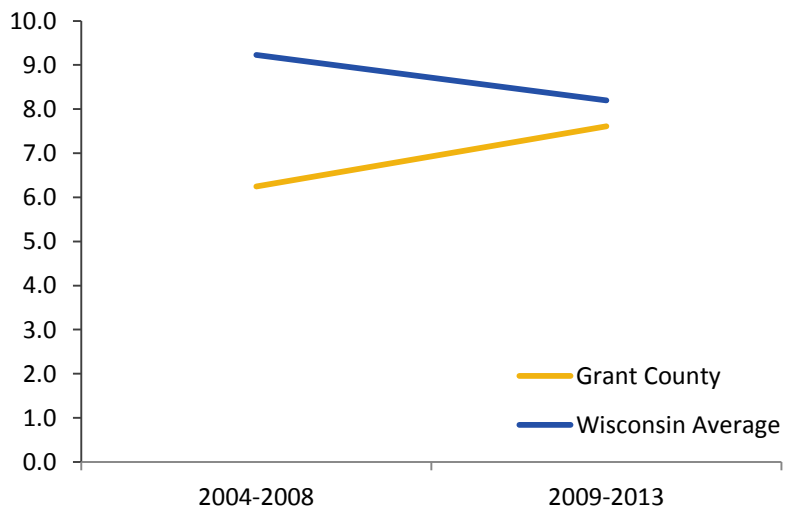
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

- **7.6**
- CARBON MONOXIDE POISONING**
- RATE OF ER VISITS RELATED TO CO PER 100,000
- STATEWIDE: 8.2
- At or below state value

- **2.9%**
- CHILDHOOD LEAD POISONING**
- PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$
- STATEWIDE: 6.3%
- At or below state value

● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht 



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

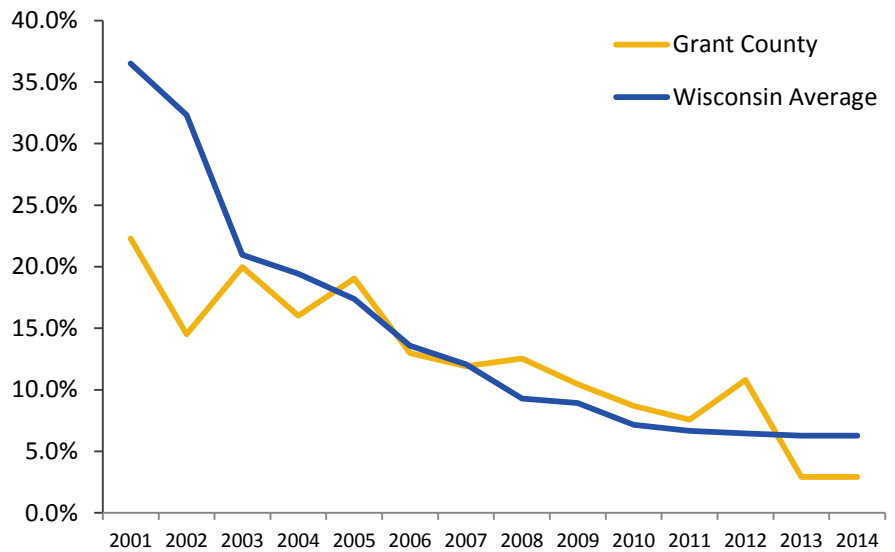
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

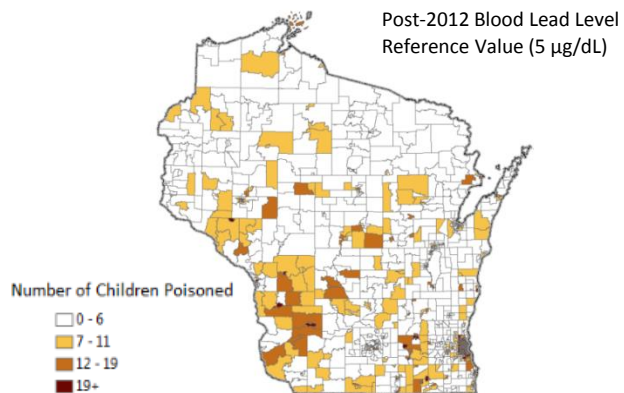
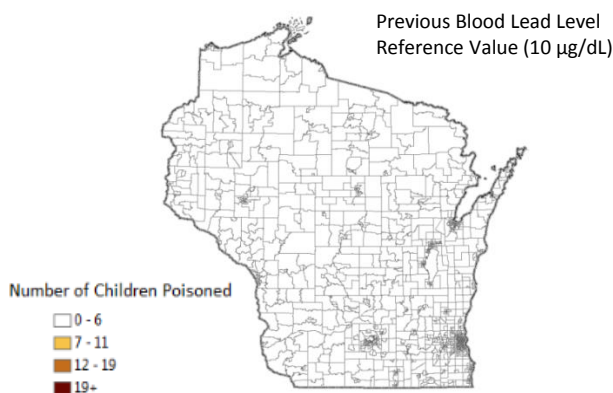
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

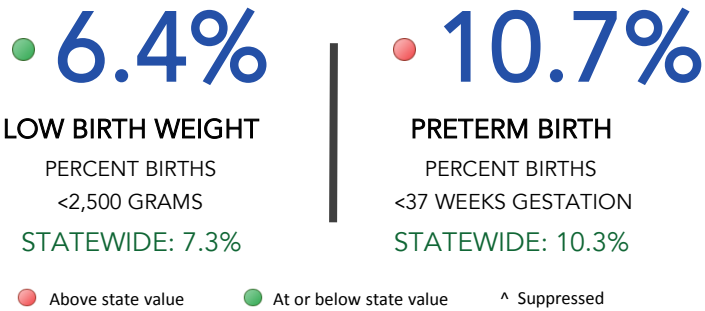
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES GRANT COUNTY

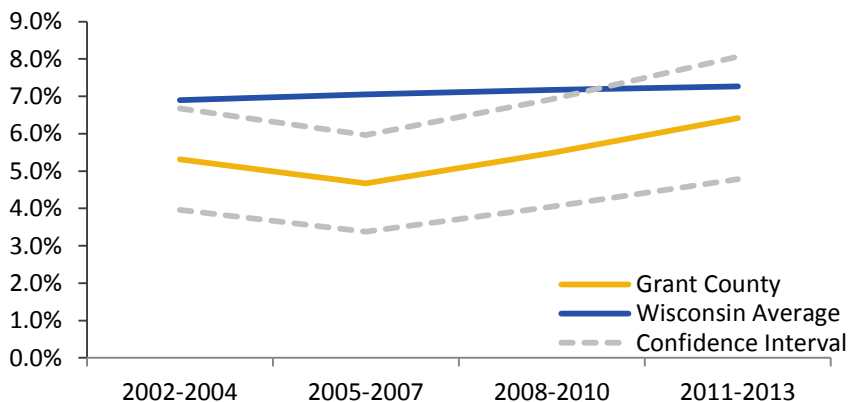
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES GRANT COUNTY

PRETERM BIRTH

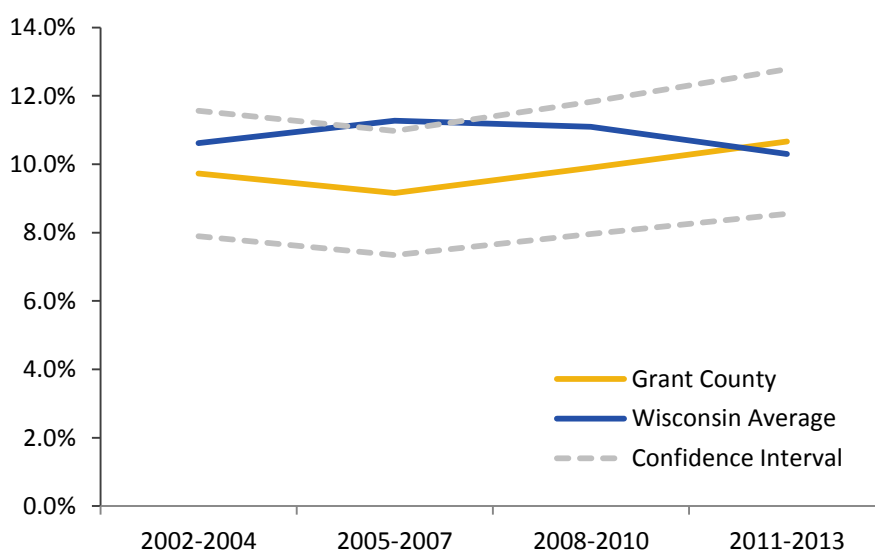
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

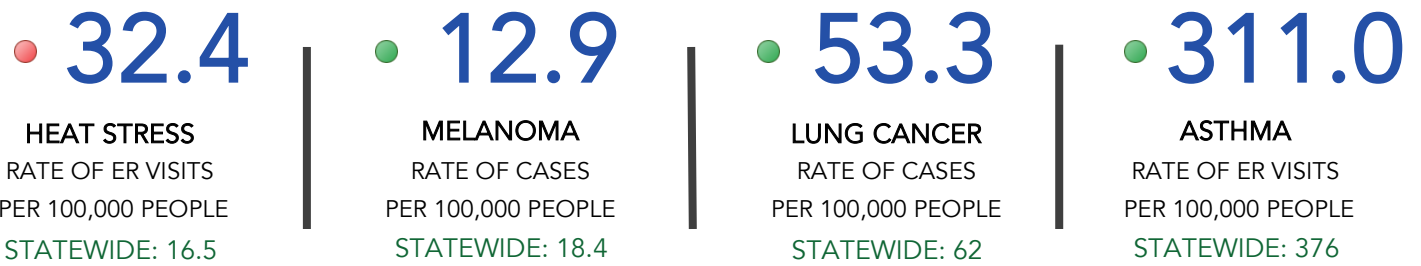
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS GRANT COUNTY

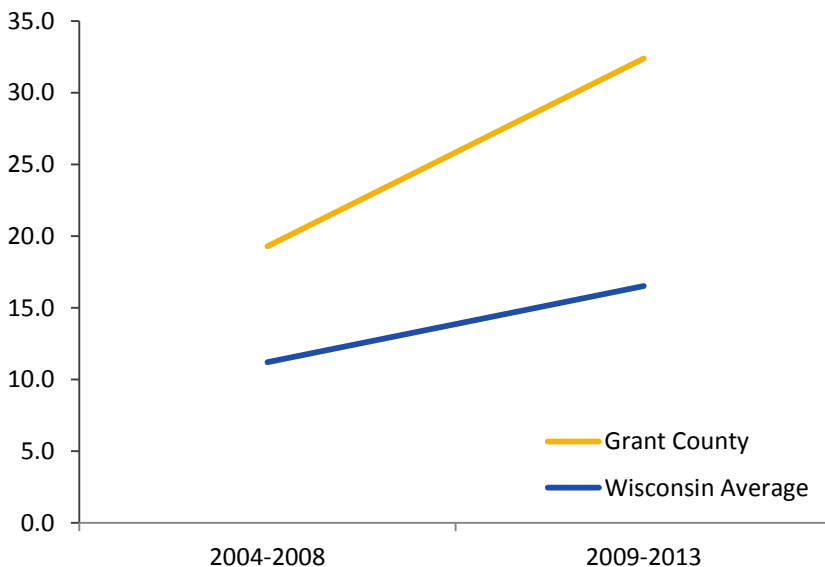
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht

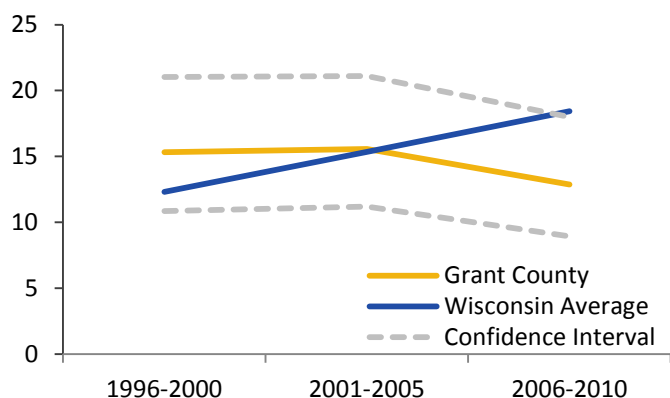


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



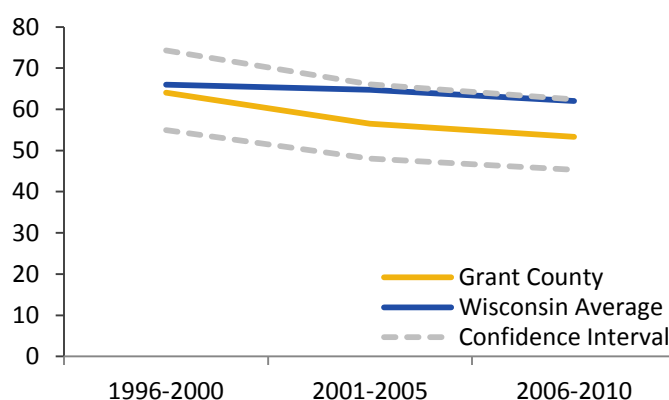
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



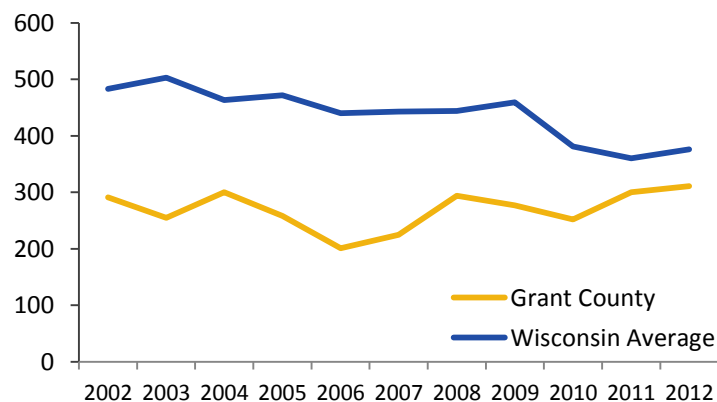
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



GREEN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

GREEN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 5.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 6.6% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 19.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 18.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 45.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 303.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY GREEN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

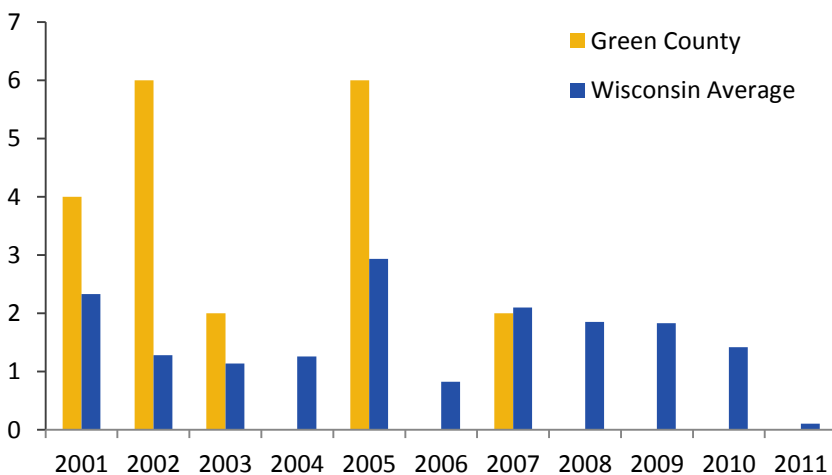
● 10.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





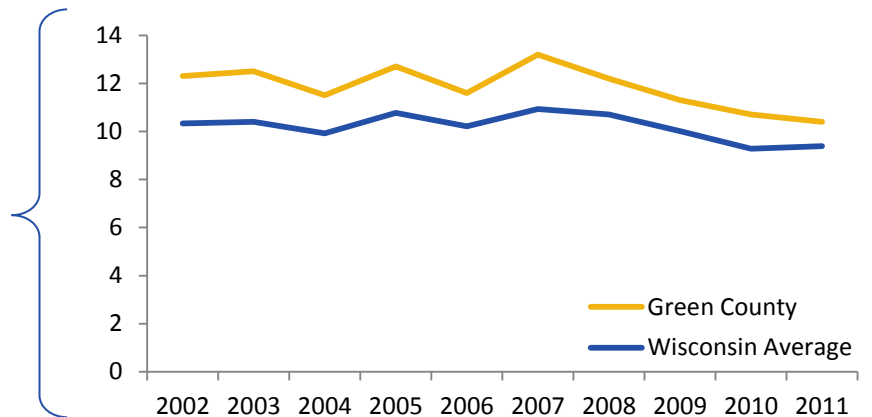
AIR QUALITY GREEN COUNTY

PARTICULATE MATTER 2.5

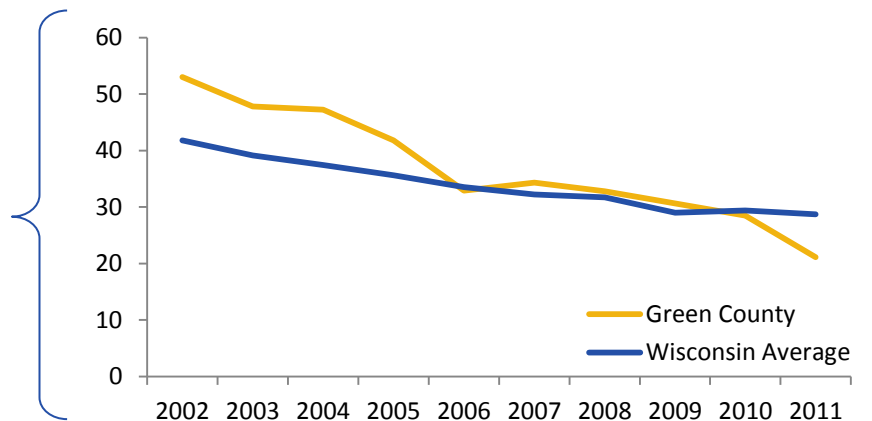
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

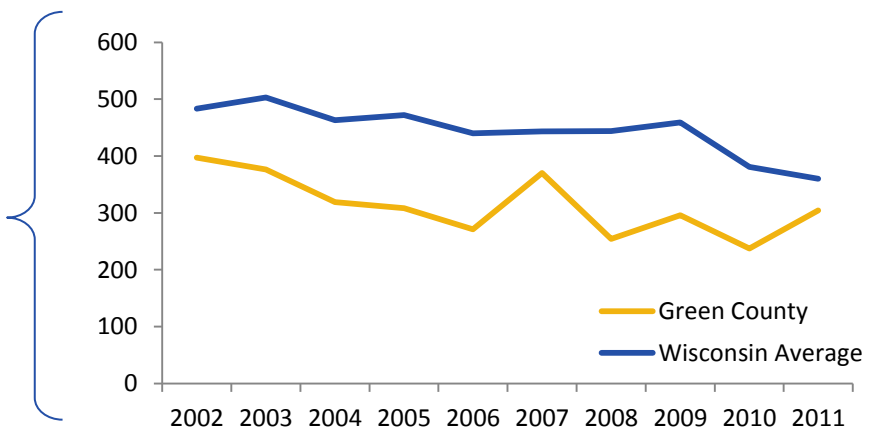
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



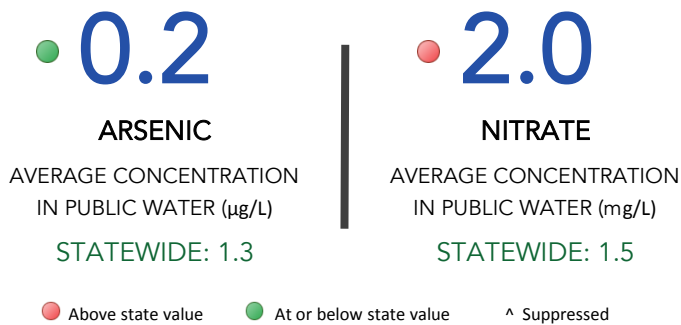
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY GREEN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

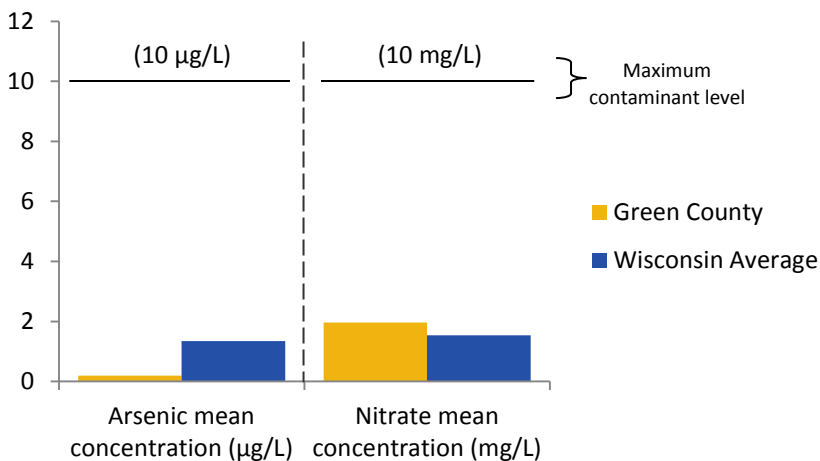
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY GREEN COUNTY

PRIVATE DRINKING WATER

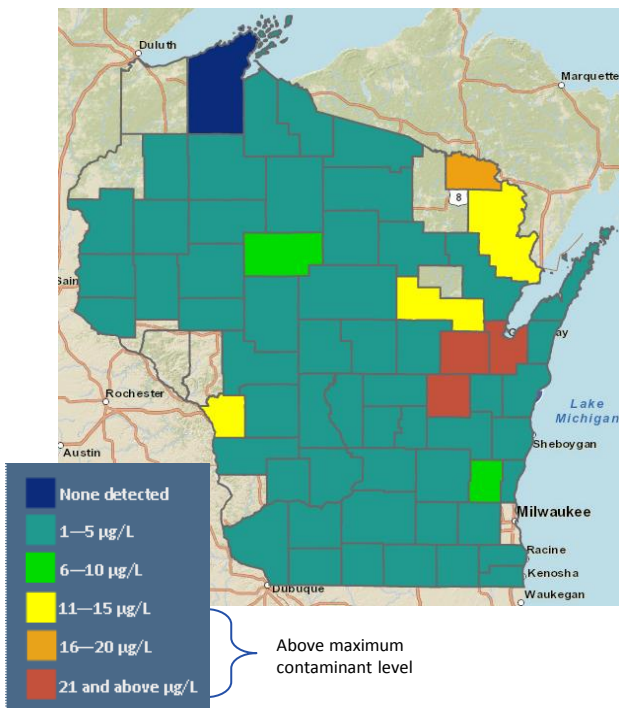
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

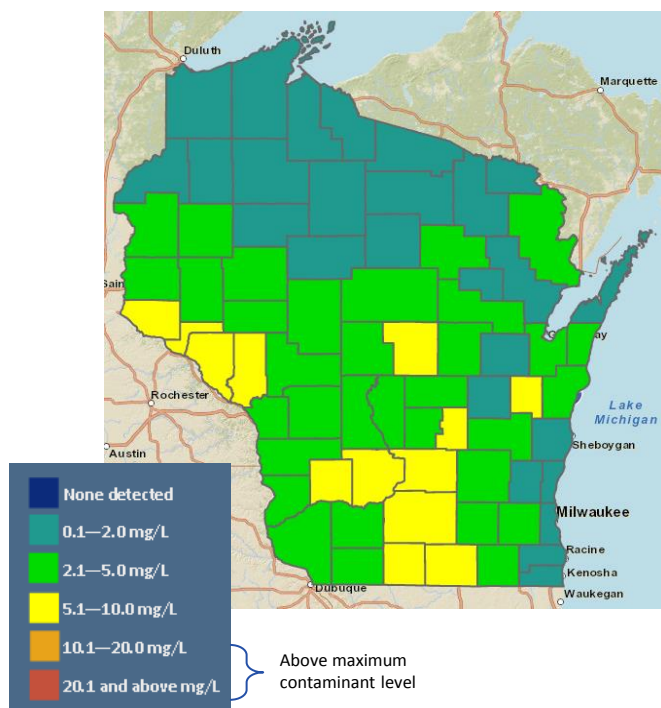
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS GREEN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

5.1
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

6.6%
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

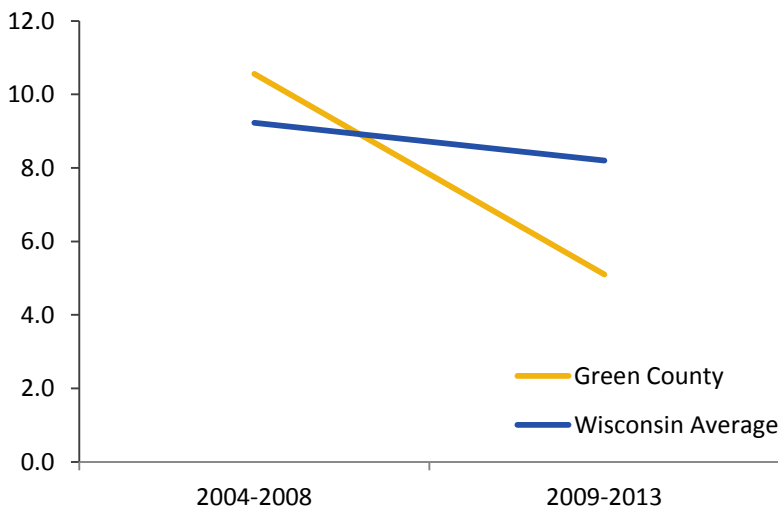
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

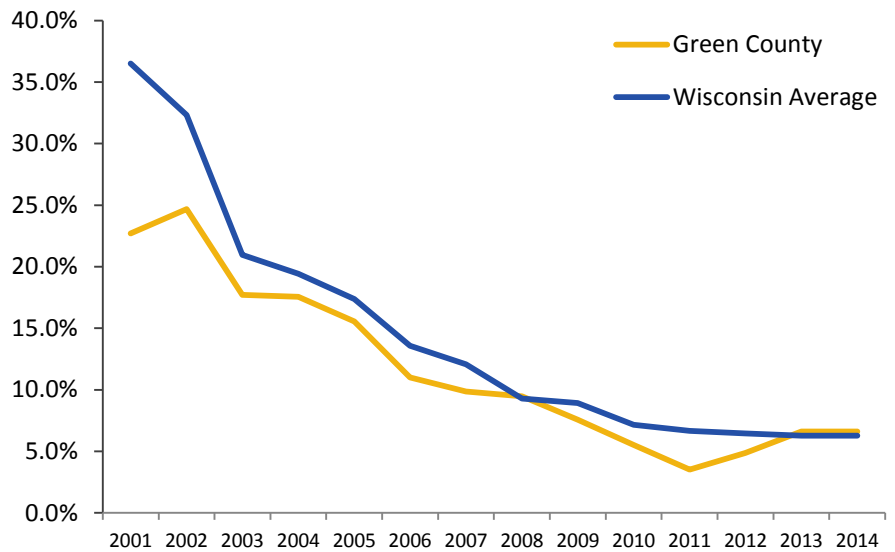
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

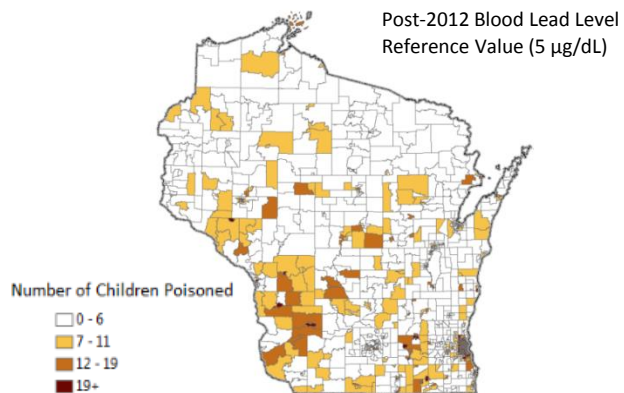
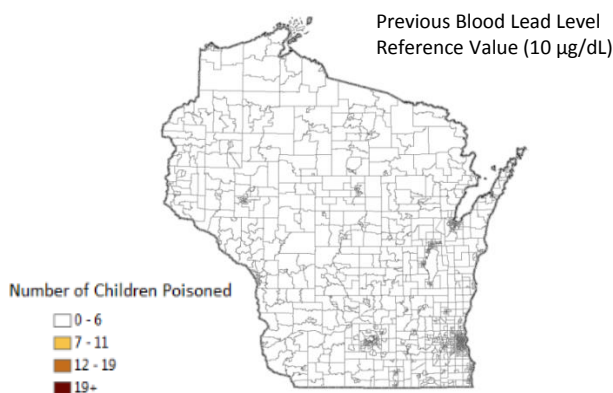
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

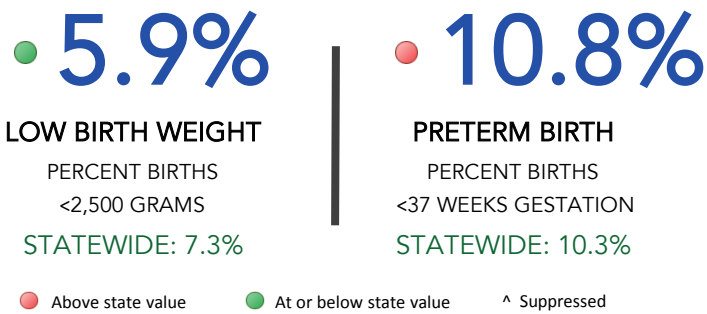
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES GREEN COUNTY

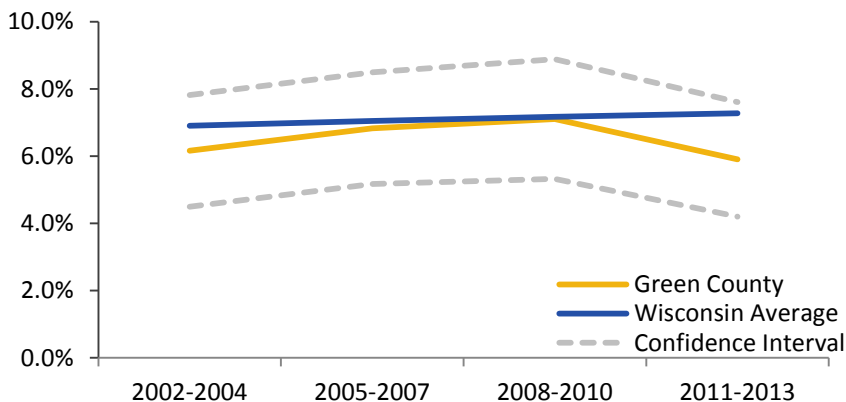
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES GREEN COUNTY

PRETERM BIRTH

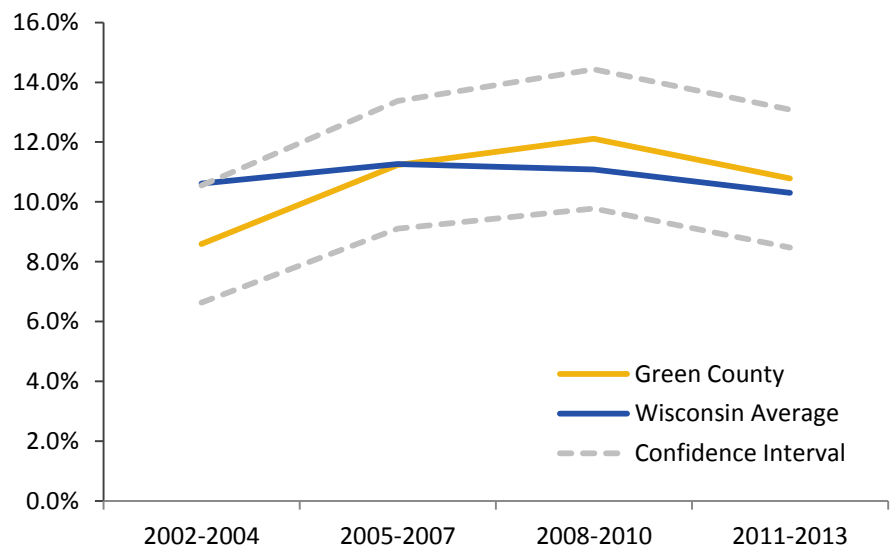
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

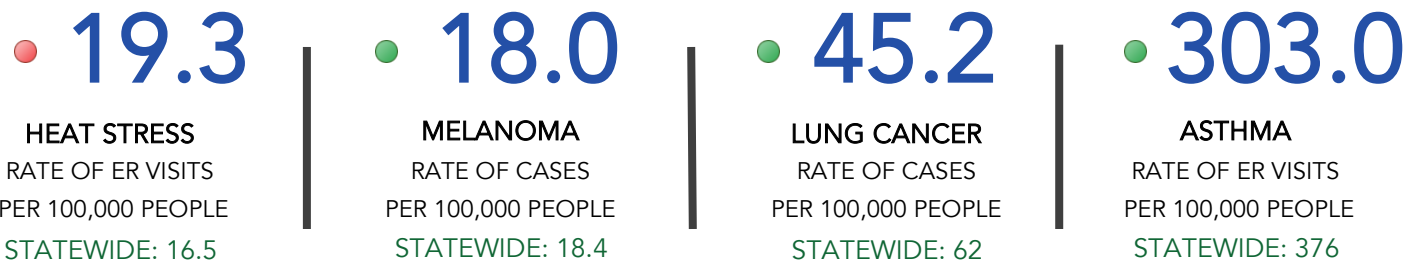
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS GREEN COUNTY

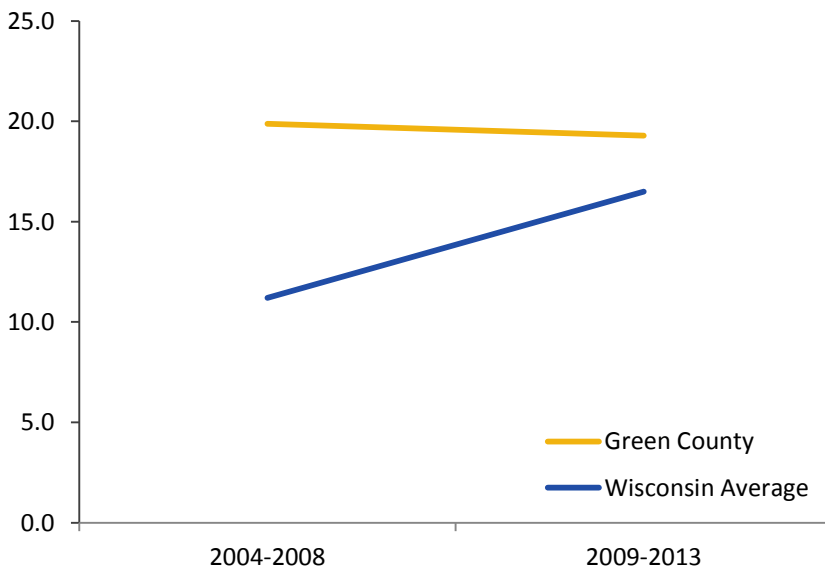
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



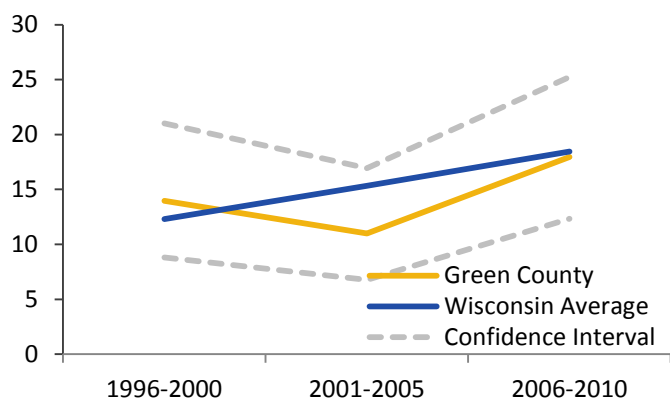


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



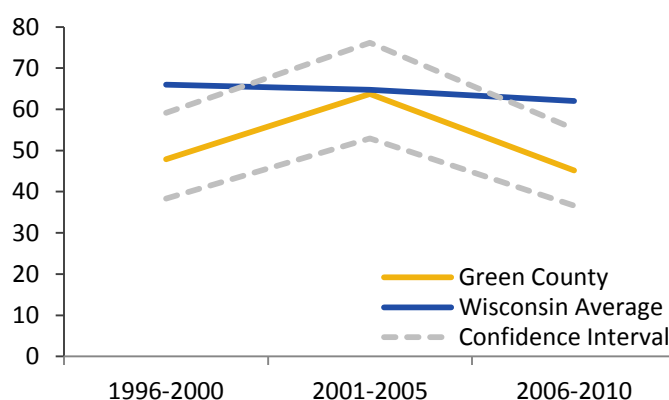
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



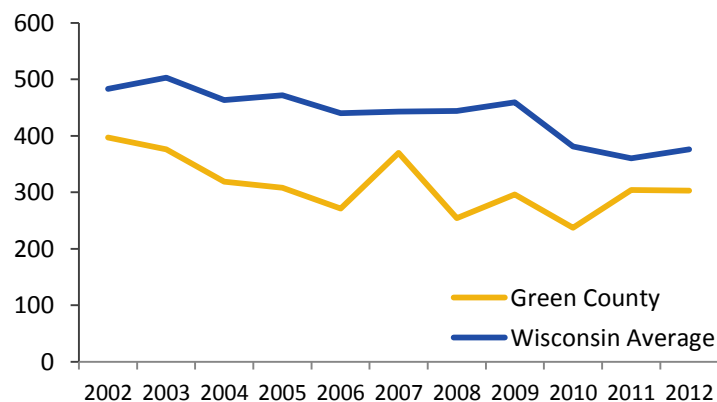
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

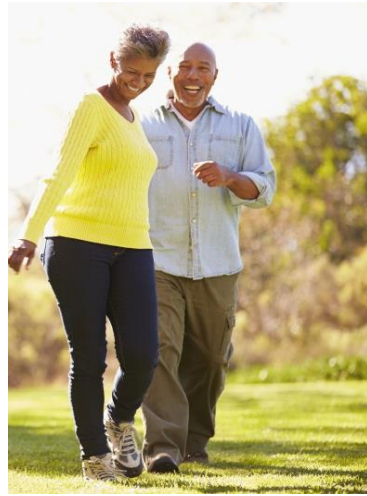
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



GREEN LAKE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

GREEN LAKE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 4.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 14.0 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.5% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.0% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 19.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 19.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 59.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 312.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY GREEN LAKE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

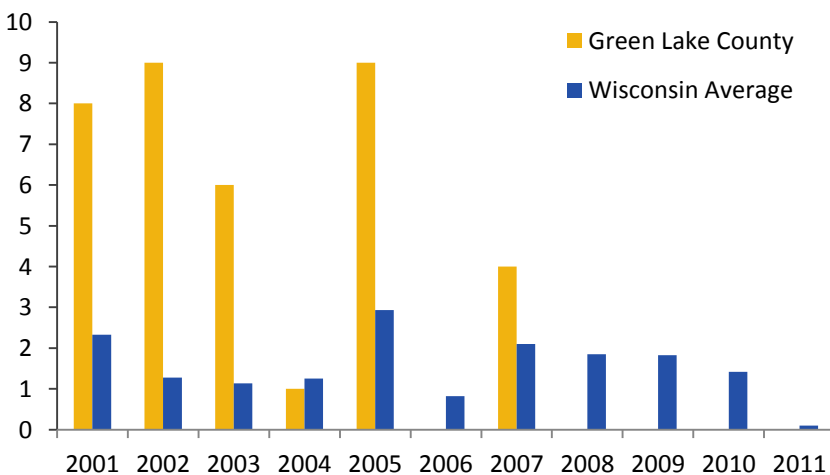
● 9.8

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

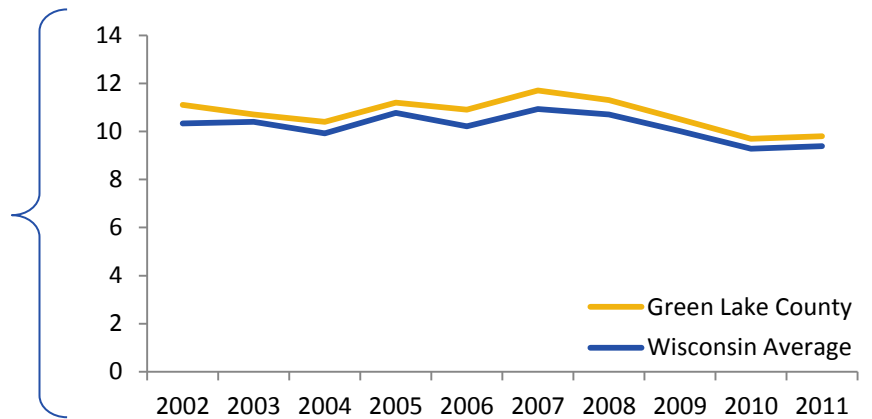
GREEN LAKE COUNTY

PARTICULATE MATTER 2.5

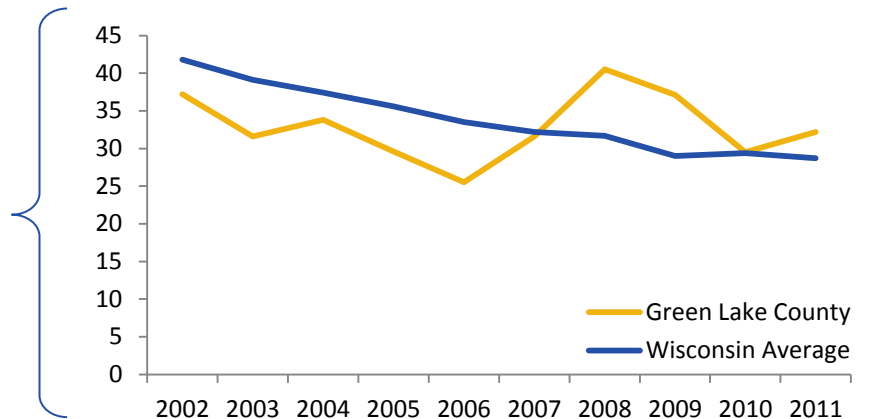
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

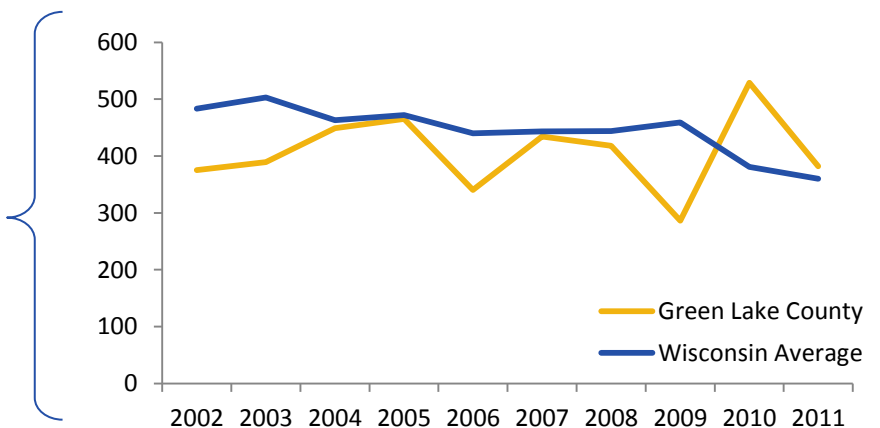
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



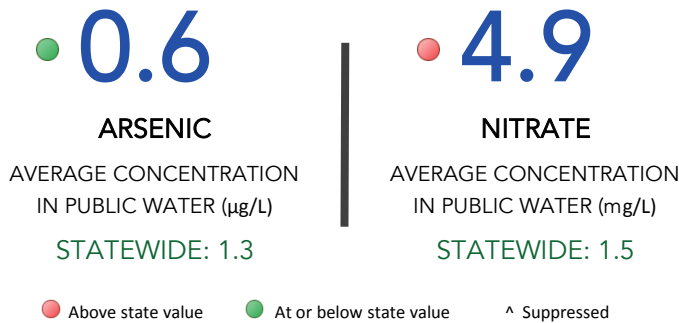
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY GREEN LAKE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

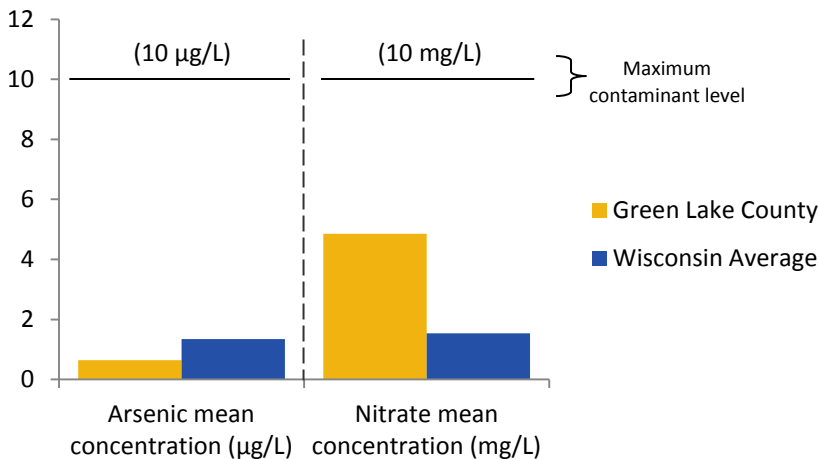
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY GREEN LAKE COUNTY

PRIVATE DRINKING WATER

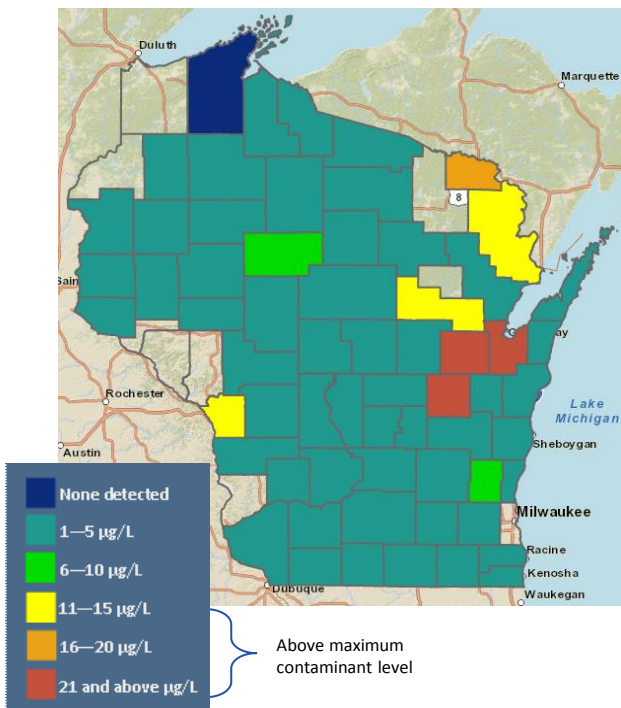
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

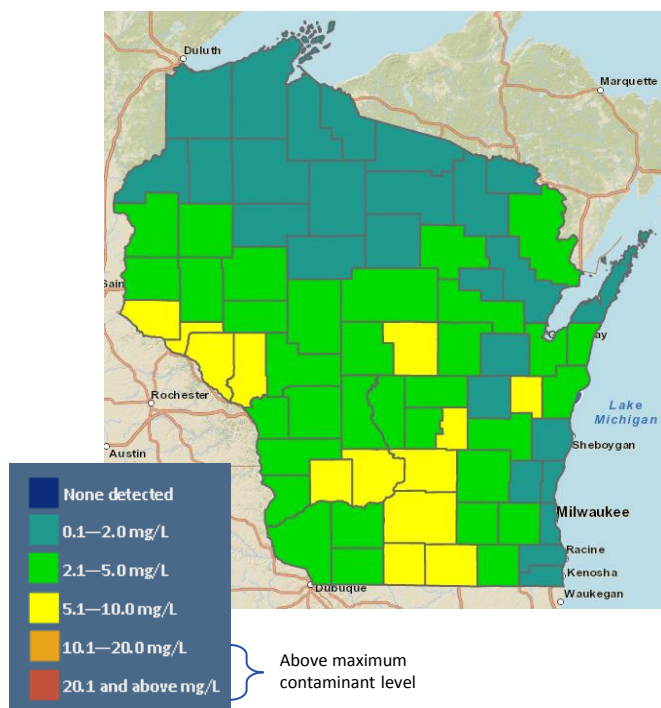
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

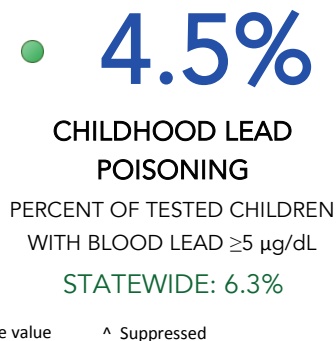
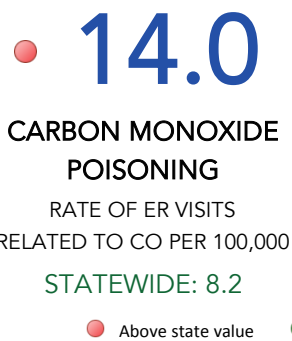


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

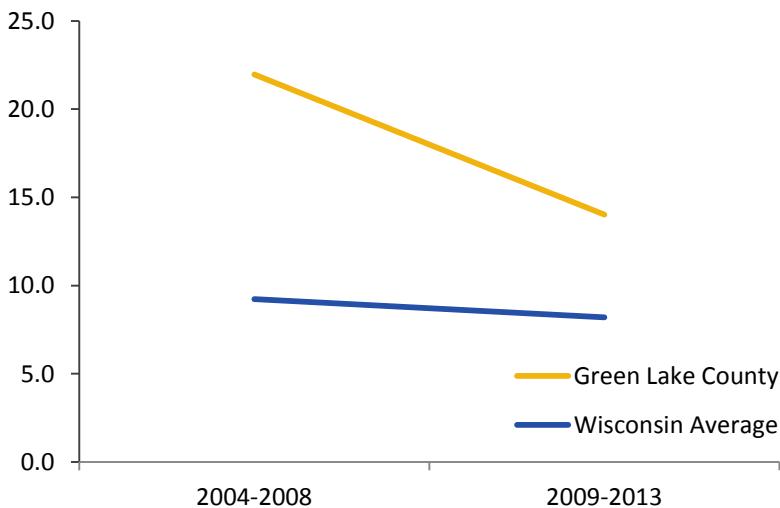


HOME HAZARDS GREEN LAKE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

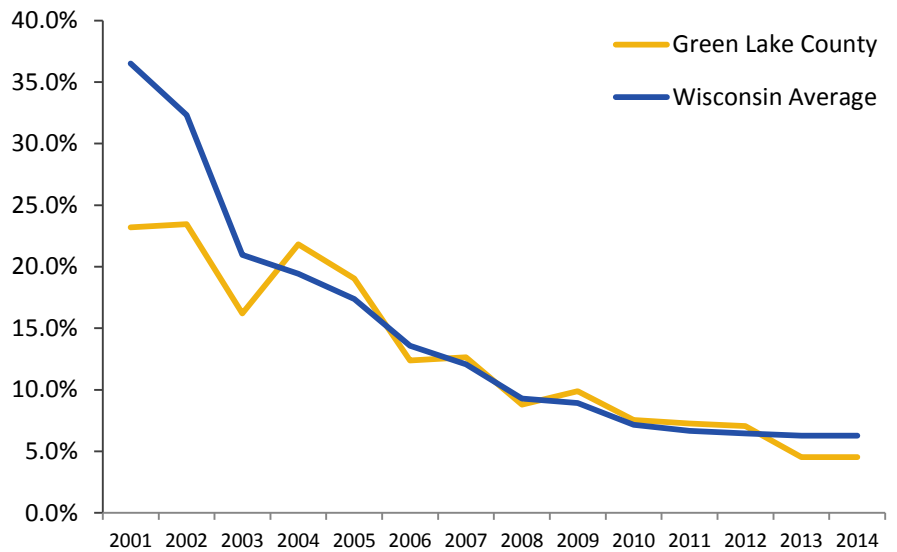
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

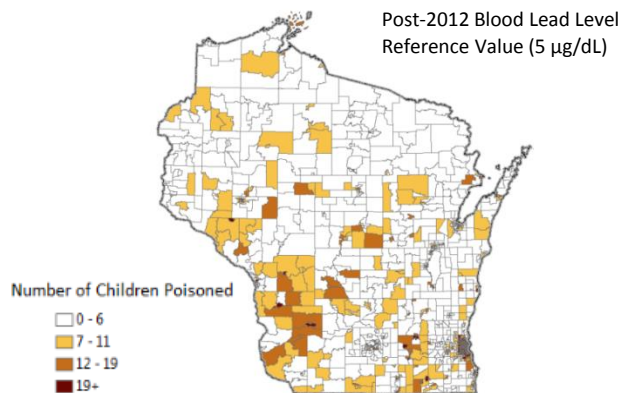
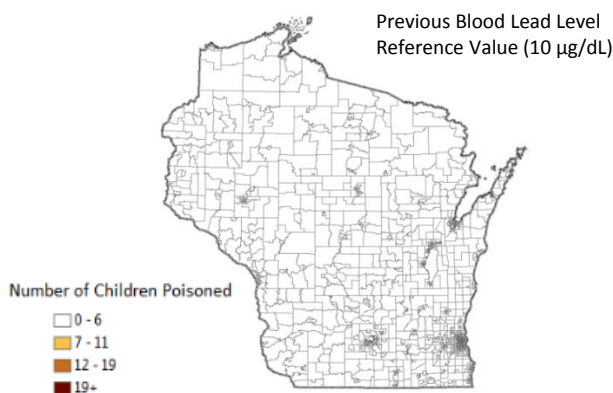
CHILDHOOD LEAD POISONING

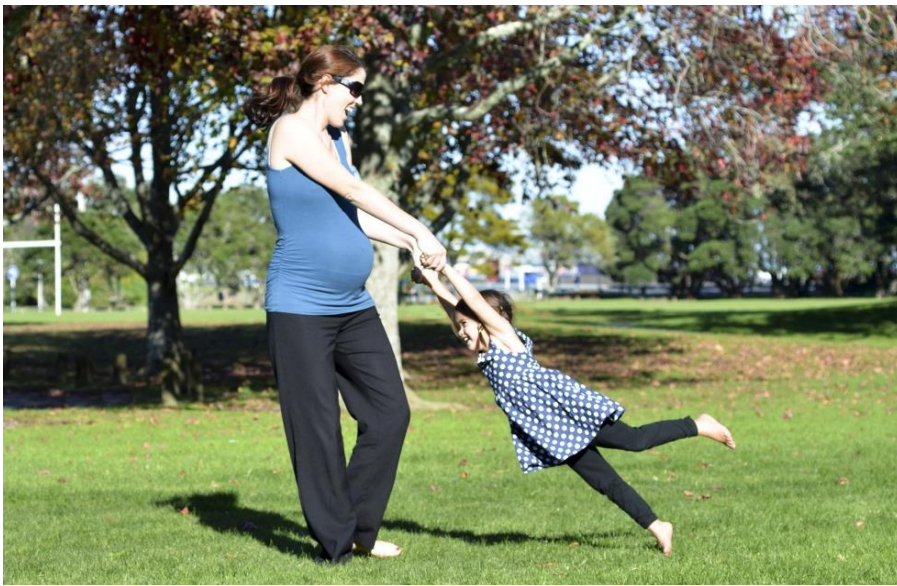
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES GREEN LAKE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.0%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.9%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

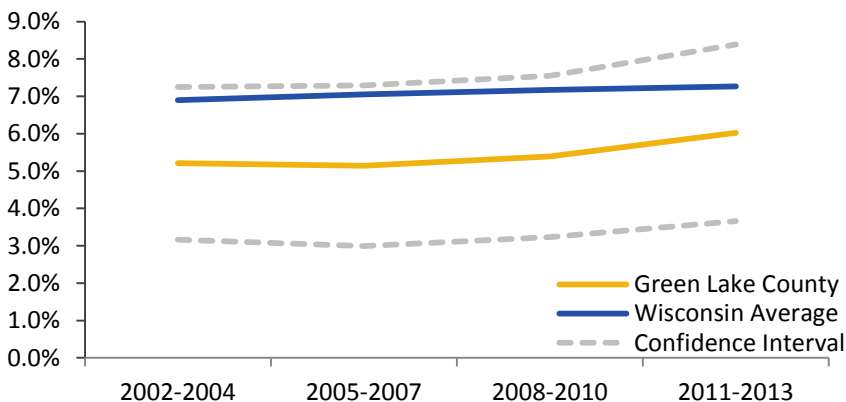
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES GREEN LAKE COUNTY

PRETERM BIRTH

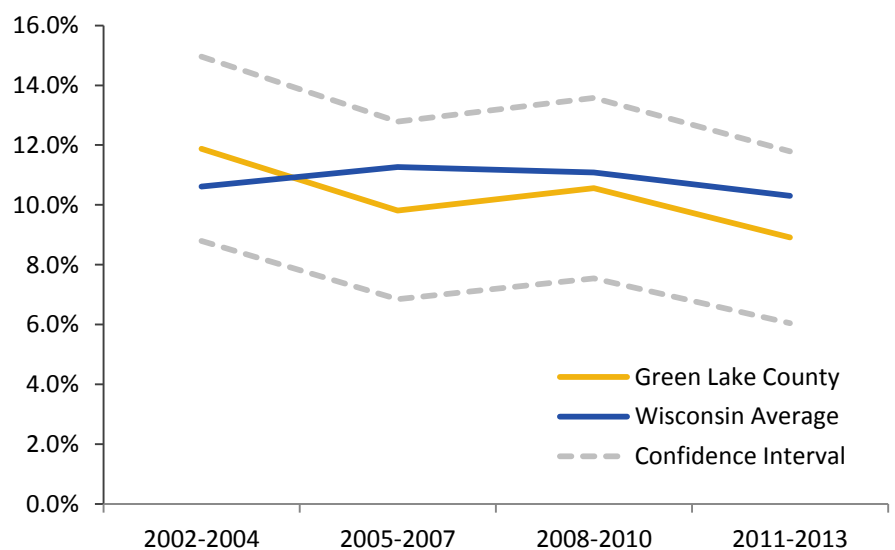
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

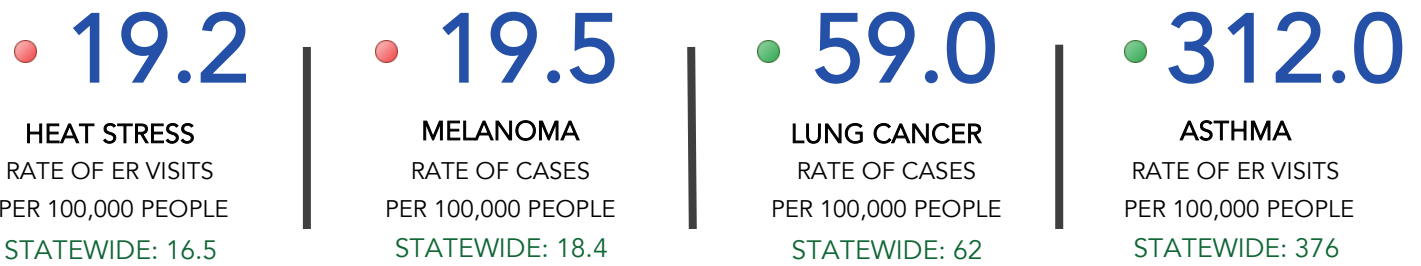
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS GREEN LAKE COUNTY

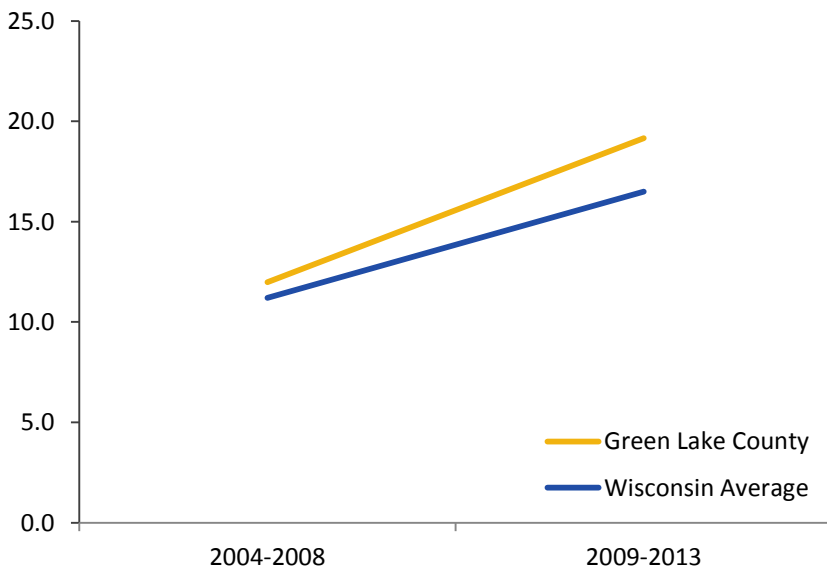
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



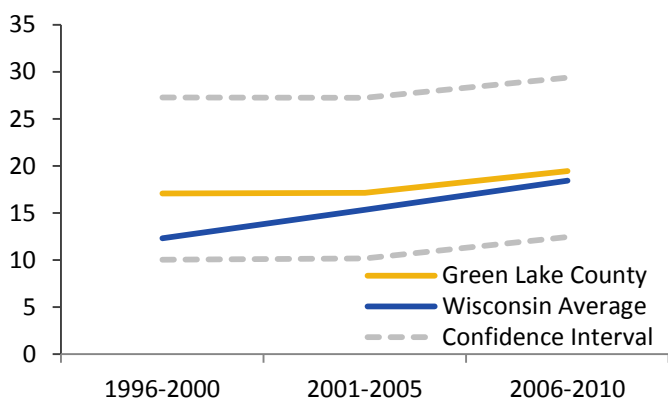


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



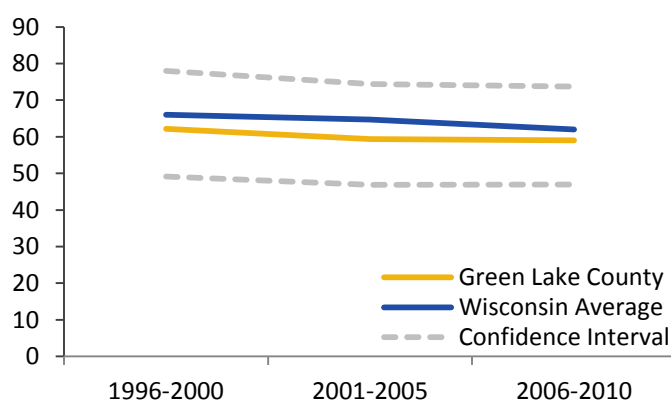
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



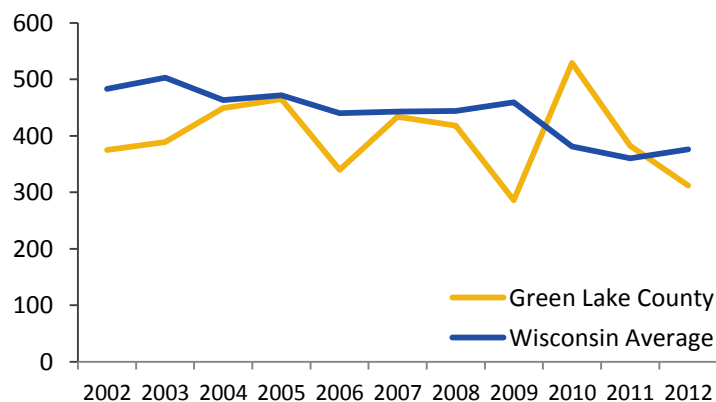
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

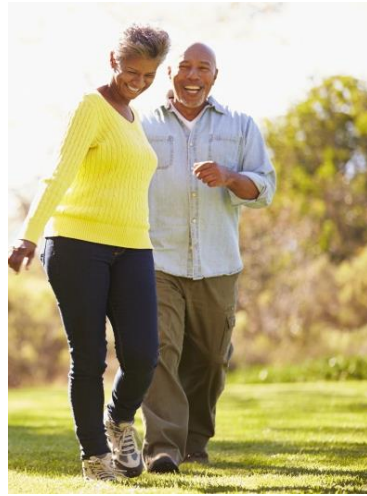
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



IOWA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

IOWA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

0.9 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.7 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

17.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

2.7% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

6.0% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

9.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

33.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

21.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

51.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

218.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY IOWA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

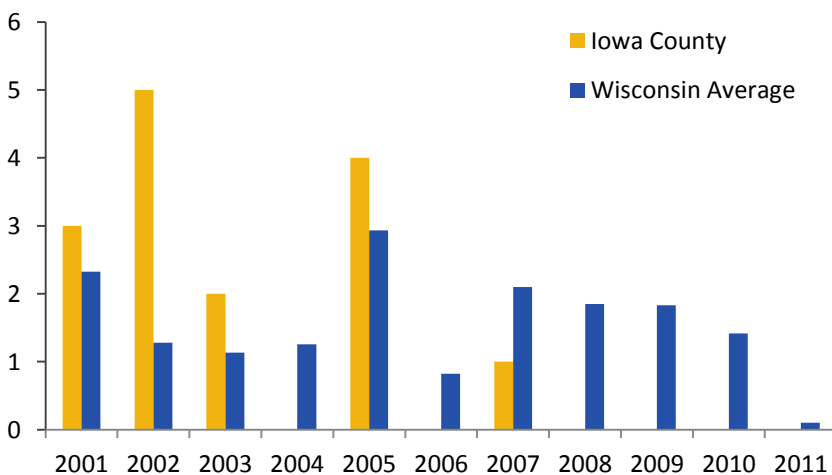
● 9.9

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





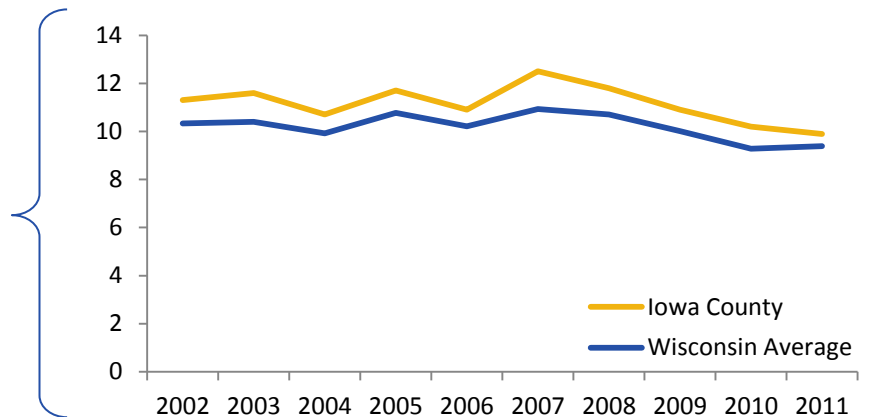
AIR QUALITY IOWA COUNTY

PARTICULATE MATTER 2.5

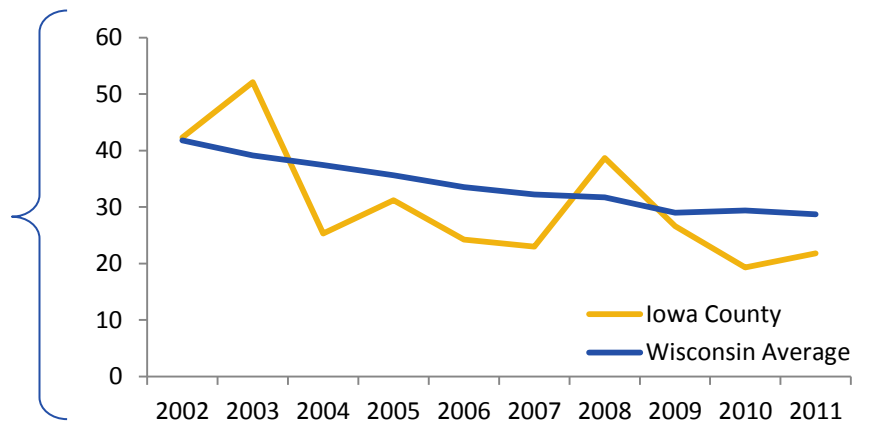
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

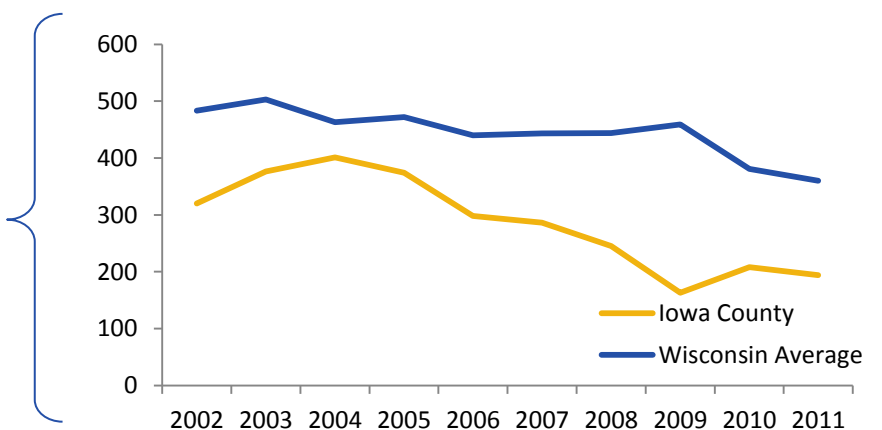
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



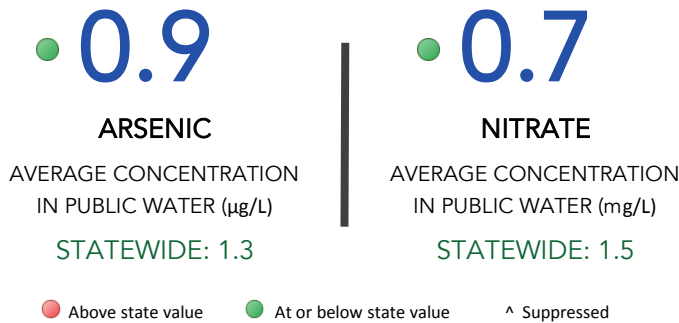
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY IOWA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

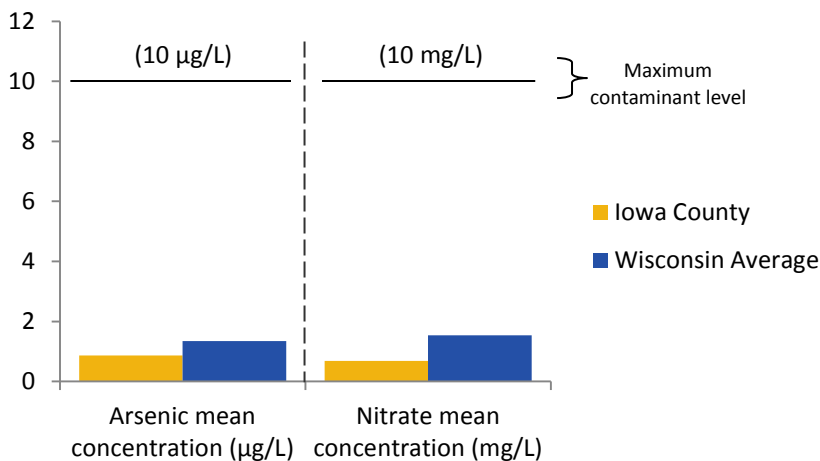
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY IOWA COUNTY

PRIVATE DRINKING WATER

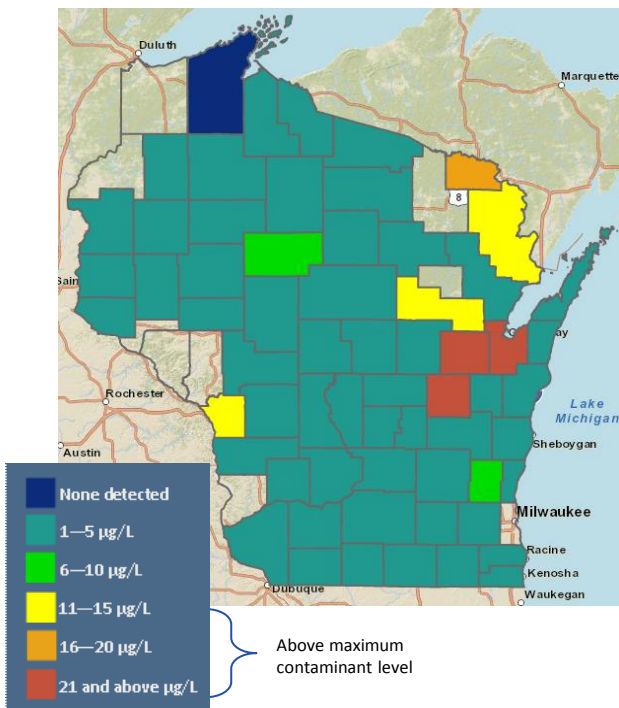
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

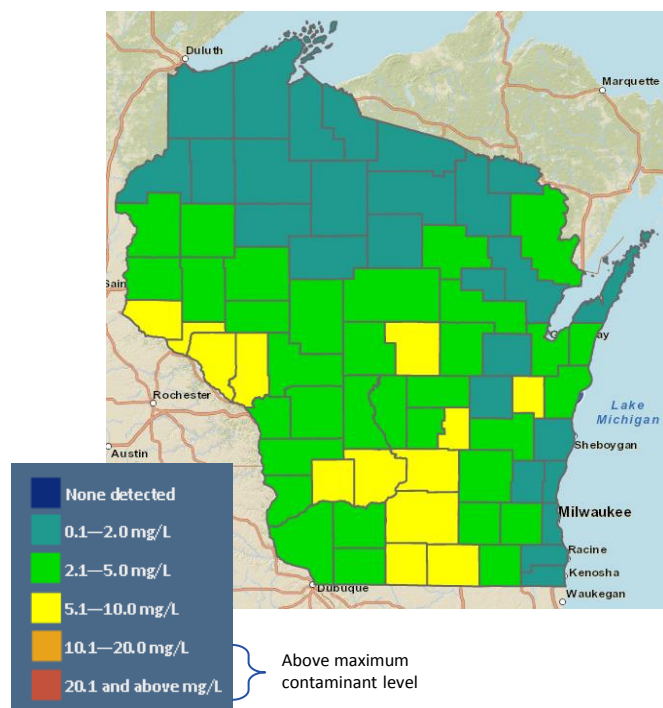
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

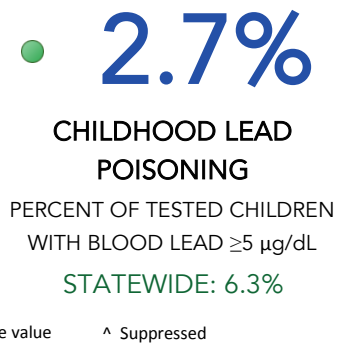
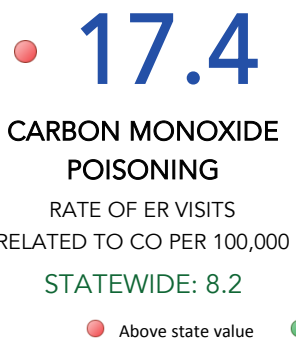


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS IOWA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

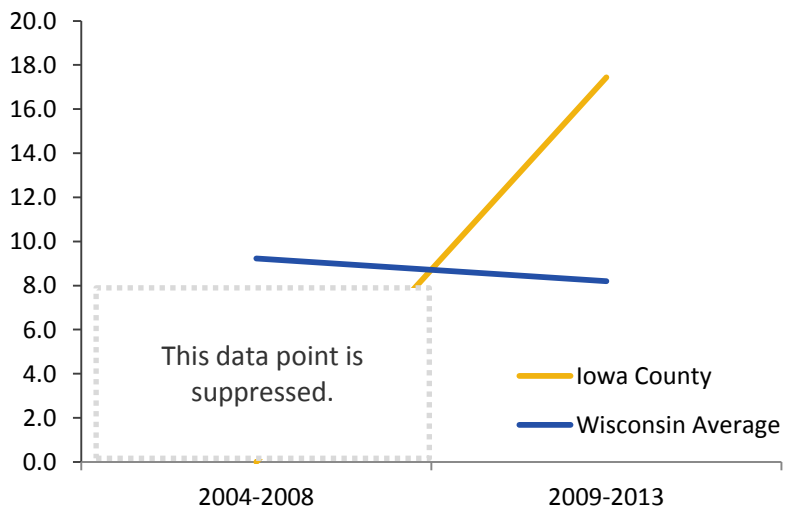


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

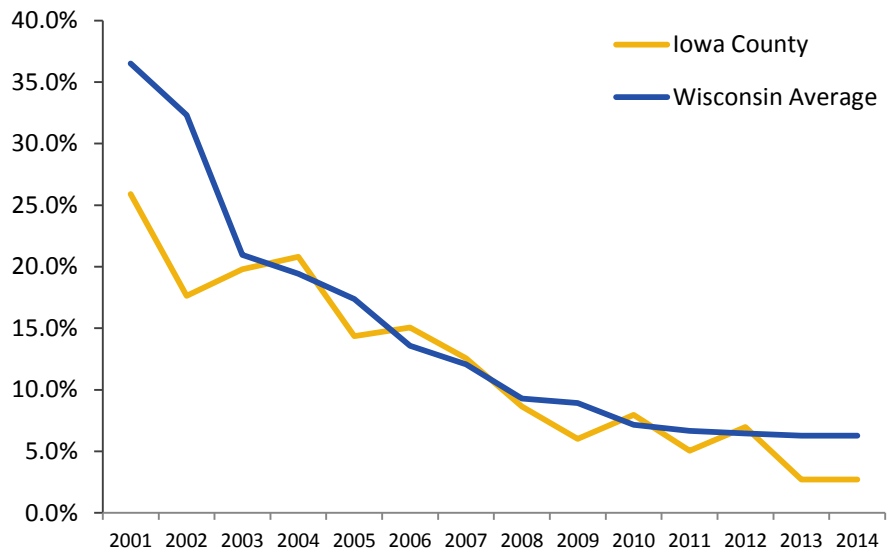
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

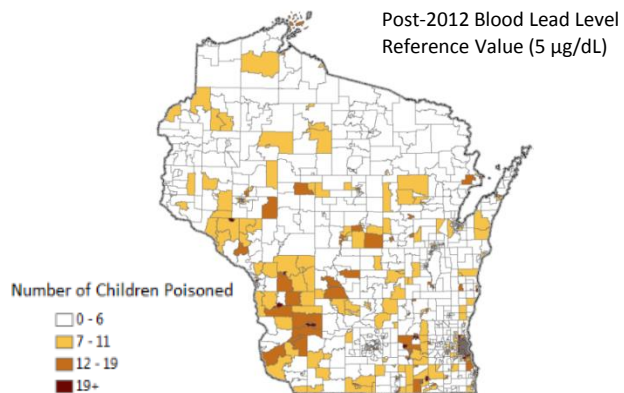
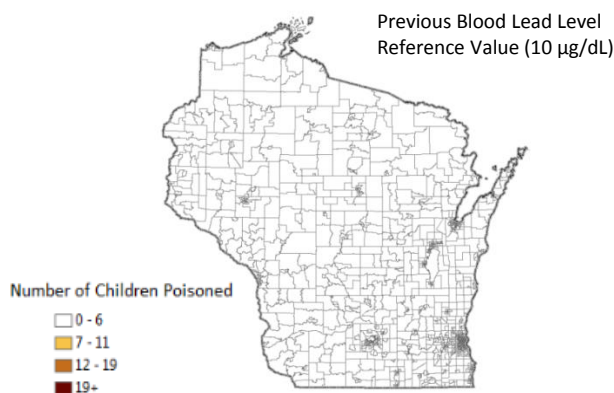
CHILDHOOD LEAD POISONING

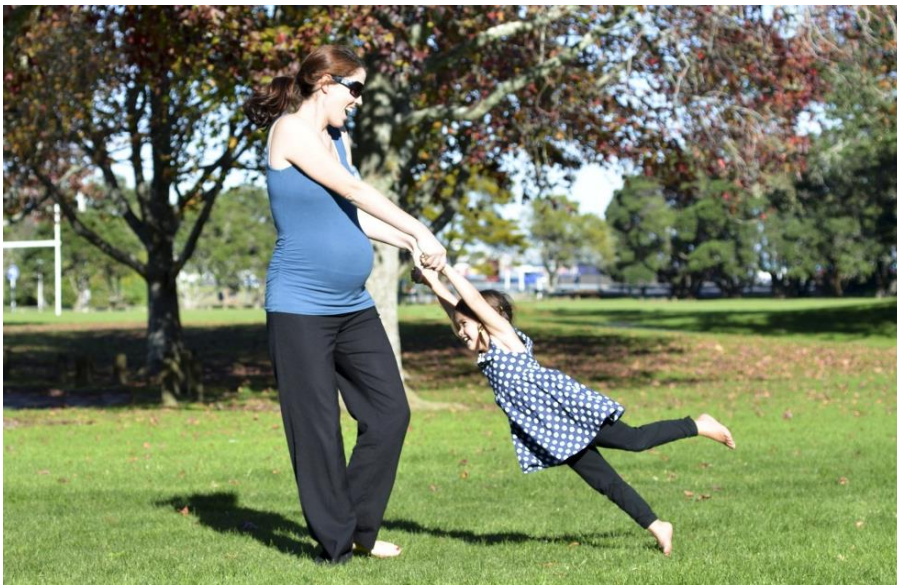
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES IOWA COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.0%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.8%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

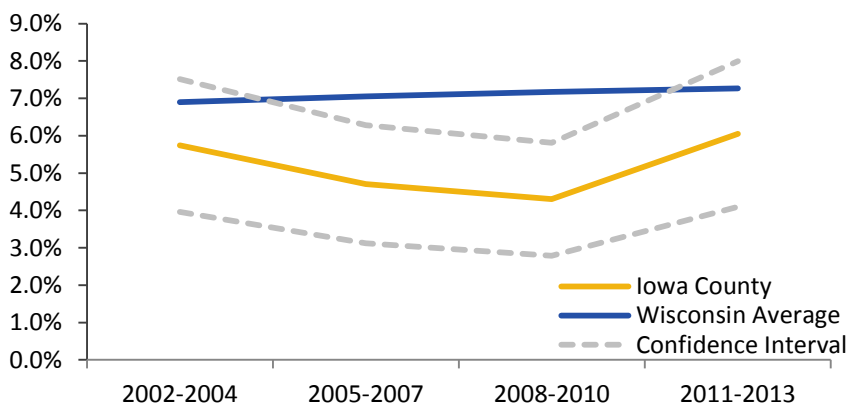
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES IOWA COUNTY

PRETERM BIRTH

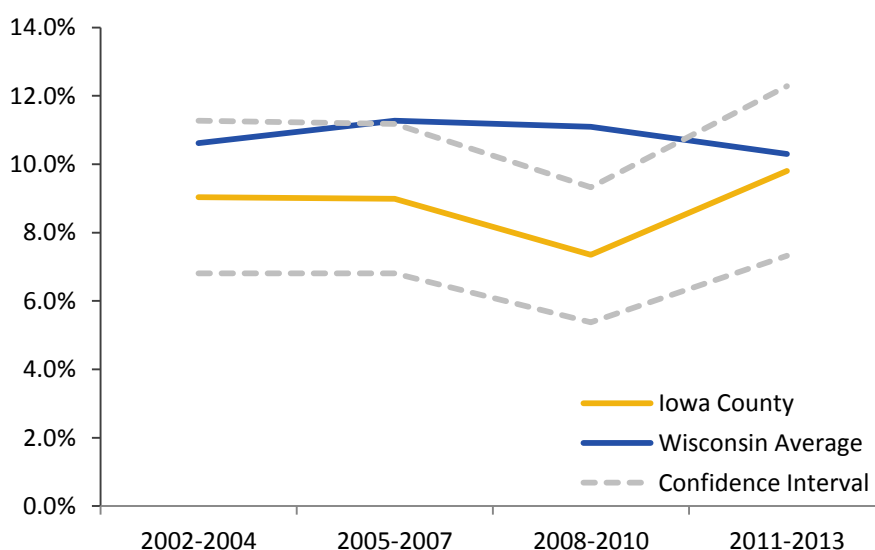
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS IOWA COUNTY

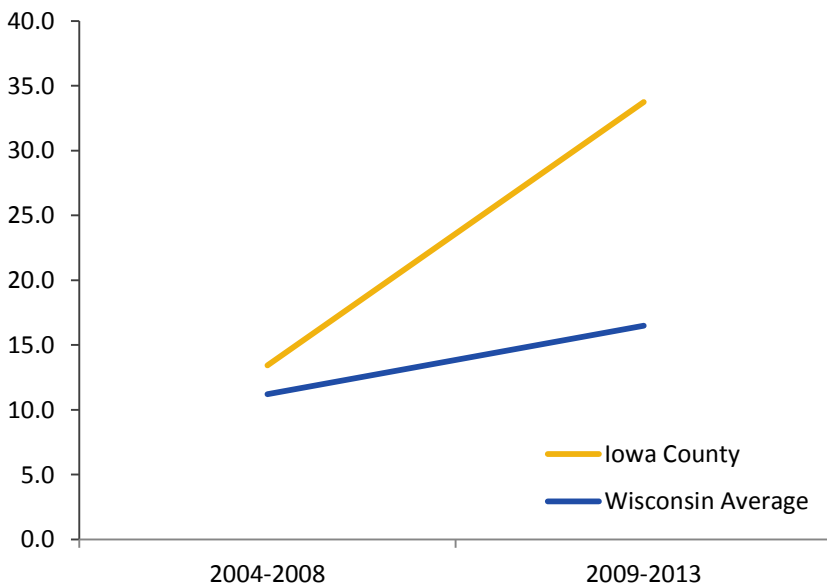
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 33.7</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 21.3</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 51.2</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 218.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



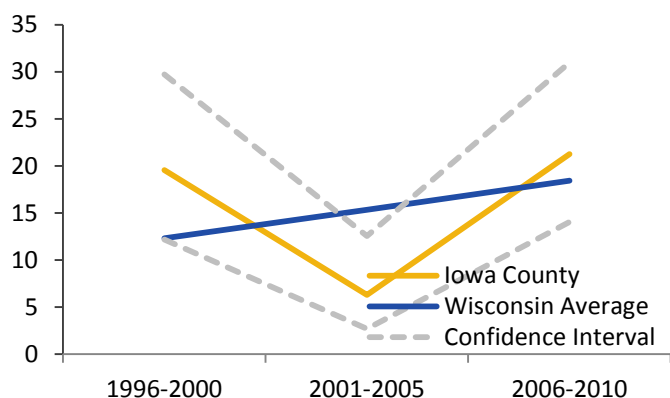


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



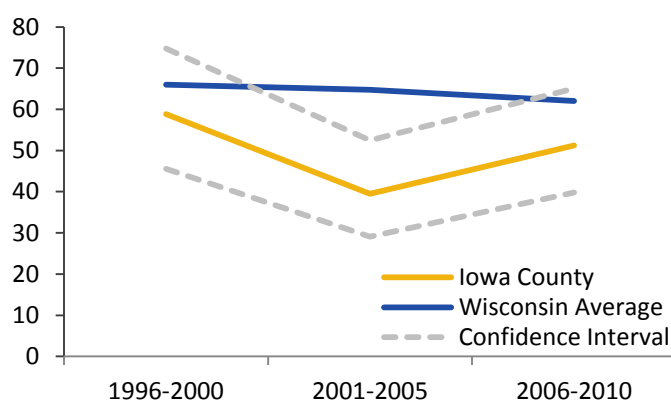
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



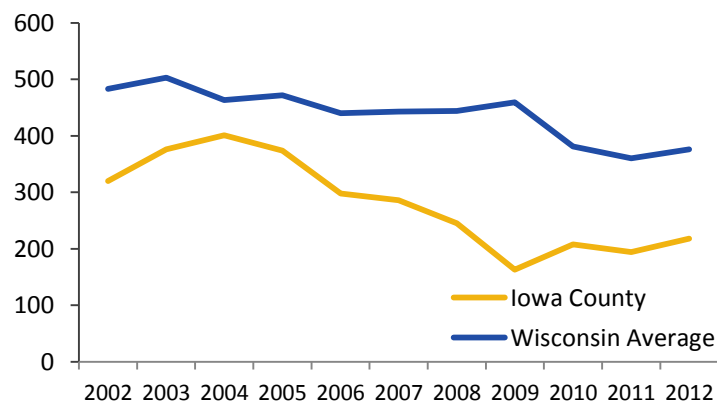
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

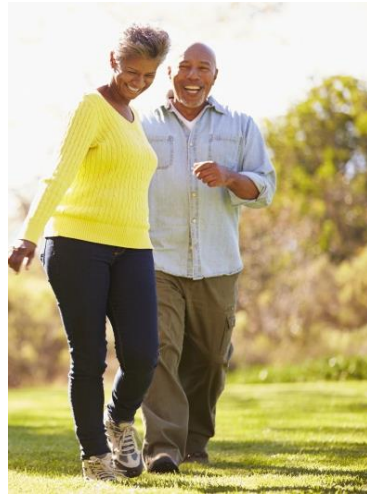
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



IRON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

IRON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.3 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 0.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

^ | Rate of ER visits per 100,000 people
Wisconsin: 8.7

Childhood Lead Poisoning

● 6.3% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

^ | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

^ | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

^ | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

^ | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 78.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

^ | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Due to small numbers, aggregated rates were calculated for this county.
Years displayed in this profile: Aggregated data from 2004-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY IRON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

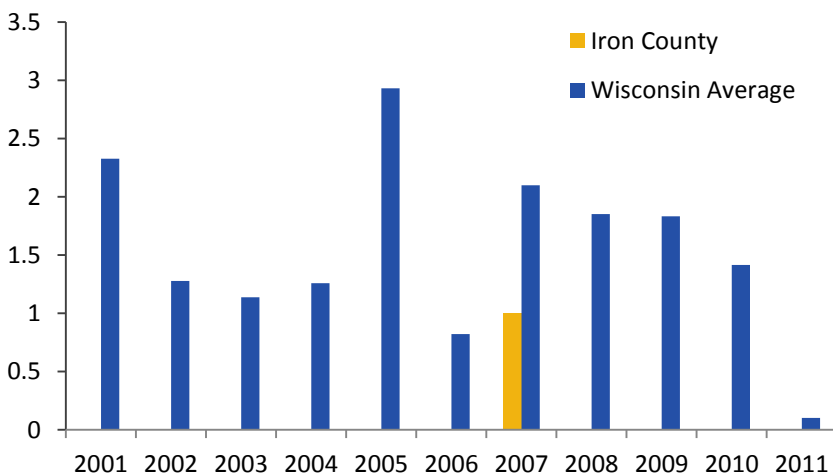
● 7.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

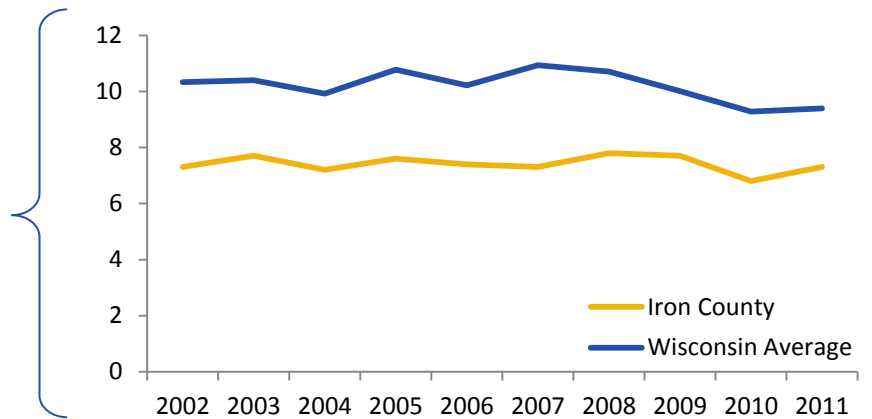
IRON COUNTY

PARTICULATE MATTER 2.5

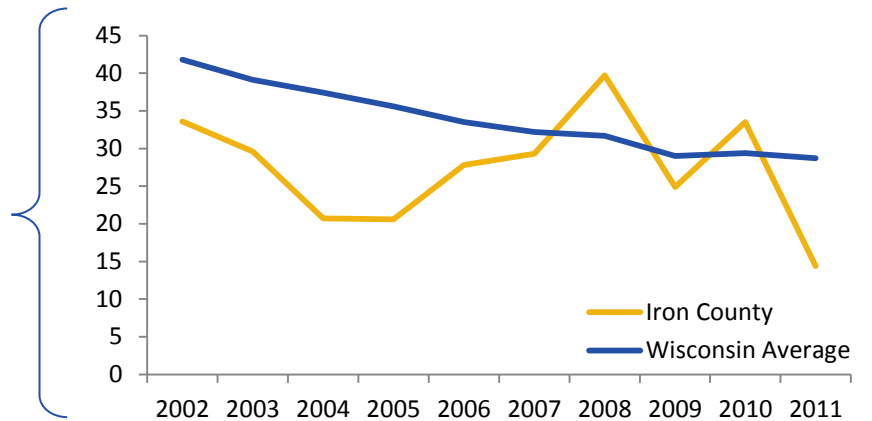
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

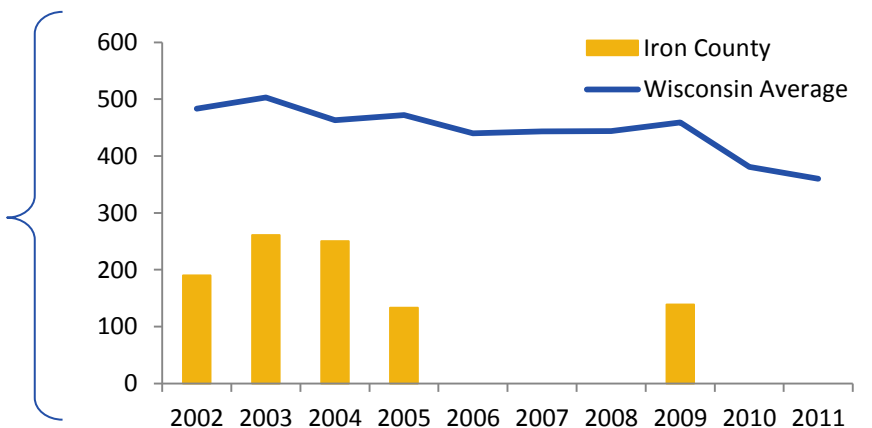
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



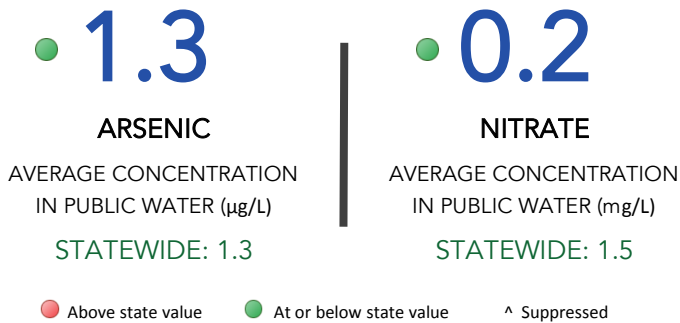
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY IRON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

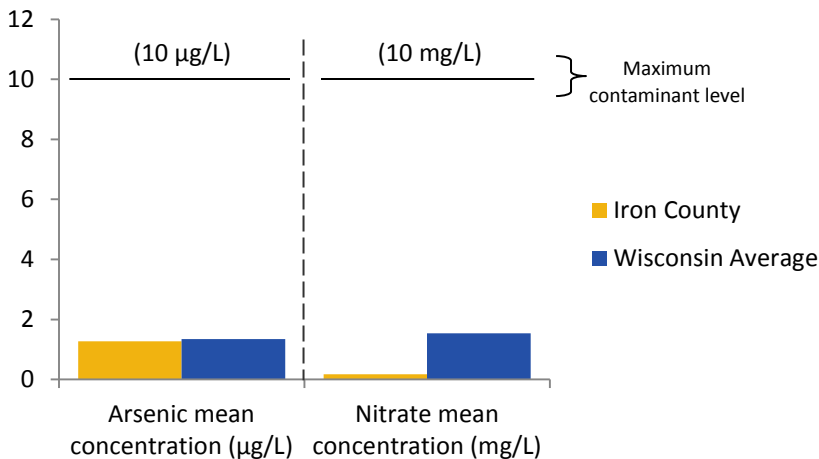
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY IRON COUNTY

PRIVATE DRINKING WATER

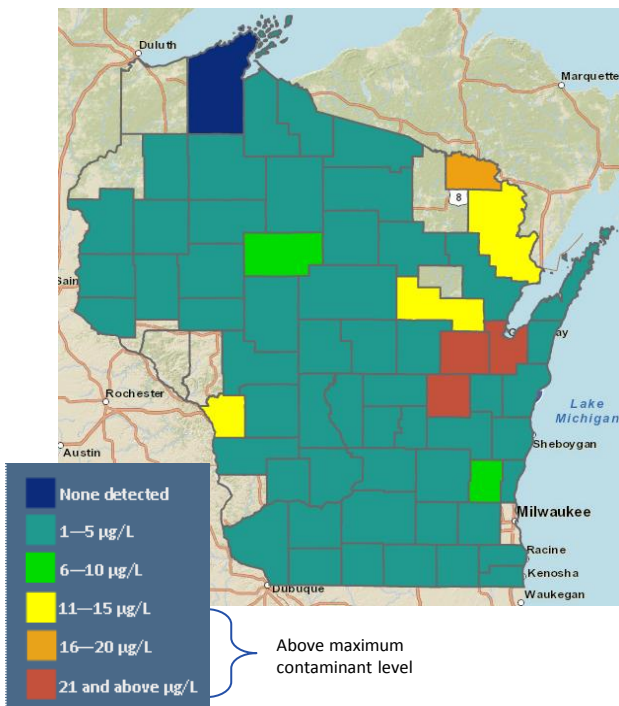
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

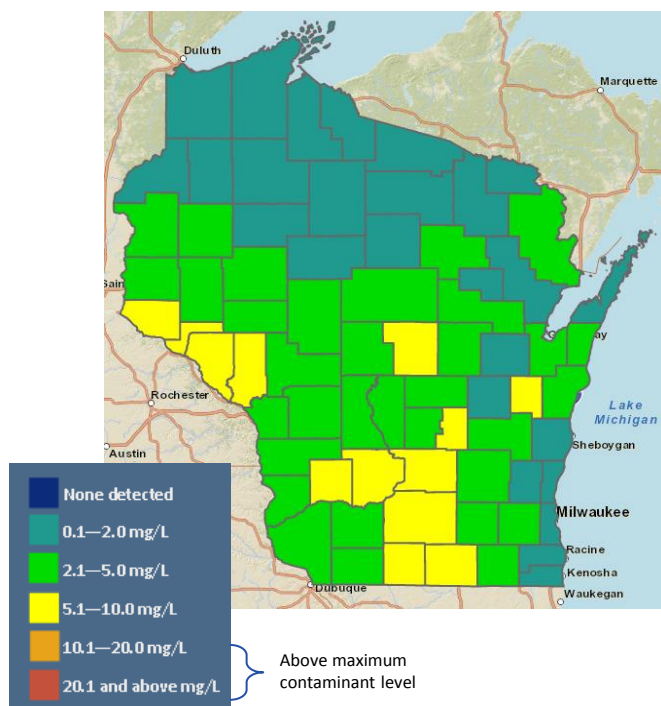
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

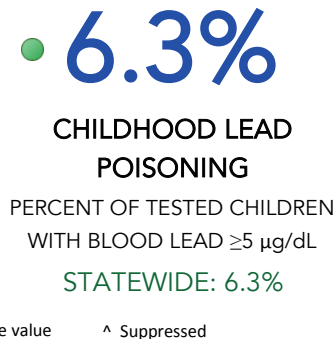
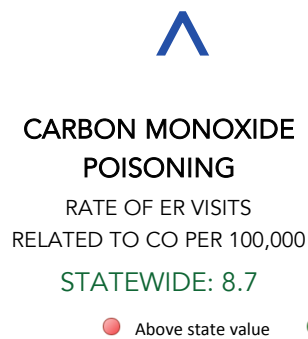


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS IRON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

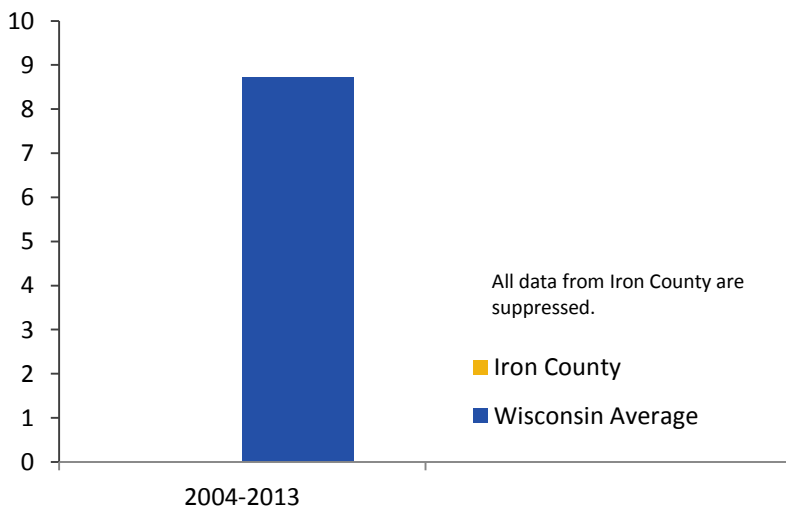


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

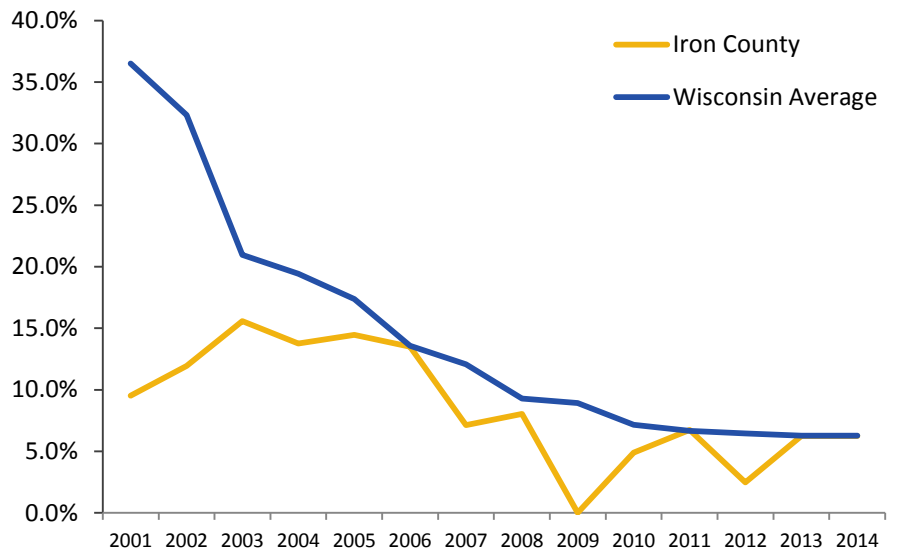
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

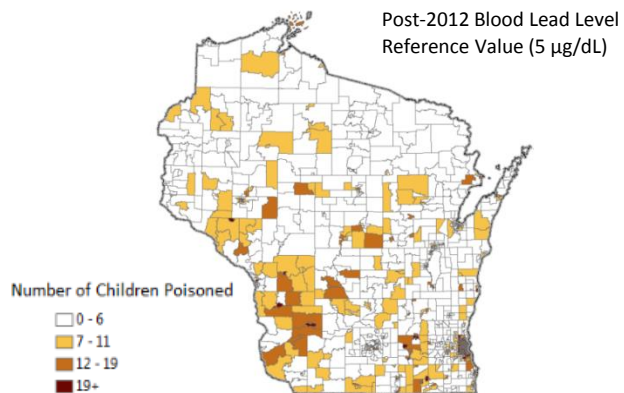
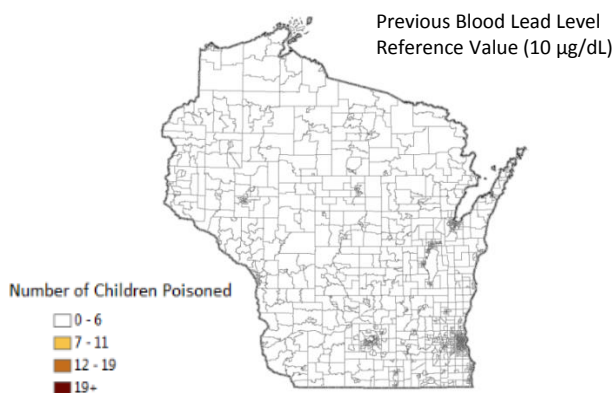
CHILDHOOD LEAD POISONING

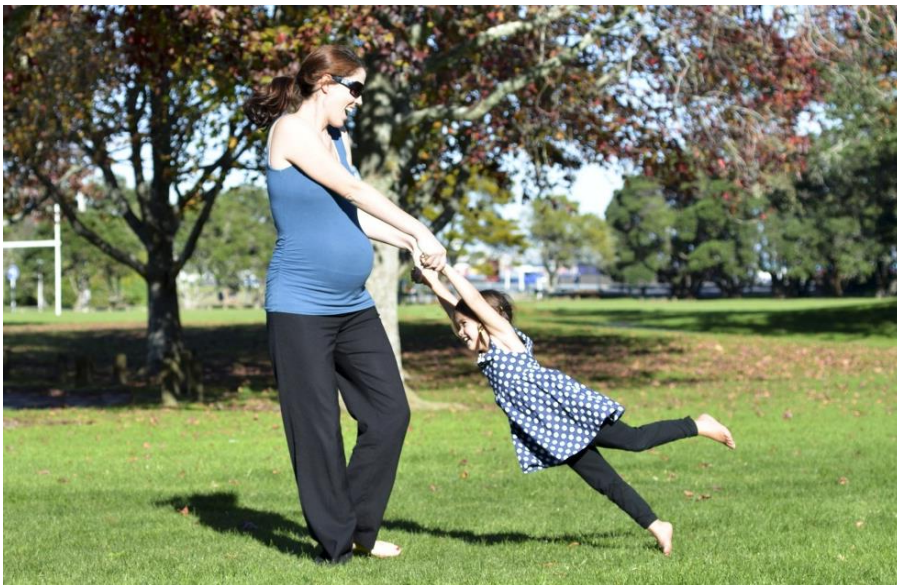
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

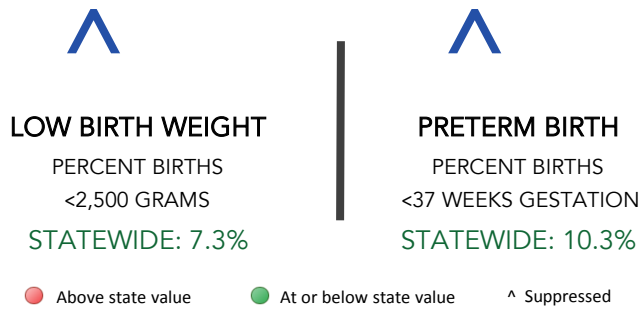
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES IRON COUNTY

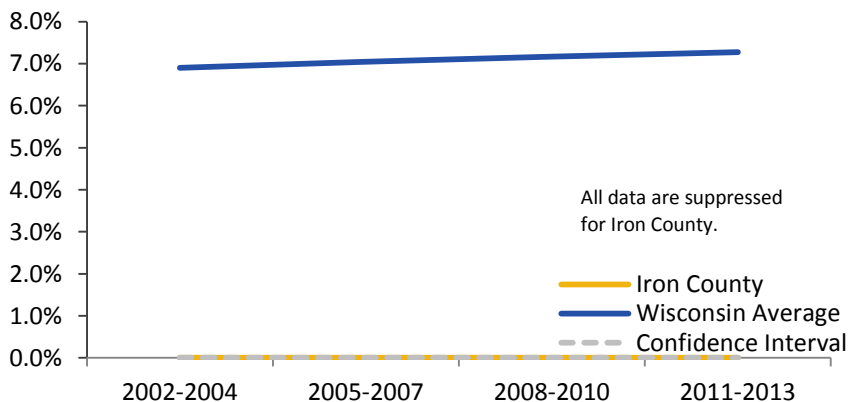
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES IRON COUNTY

PRETERM BIRTH

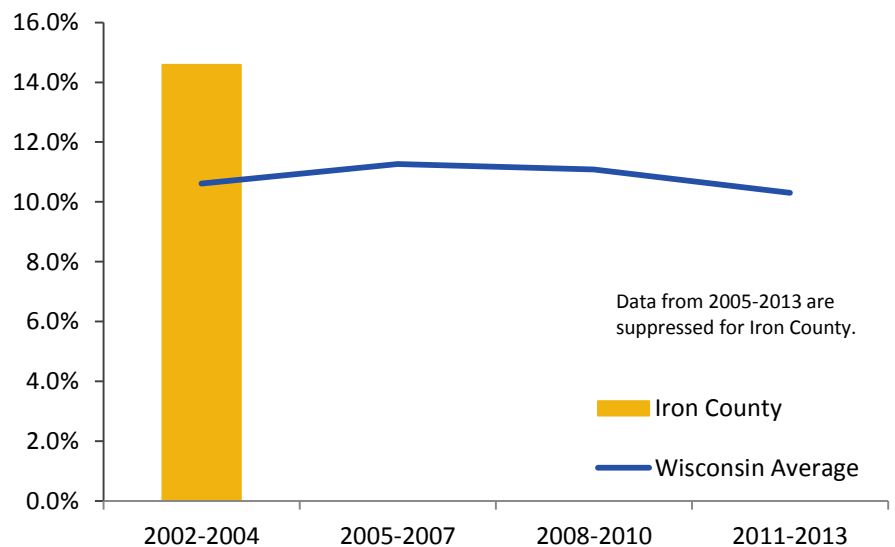
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS IRON COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5



MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

78.8

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

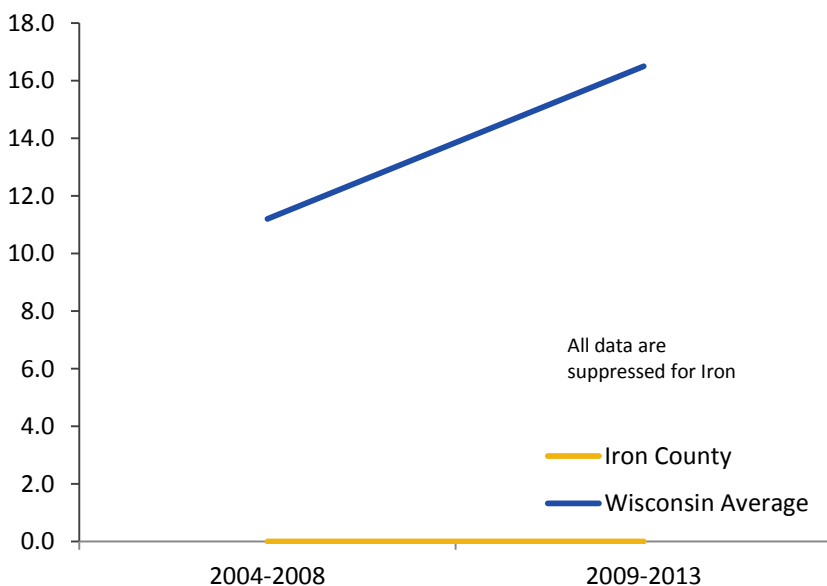


ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



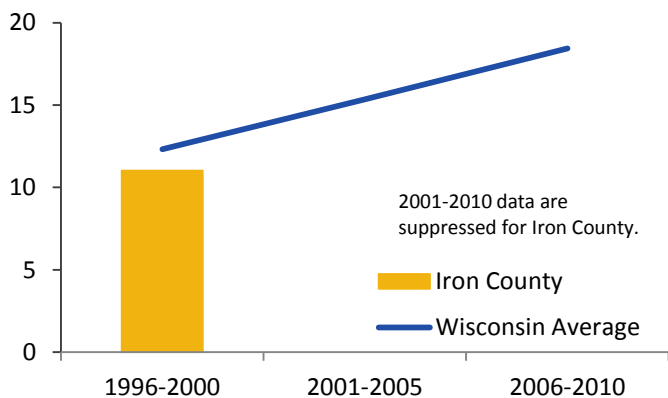


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



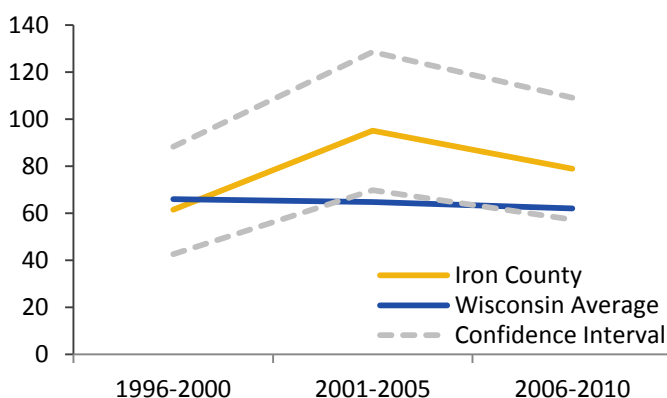
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



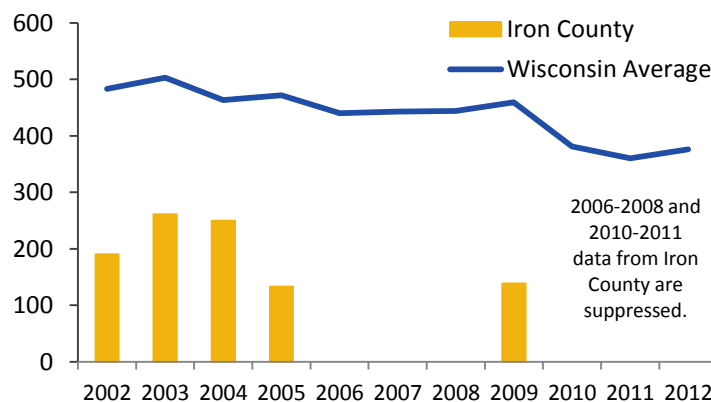
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data aggregated from 2004-2013 displayed on the dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. Due to small numbers, aggregated rates were calculated for this county.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



JACKSON COUNTY ENVIRONMENTAL HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



JACKSON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 29.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.0% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 41.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 14.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 57.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 359.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY JACKSON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

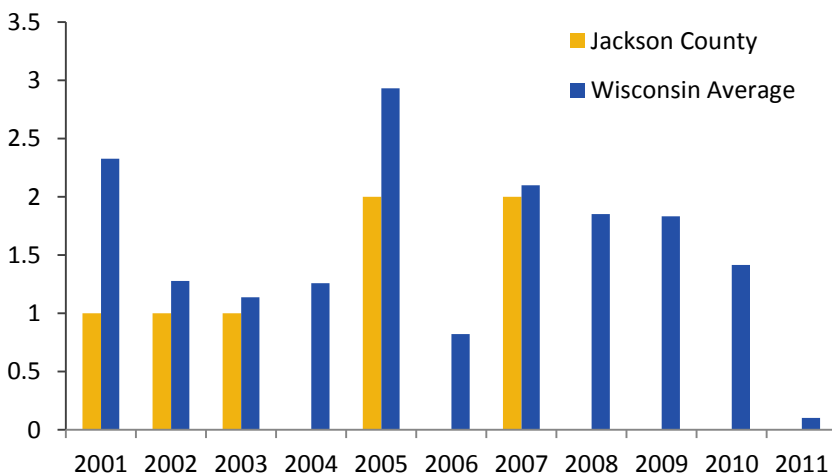
● 9.1

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

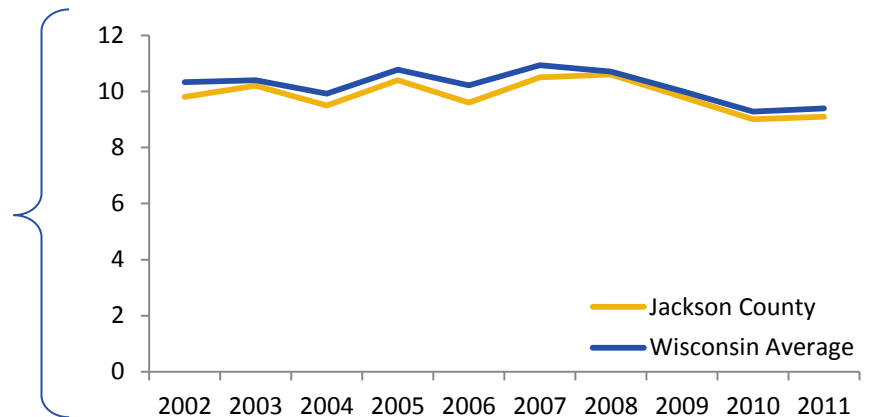
JACKSON COUNTY

PARTICULATE MATTER 2.5

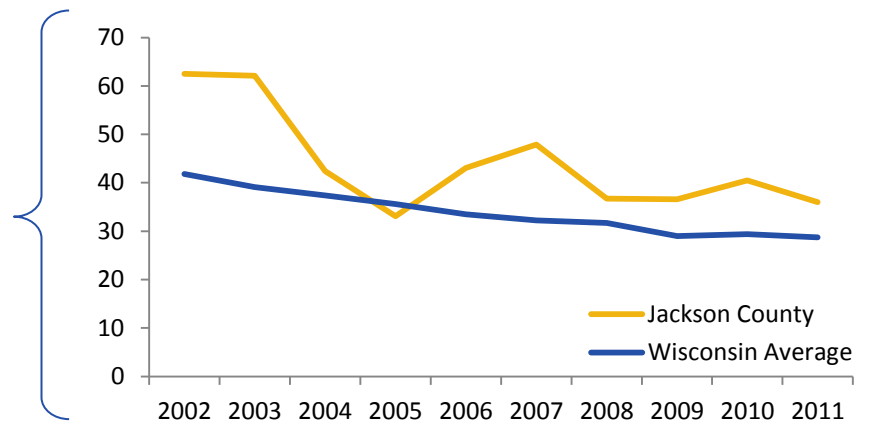
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

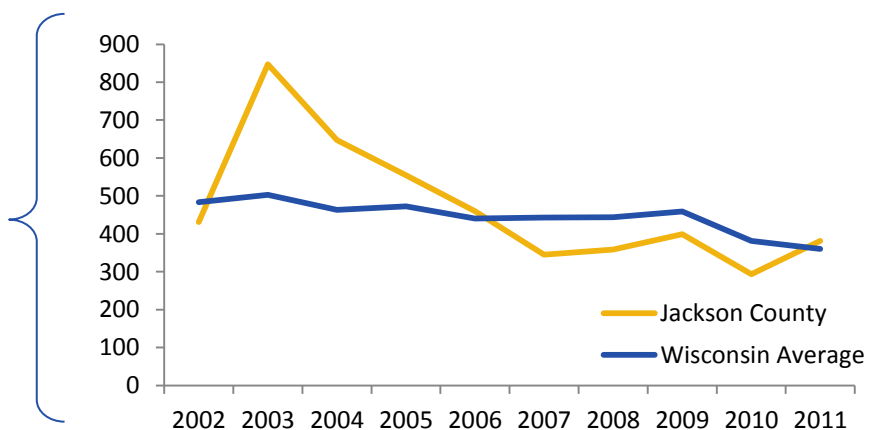
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



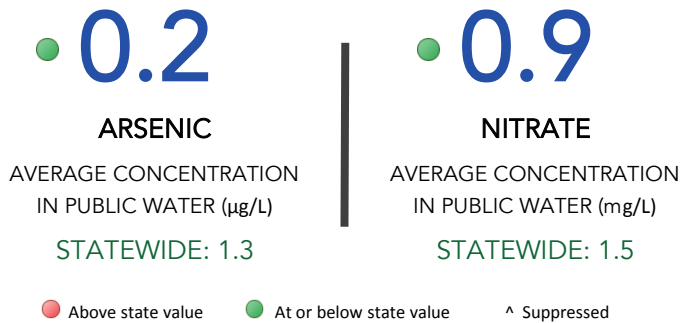
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY JACKSON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

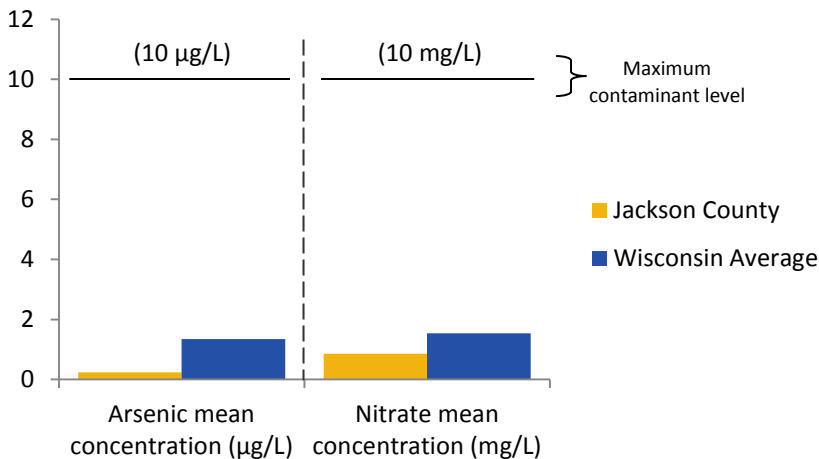
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY JACKSON COUNTY

PRIVATE DRINKING WATER

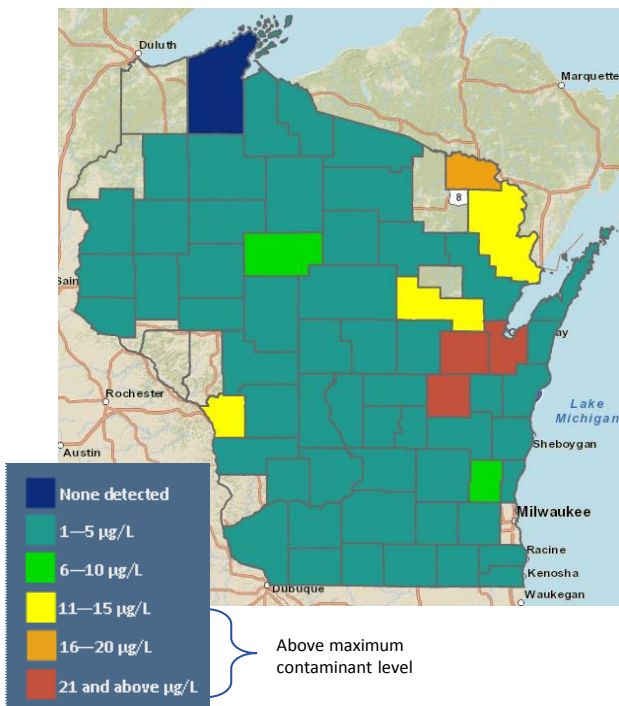
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

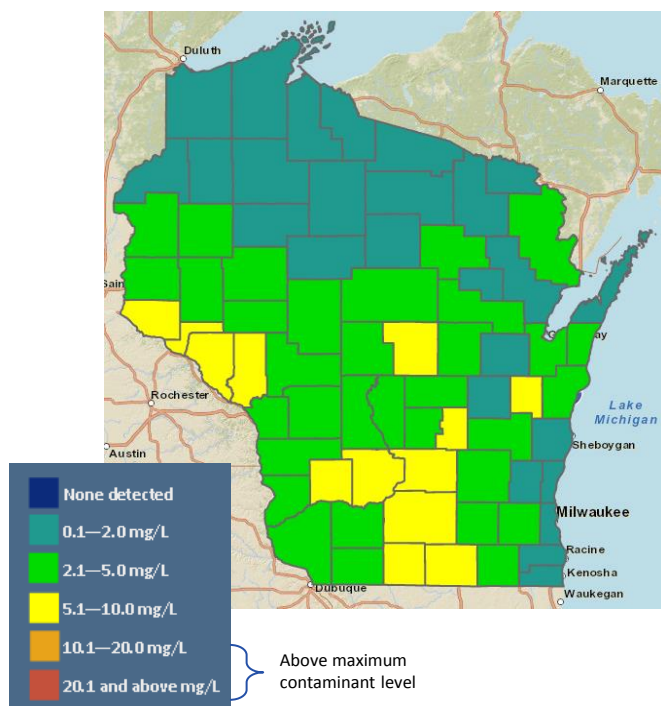
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

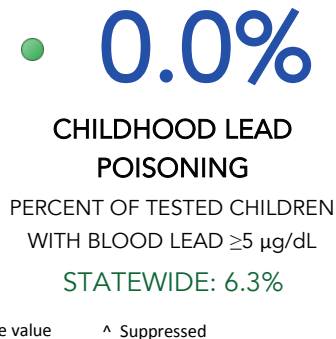
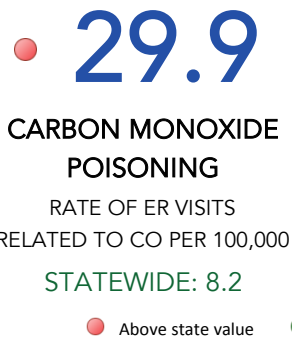


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS JACKSON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

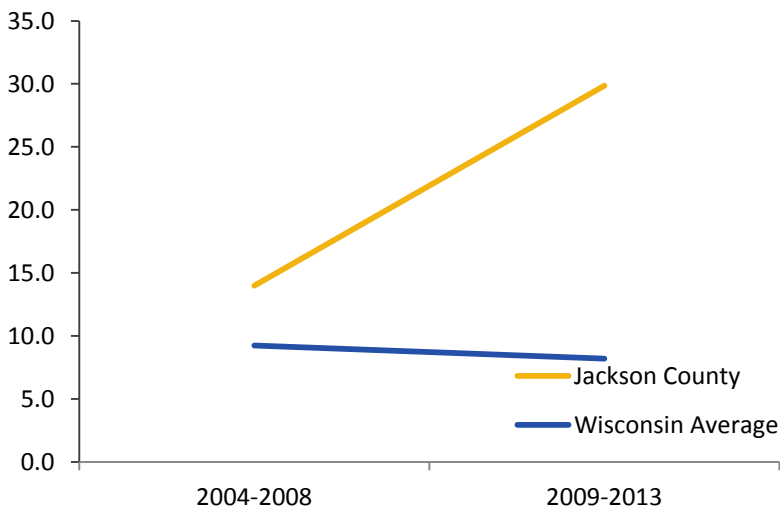


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



HOME HAZARDS JACKSON COUNTY

CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

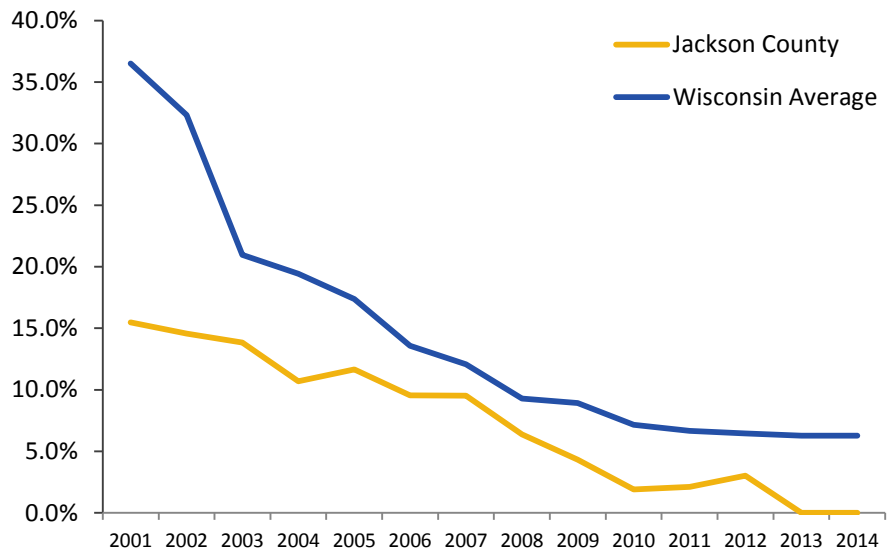
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

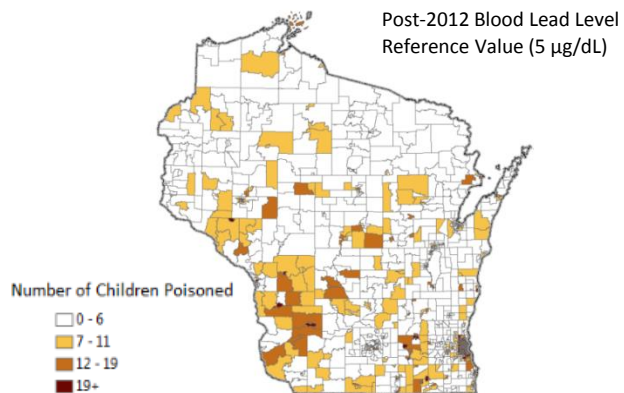
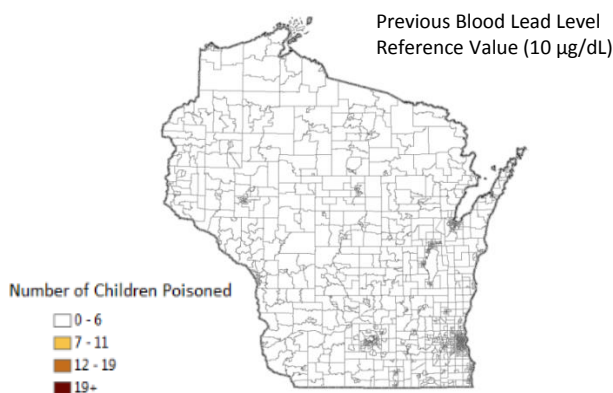
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

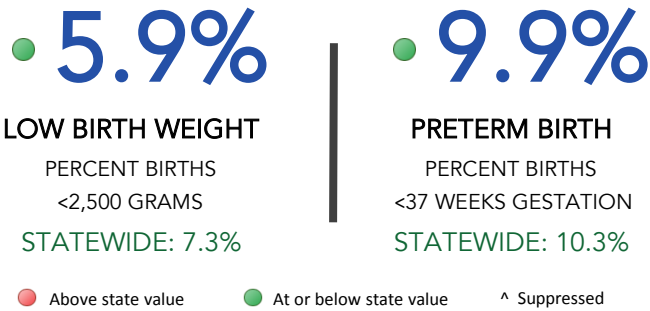
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES JACKSON COUNTY

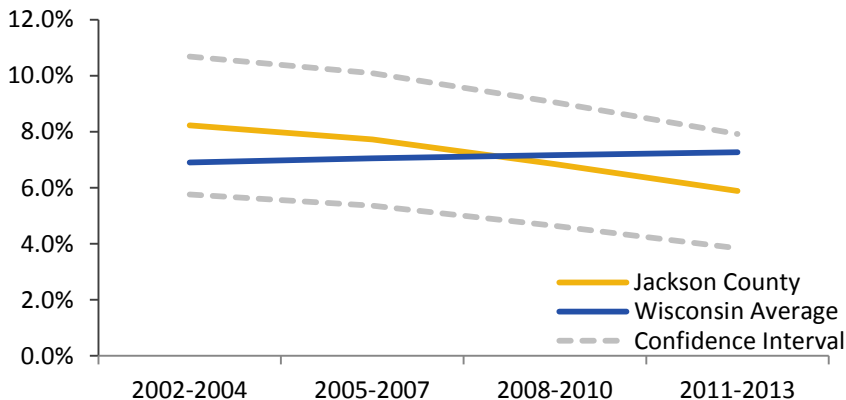
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES JACKSON COUNTY

PRETERM BIRTH

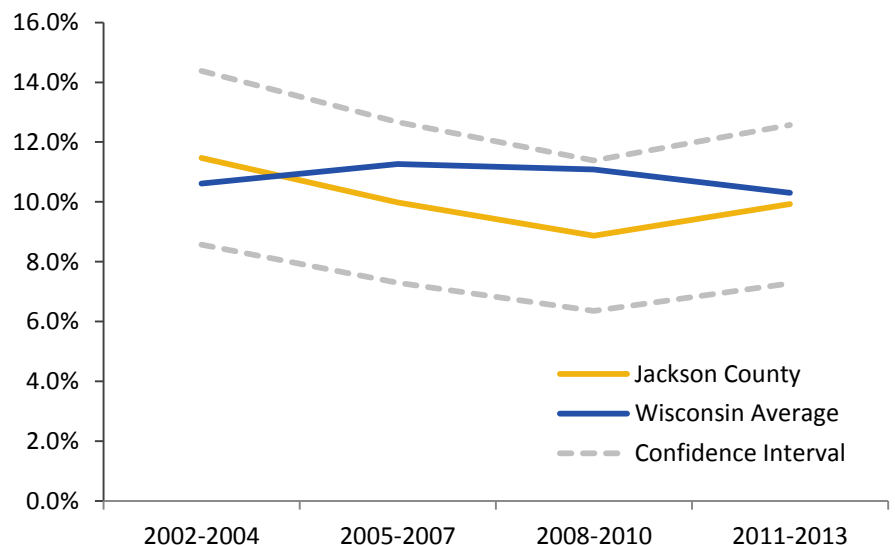
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

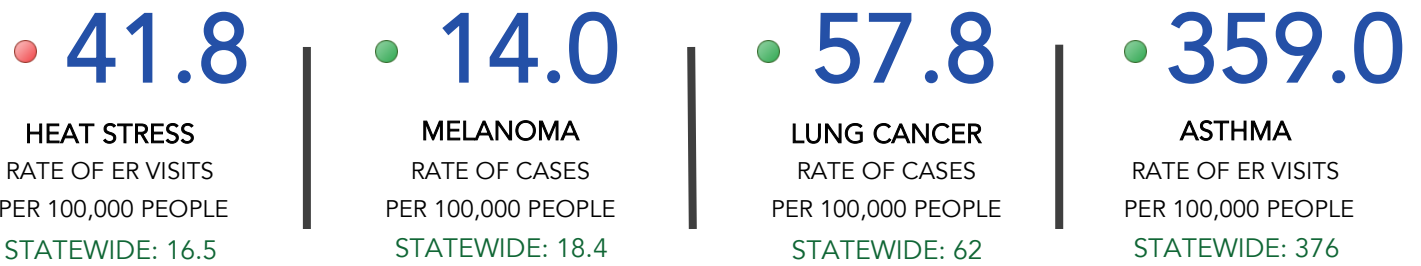
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS JACKSON COUNTY

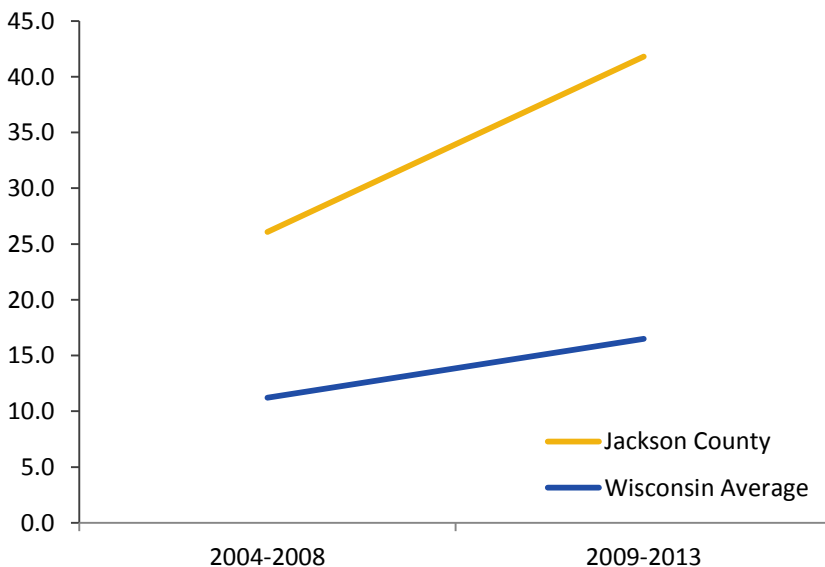
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



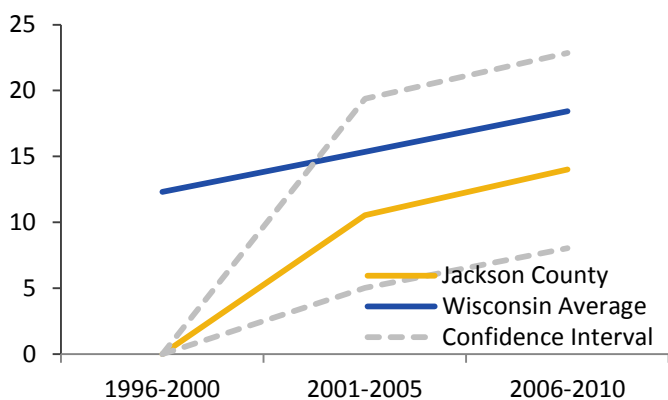


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



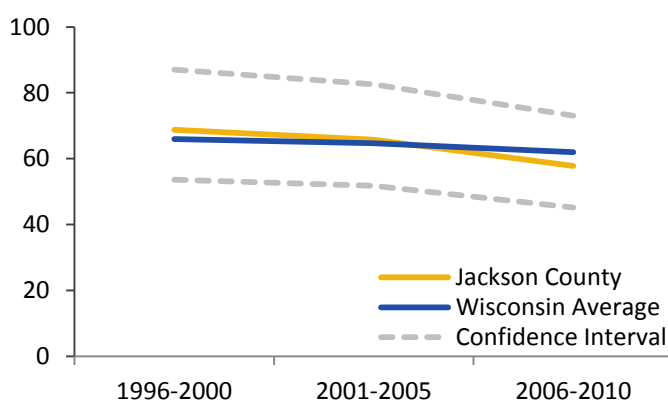
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



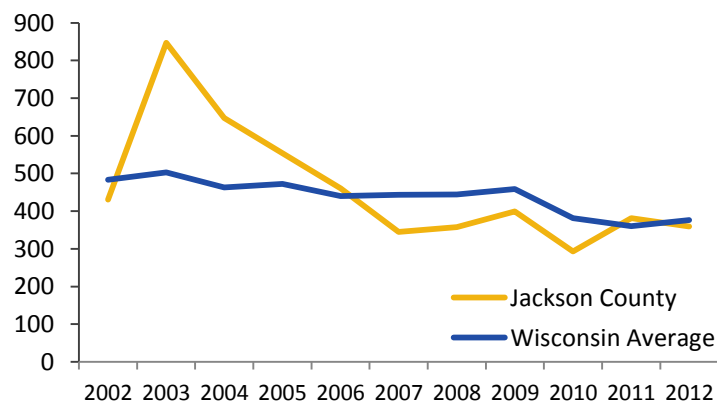
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



JEFFERSON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



JEFFERSON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 9.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.7% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 17.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 12.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 56.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 316.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY JEFFERSON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

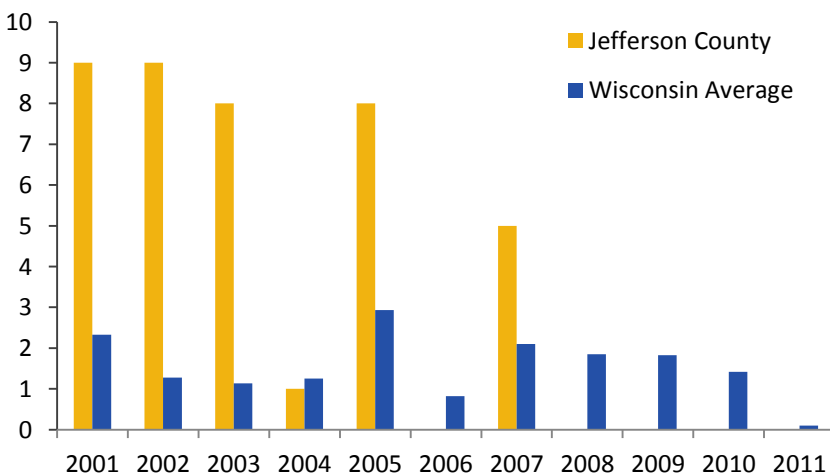
● 10.8

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

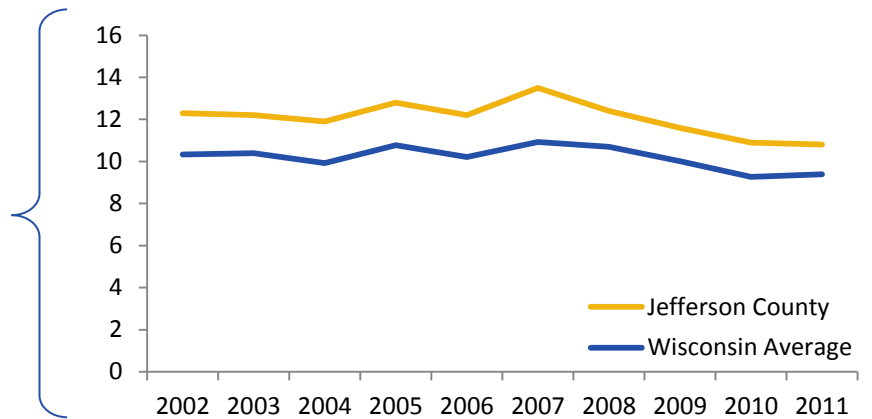
JEFFERSON COUNTY

PARTICULATE MATTER 2.5

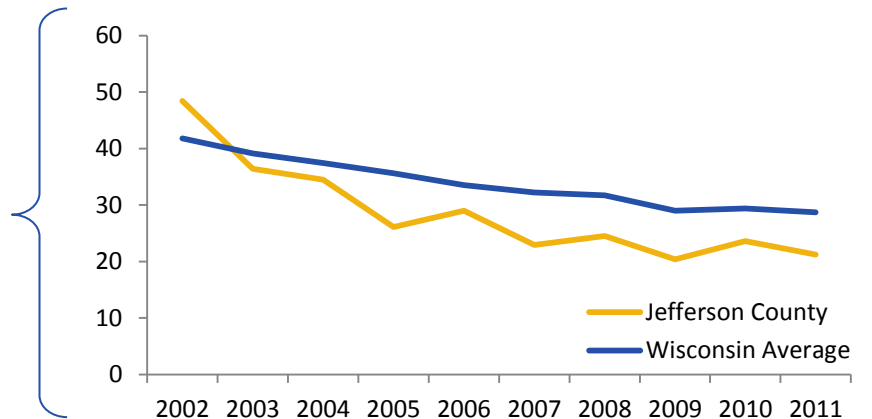
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

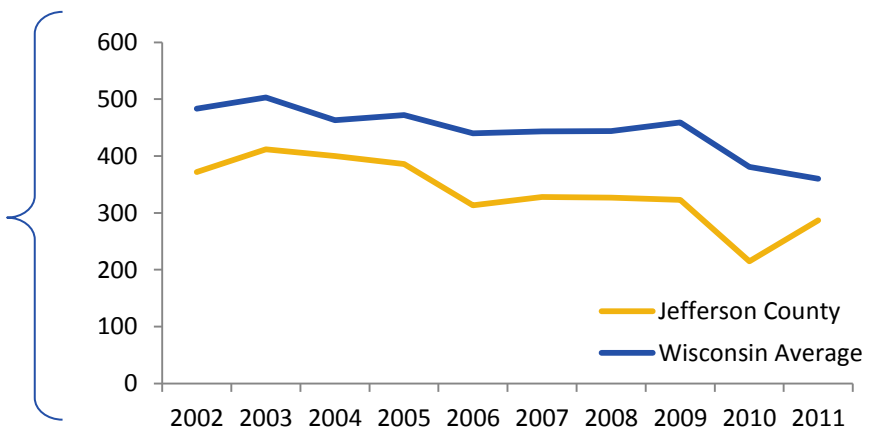
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



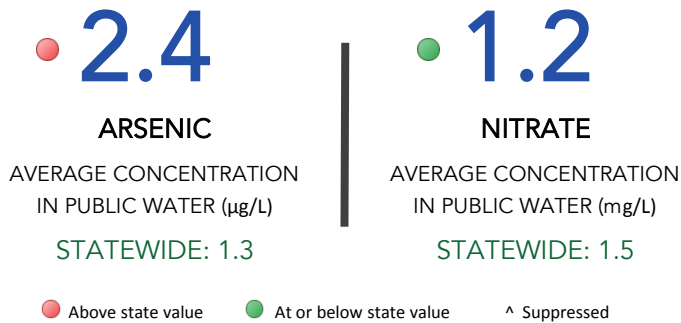
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY JEFFERSON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

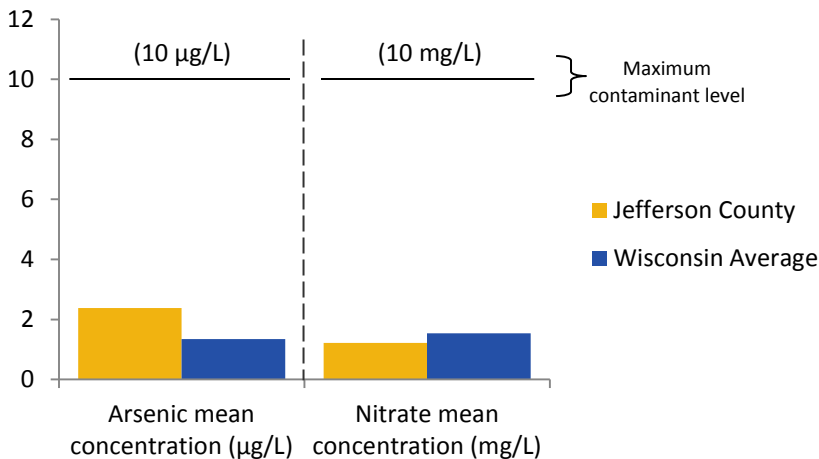
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY JEFFERSON COUNTY

PRIVATE DRINKING WATER

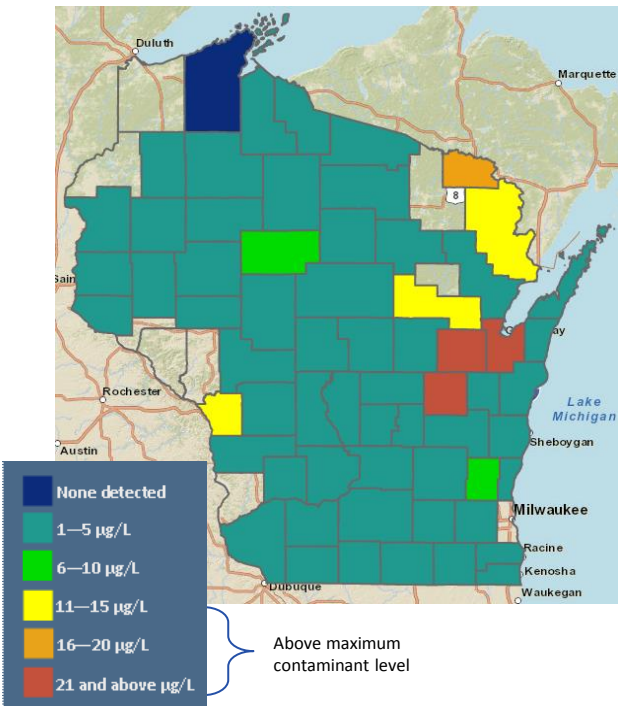
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

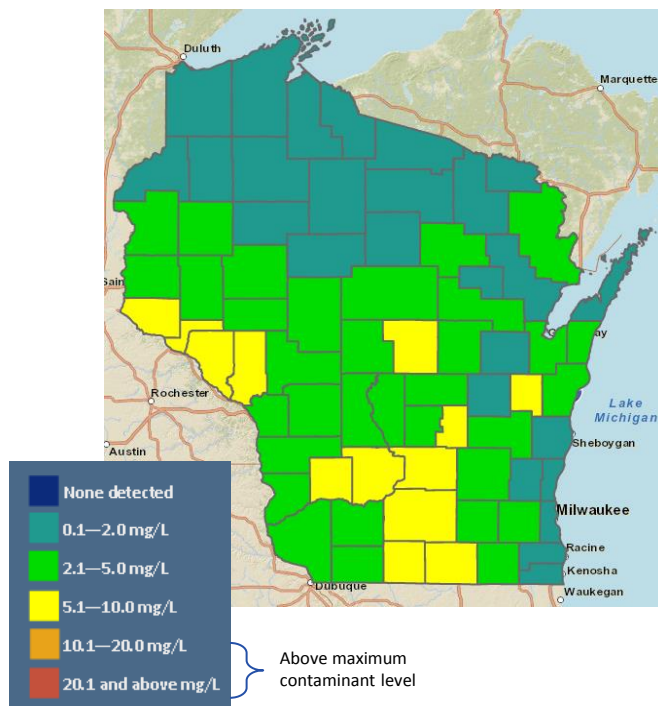
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS JEFFERSON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

9.1
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

4.7%
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

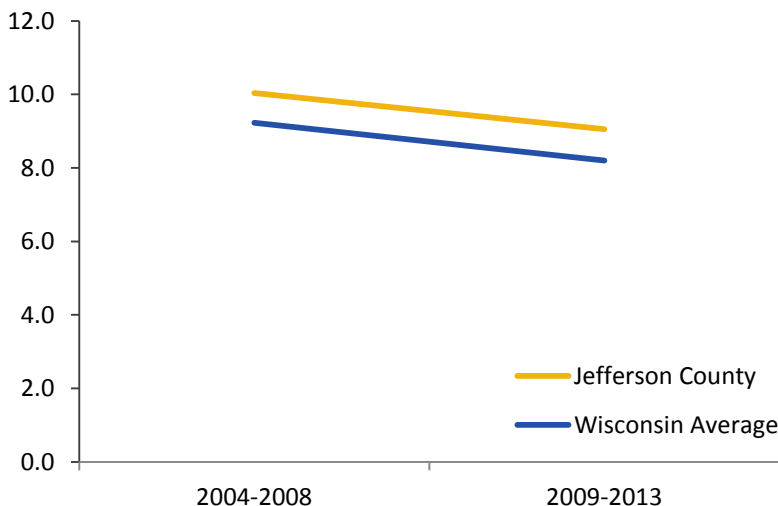
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

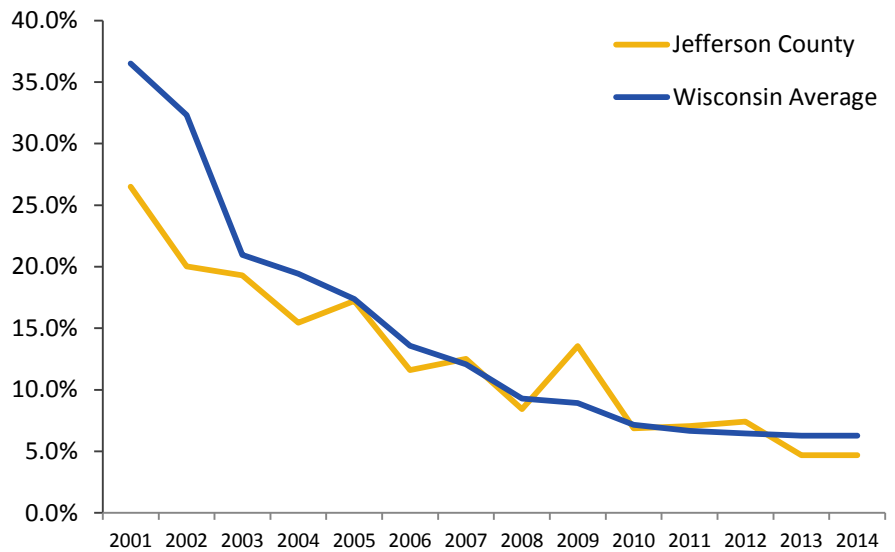
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

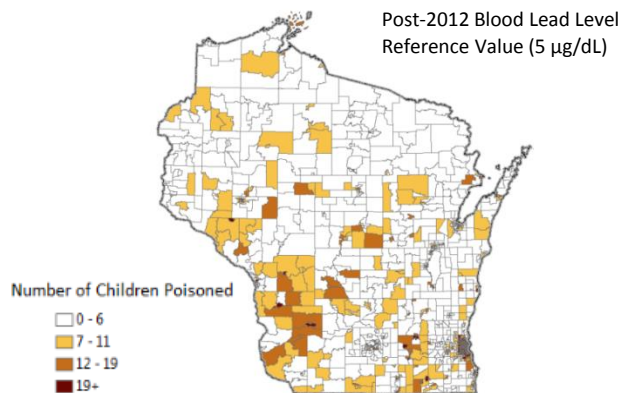
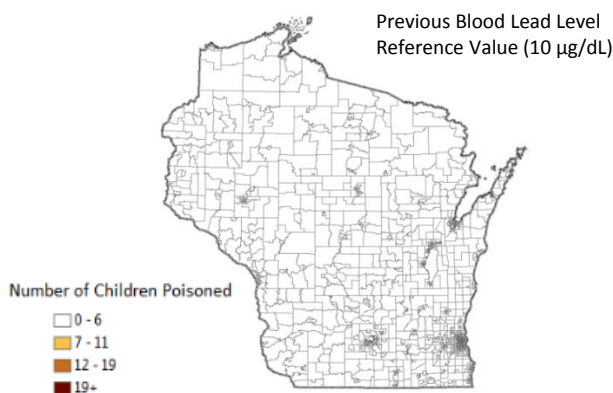
CHILDHOOD LEAD POISONING

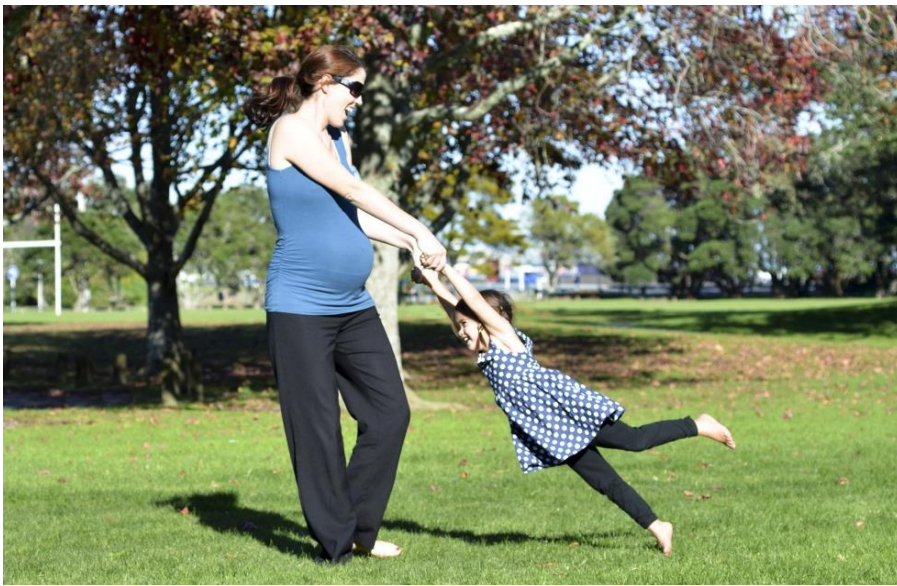
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

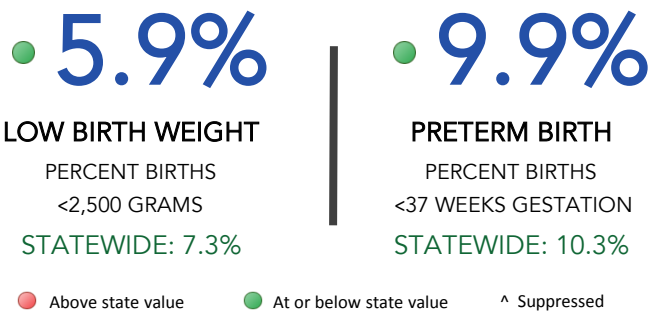
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES JEFFERSON COUNTY

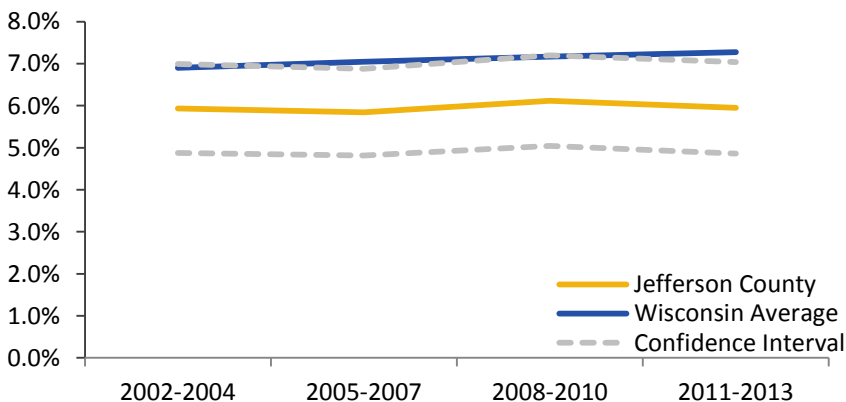
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

JEFFERSON COUNTY

PRETERM BIRTH

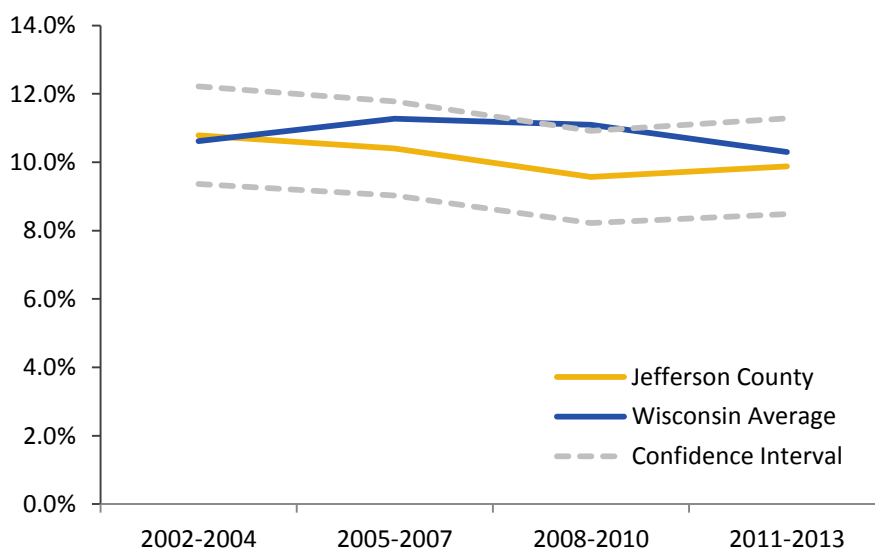
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

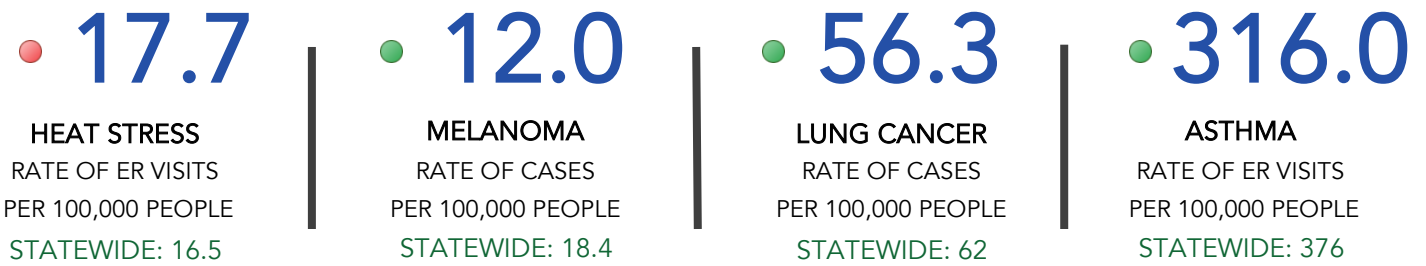
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS JEFFERSON COUNTY

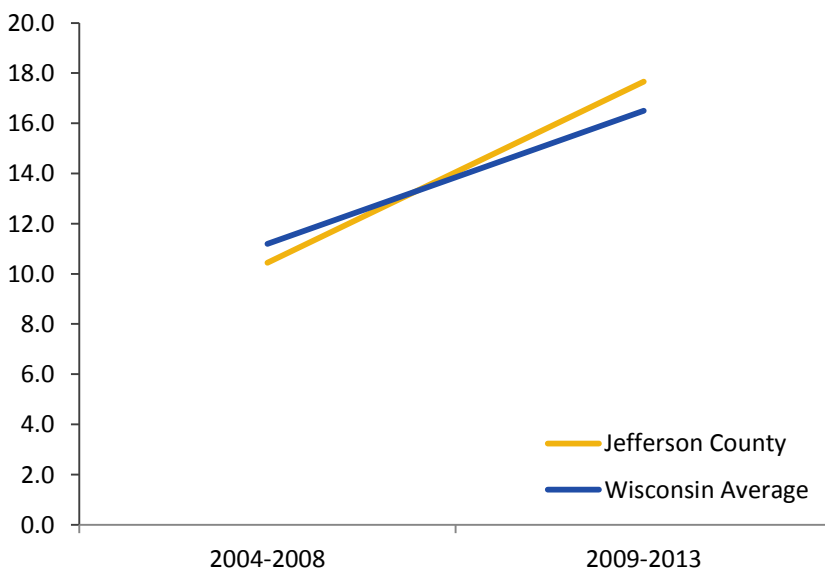
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



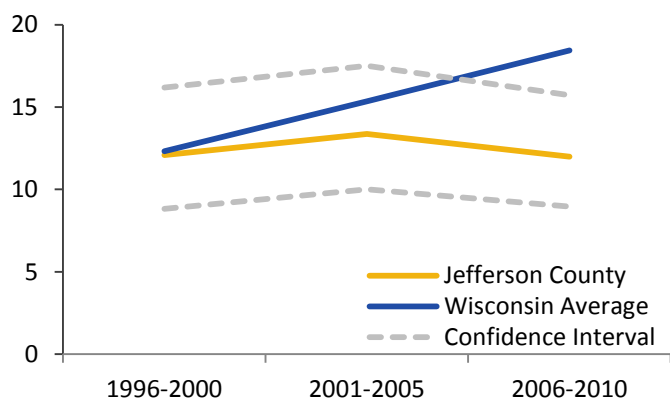


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



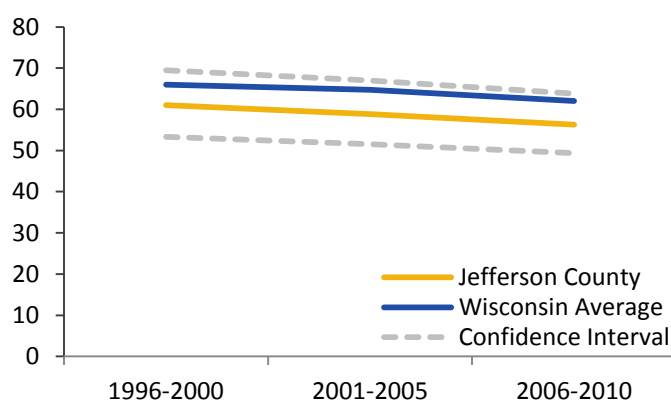
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



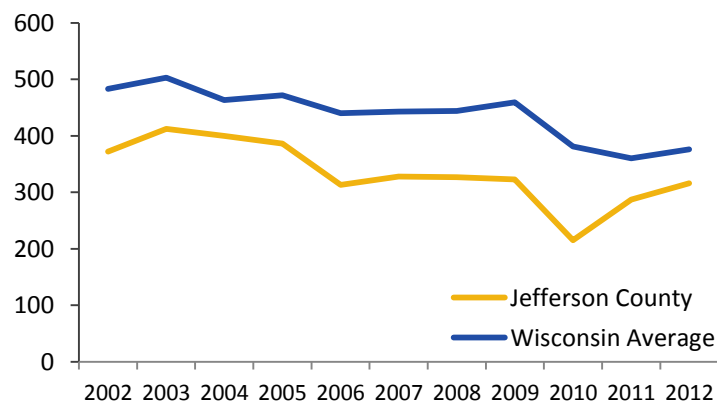
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

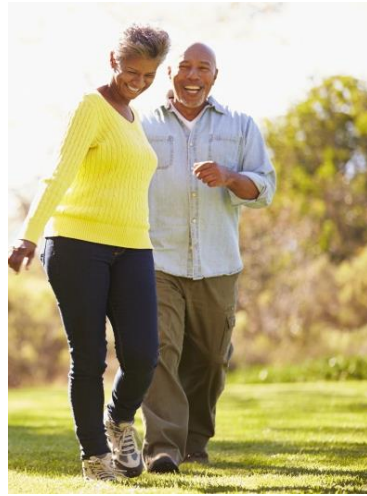
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



JUNEAU COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

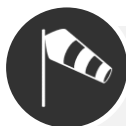
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



JUNEAU COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.0 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.0% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 48.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 13.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 78.9 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 331.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY JUNEAU COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

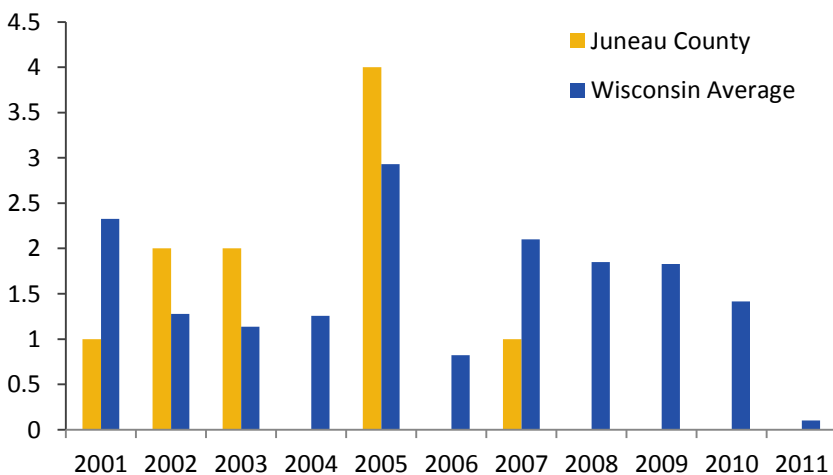
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **9.6**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

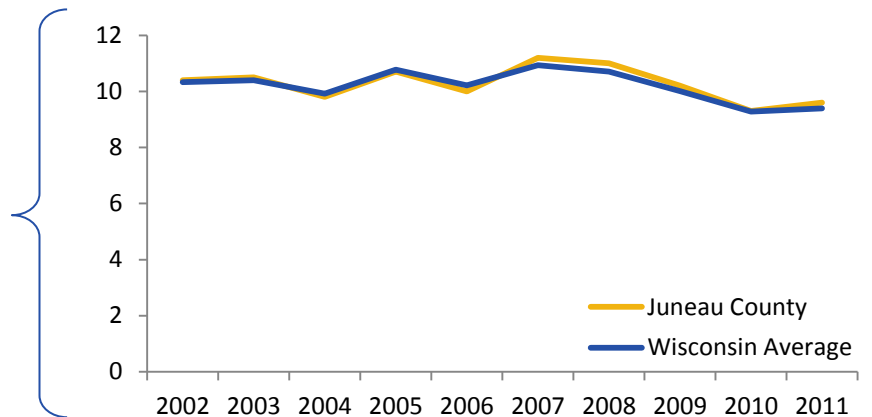
JUNEAU COUNTY

PARTICULATE MATTER 2.5

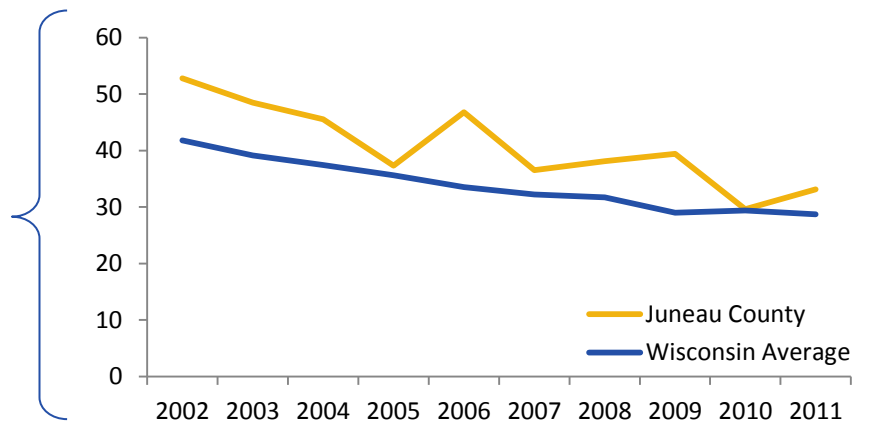
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

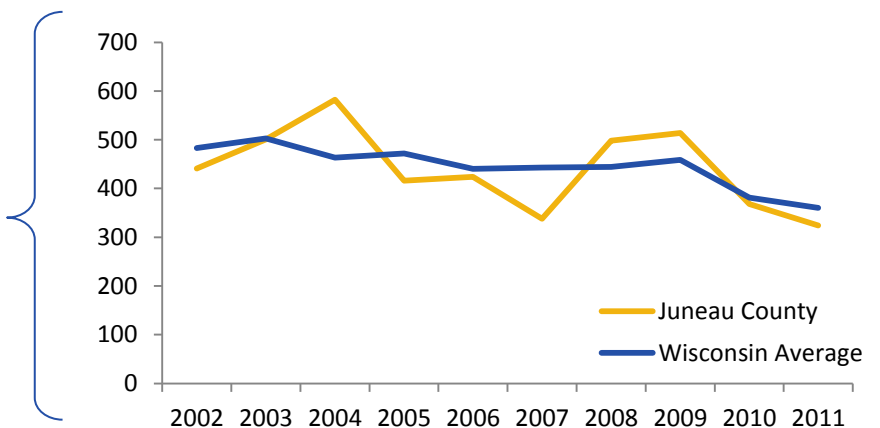
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



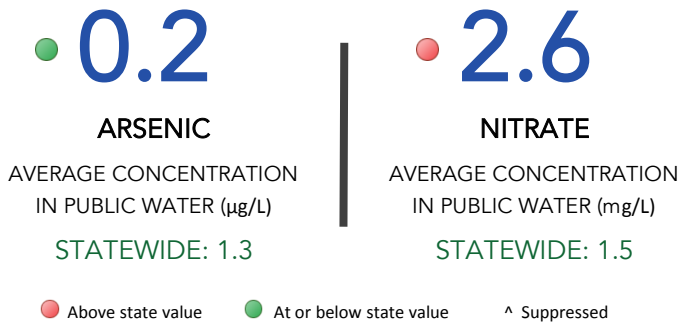
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY JUNEAU COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

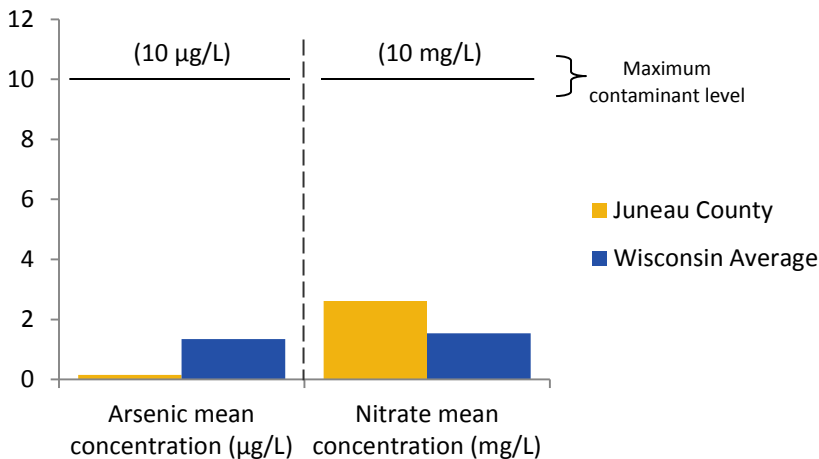
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY JUNEAU COUNTY

PRIVATE DRINKING WATER

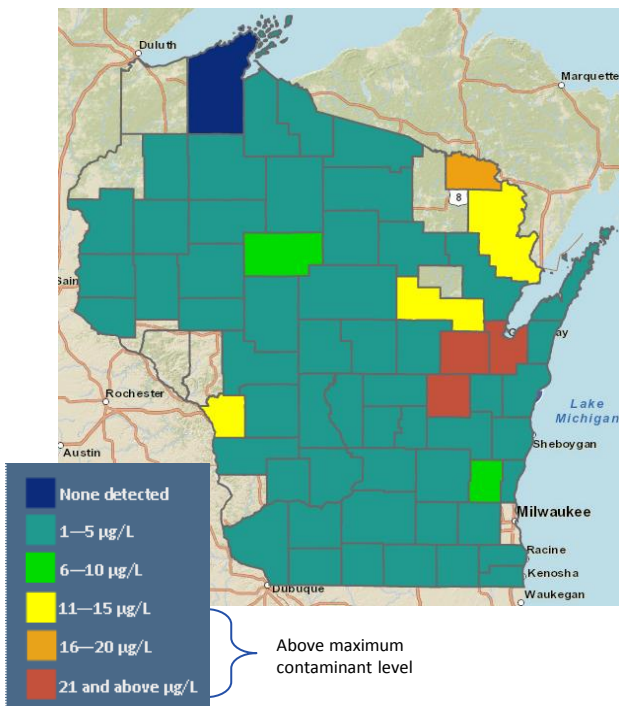
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

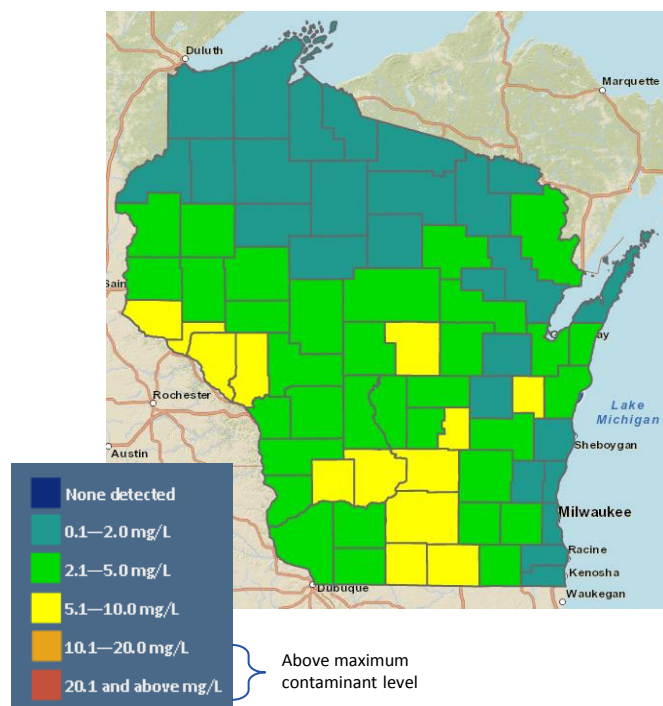
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS JUNEAU COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **10.0**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **3.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

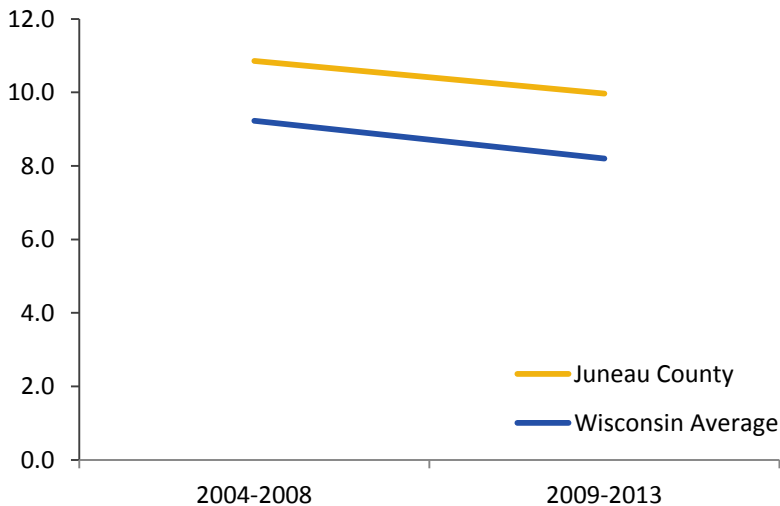
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

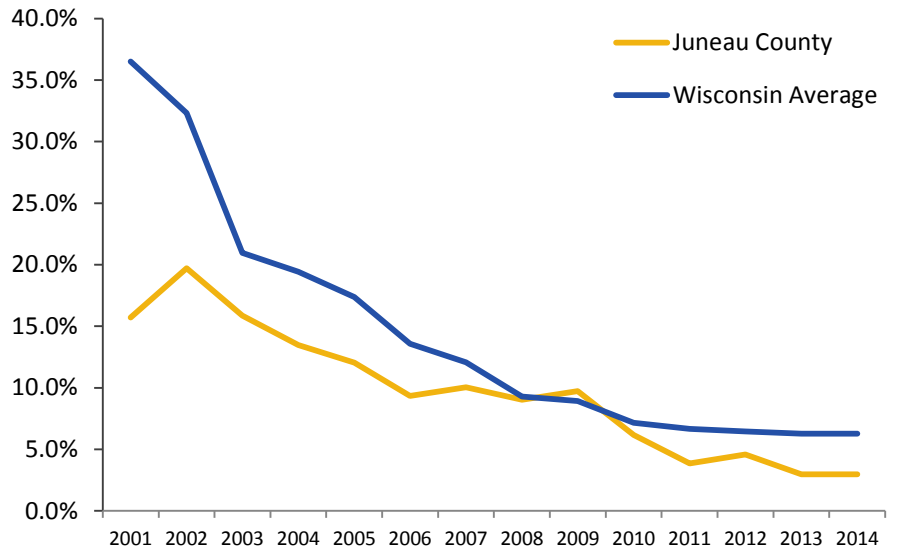
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

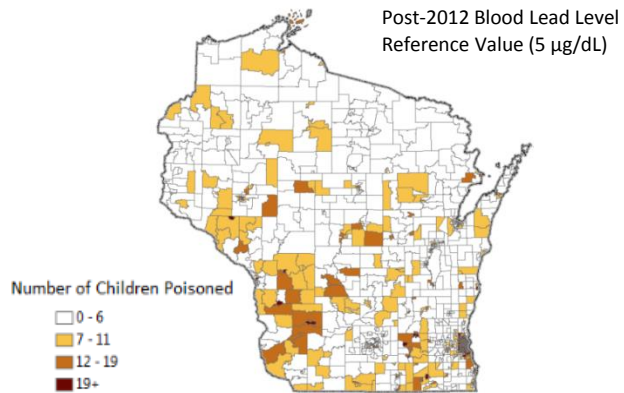
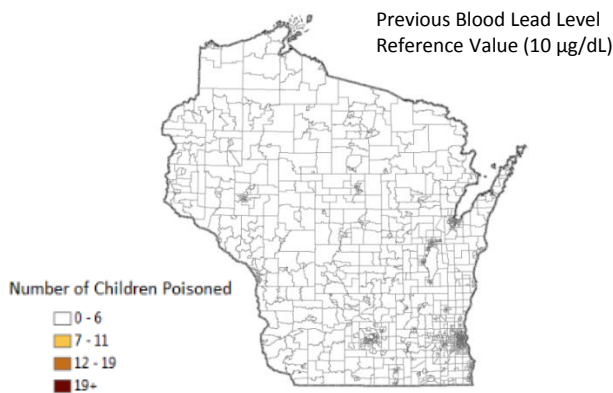
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

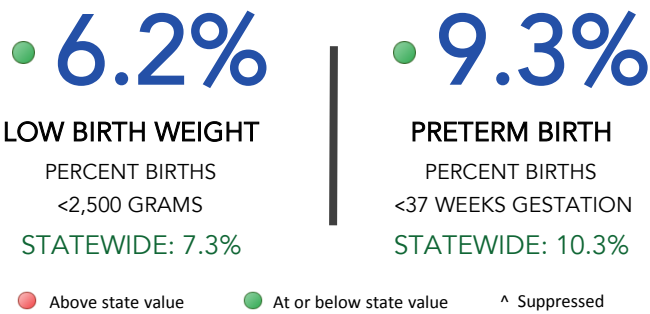
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES JUNEAU COUNTY

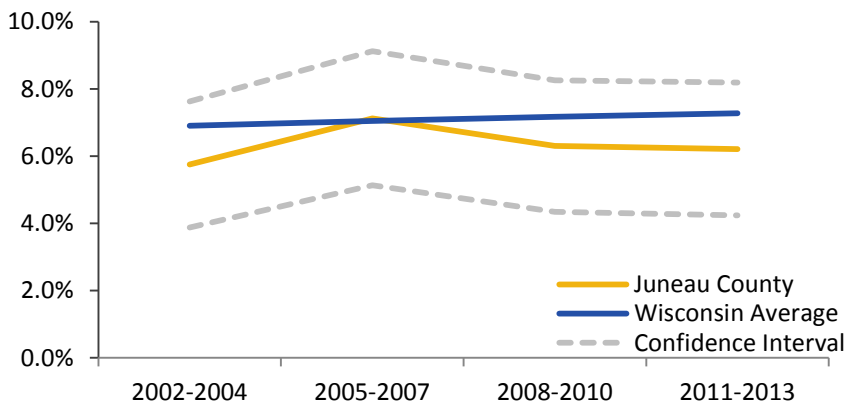
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

JUNEAU COUNTY

PRETERM BIRTH

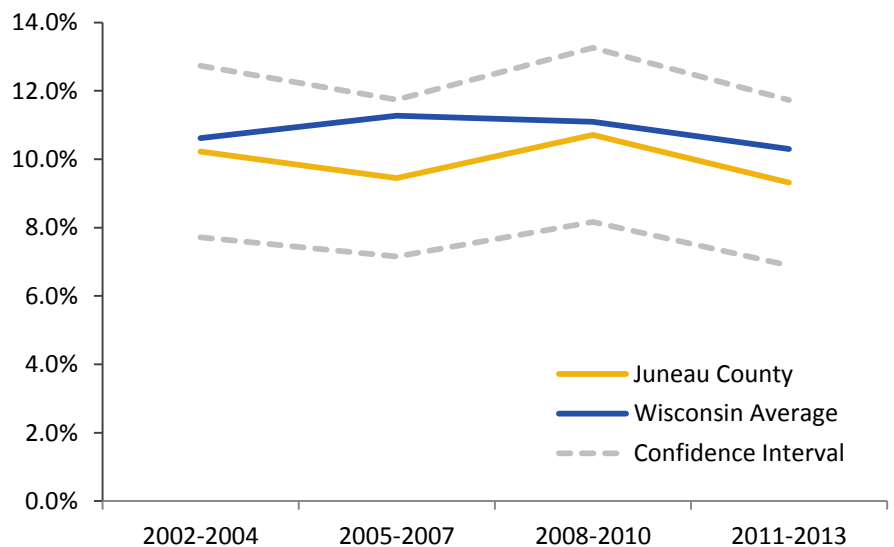
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS JUNEAU COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **48.6**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **13.2**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **78.9**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

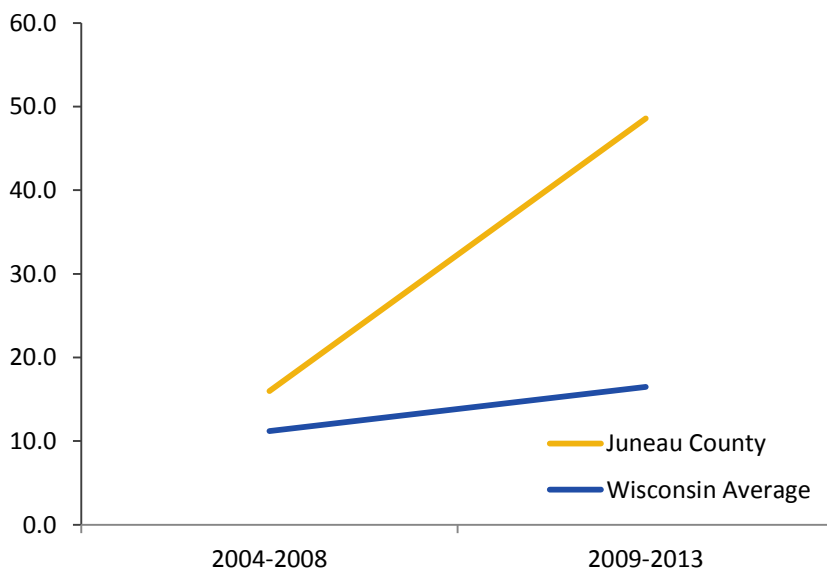
● **331.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



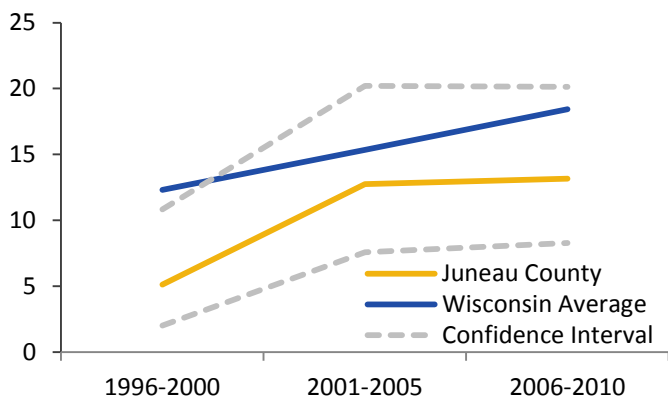


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



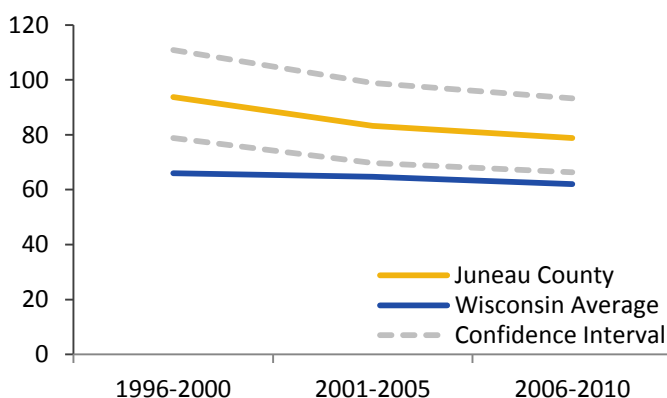
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



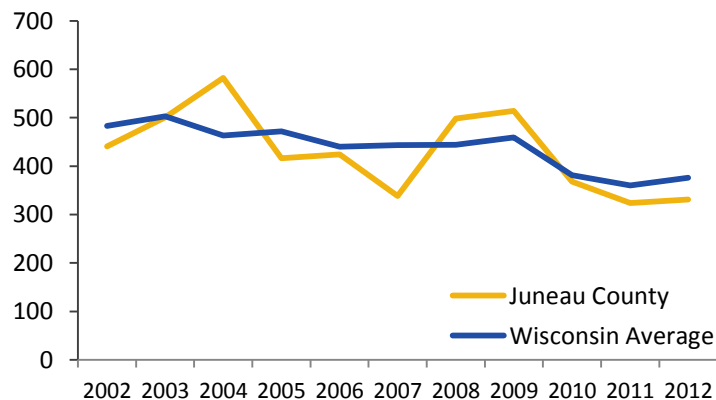
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

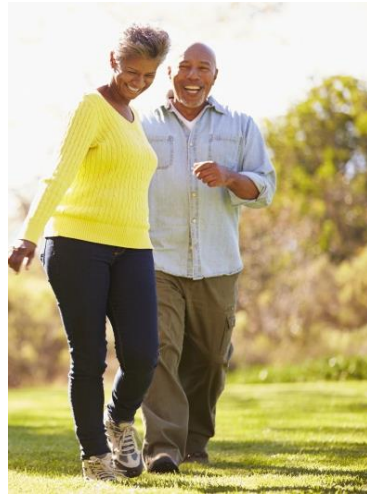
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
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dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



KENOSHA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

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KENOSHA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 7.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.8 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 0.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 4.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 5.8% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 11.5% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 15.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 12.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 78.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 528.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY KENOSHA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● **7.0**

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● **0.0**

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

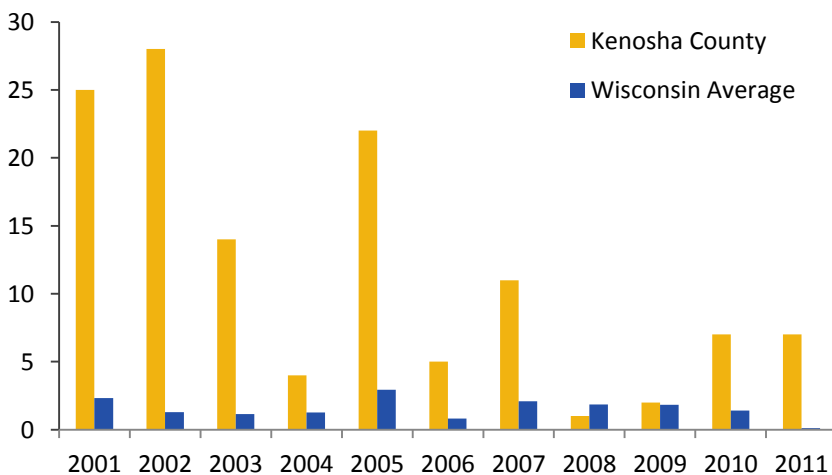
● **11.1**

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

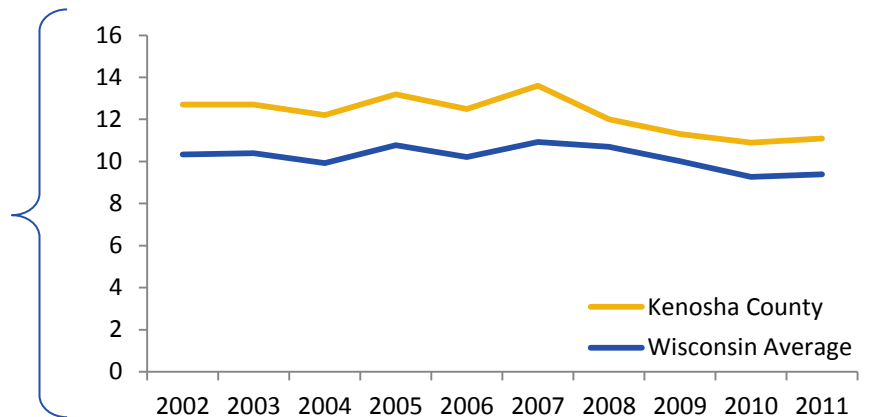
KENOSHA COUNTY

PARTICULATE MATTER 2.5

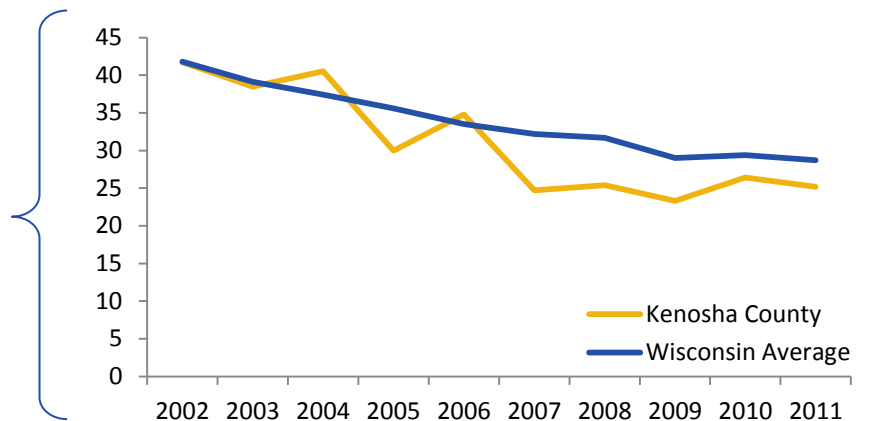
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

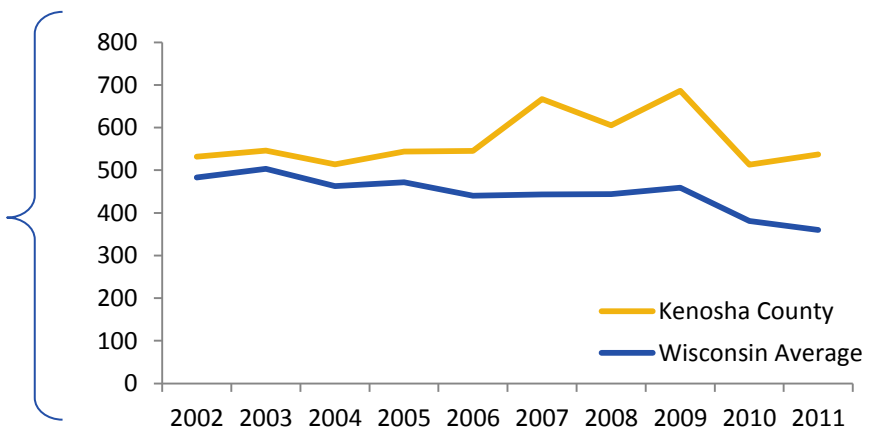
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



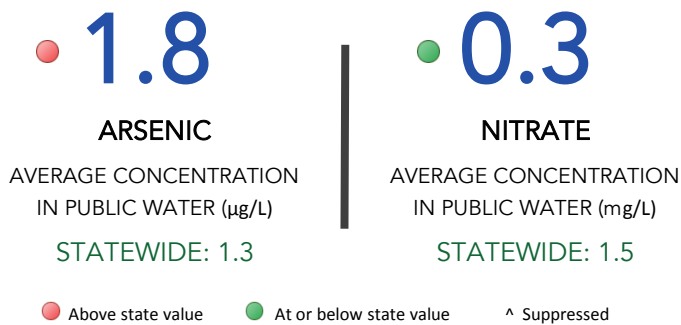
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY KENOSHA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

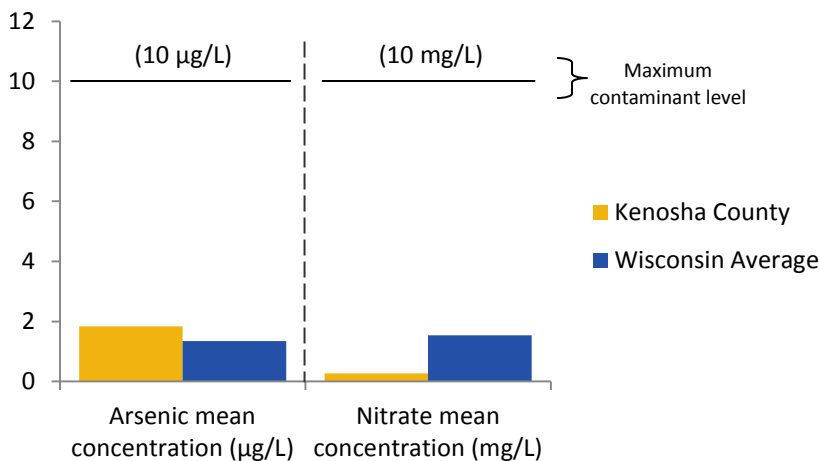
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY KENOSHA COUNTY

PRIVATE DRINKING WATER

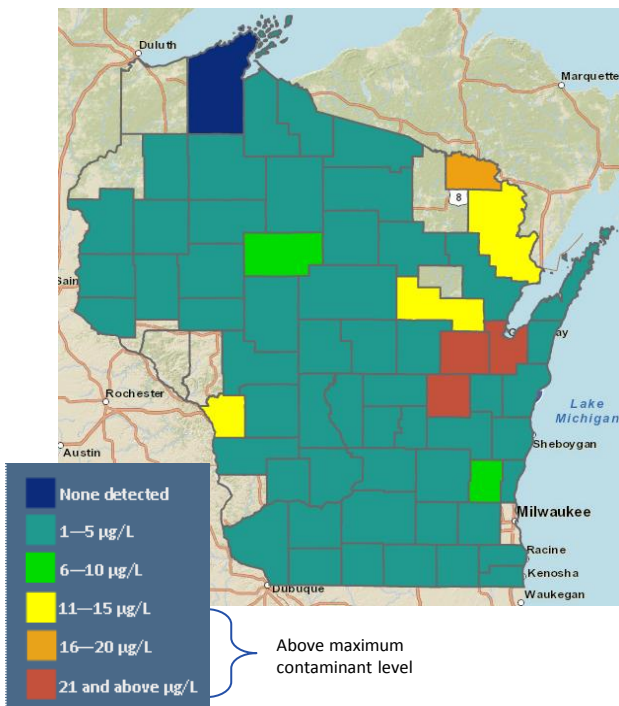
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

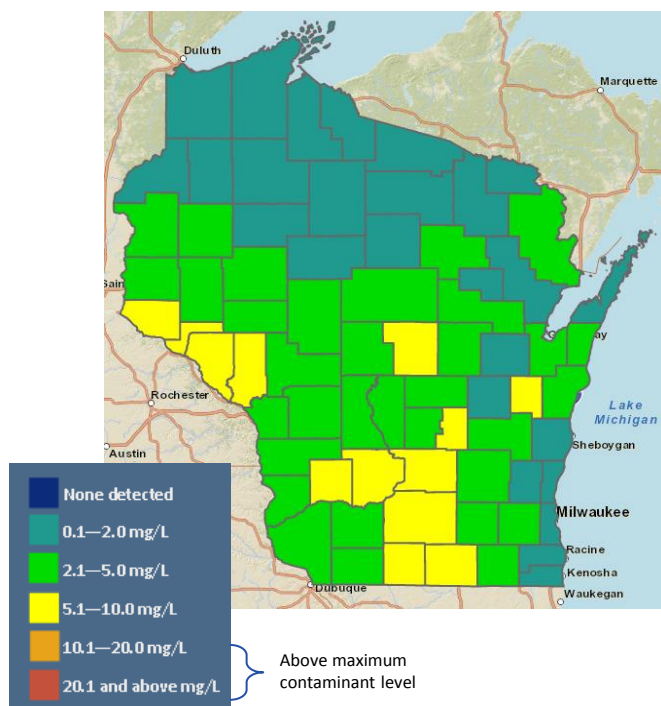
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS KENOSHA COUNTY

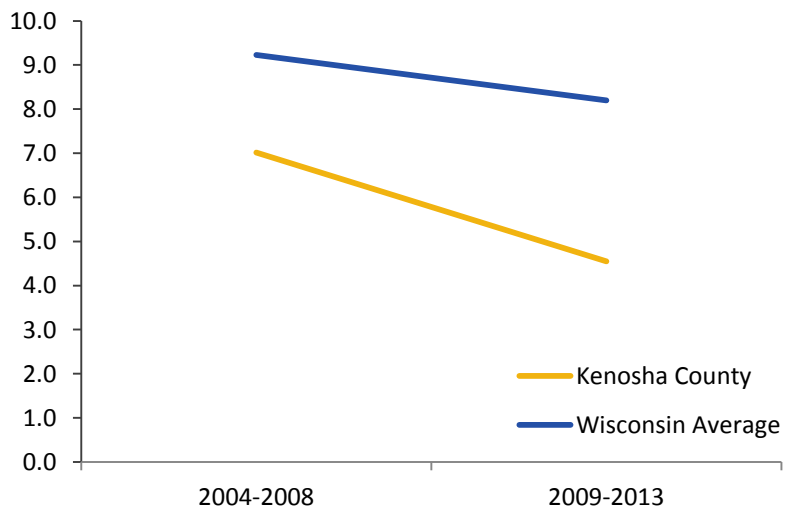
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

- **4.6**
- CARBON MONOXIDE POISONING**
- RATE OF ER VISITS RELATED TO CO PER 100,000
- STATEWIDE: 8.2
- At or below state value

- **5.8%**
- CHILDHOOD LEAD POISONING**
- PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
- STATEWIDE: 6.3%
- At or below state value

● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

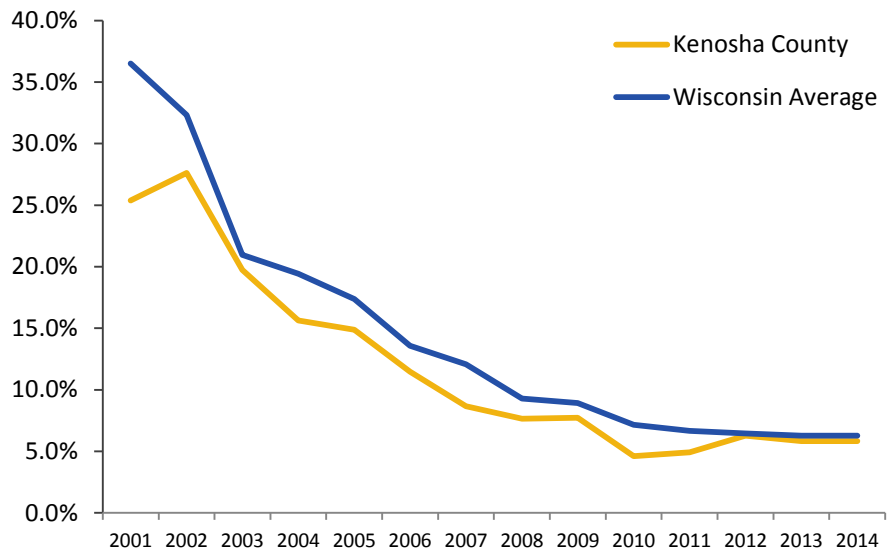
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

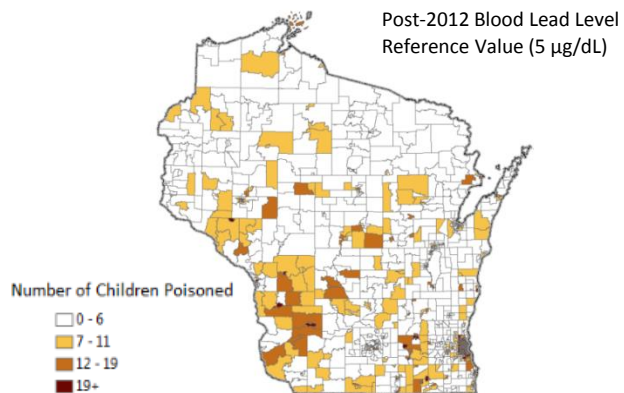
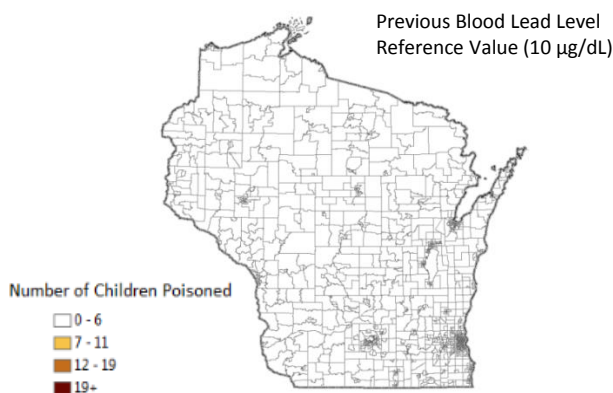
CHILDHOOD LEAD POISONING

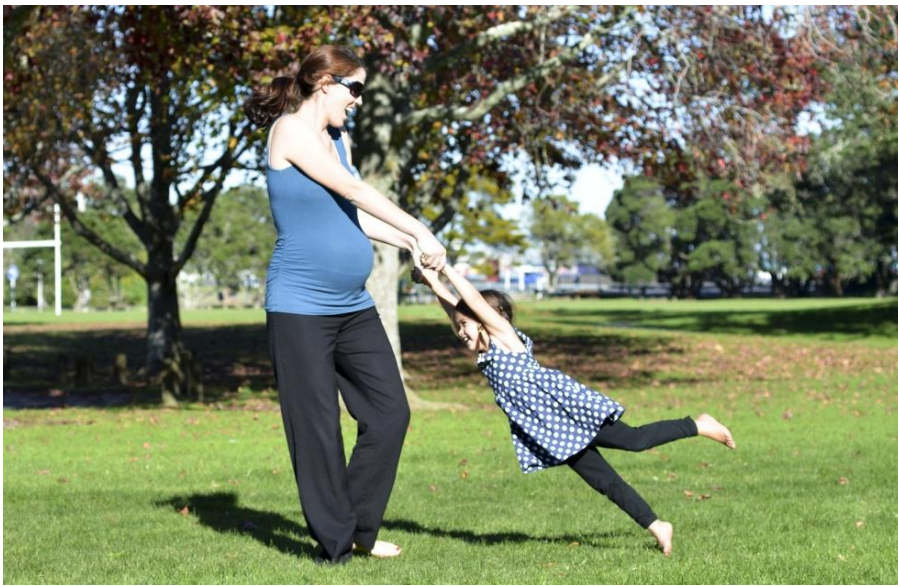
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES KENOSHA COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **7.7%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **11.5%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

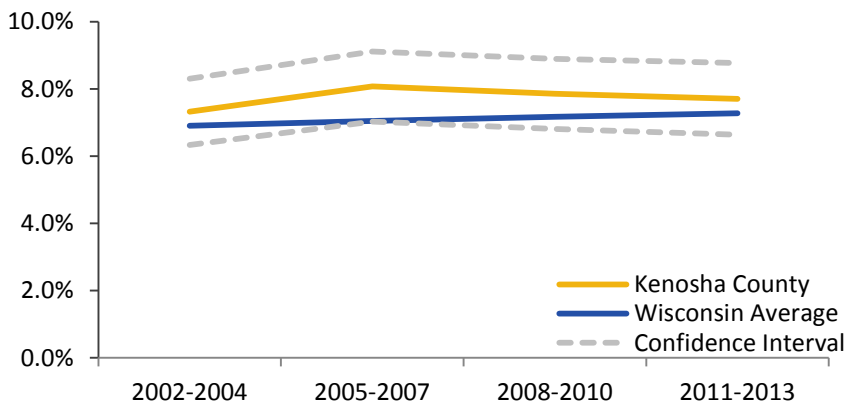
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES KENOSHA COUNTY

PRETERM BIRTH

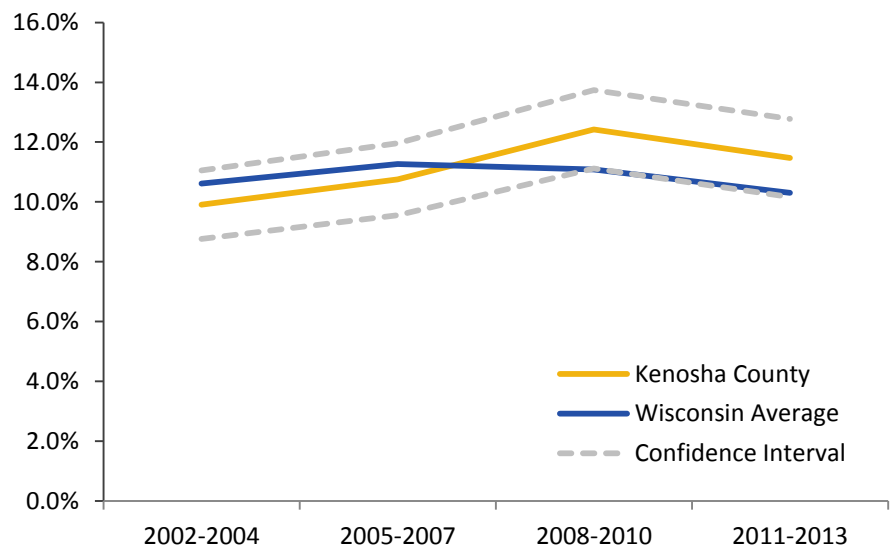
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS KENOSHA COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **15.4**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

● **12.3**
MELANOMA
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 18.4

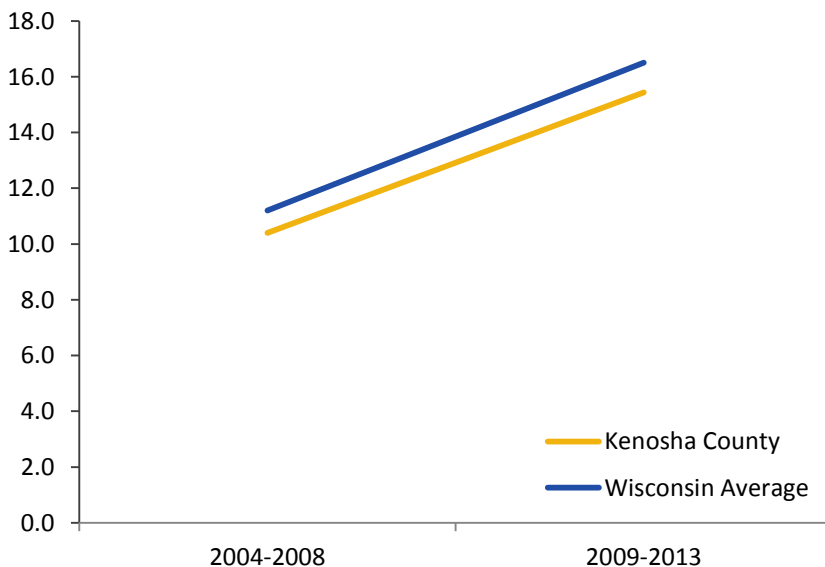
● **78.5**
LUNG CANCER
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 62

● **528.0**
ASTHMA
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



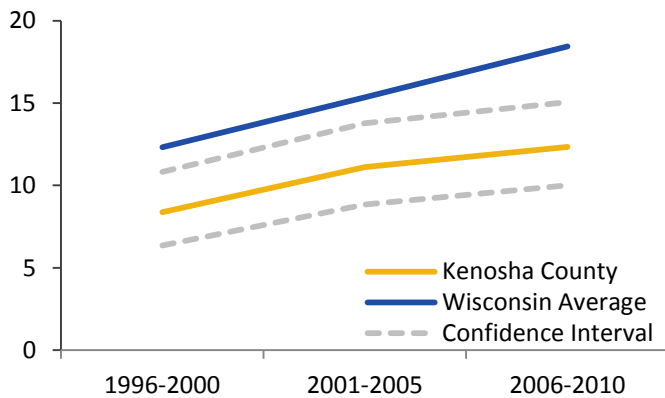


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



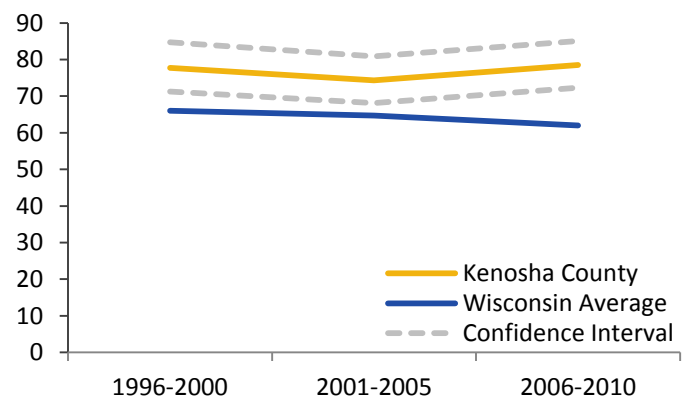
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



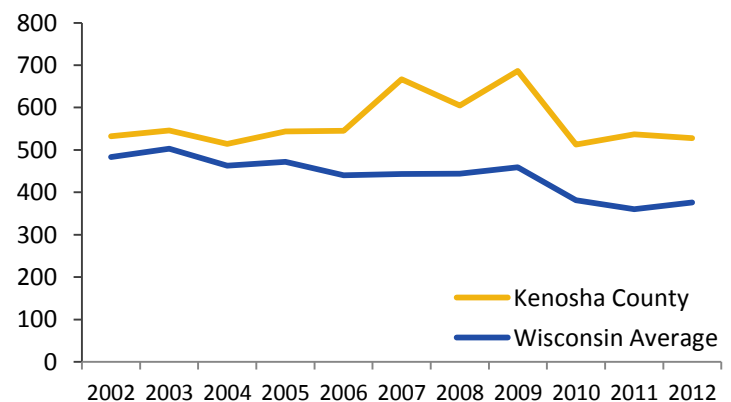
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
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MAY 2015 | P-00719



KEWAUNEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

KEWAUNEE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

1.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

1.0 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

8.3 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

0.9% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

6.3% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

9.2% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

15.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

20.8 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

47.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

166.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY KEWAUNEE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 1.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

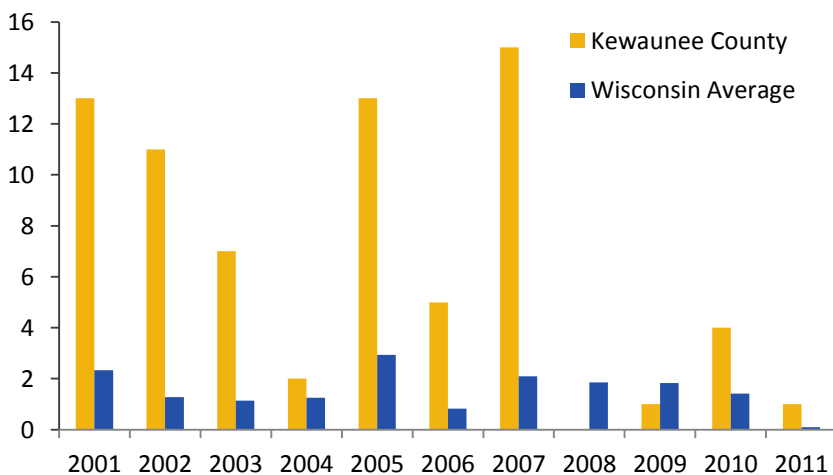
● 9.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

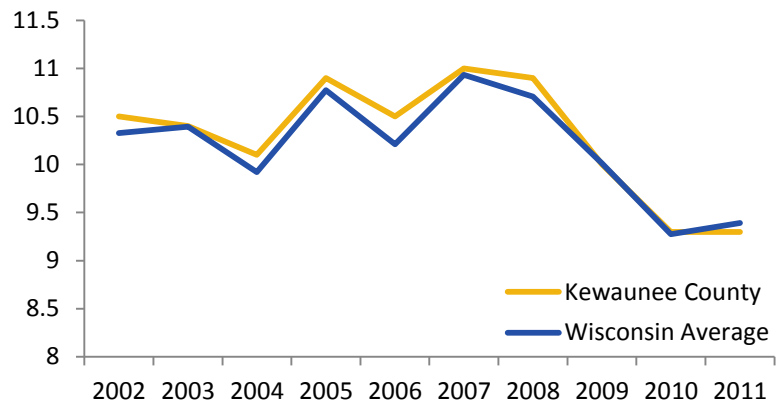
KEWAUNEE COUNTY

PARTICULATE MATTER 2.5

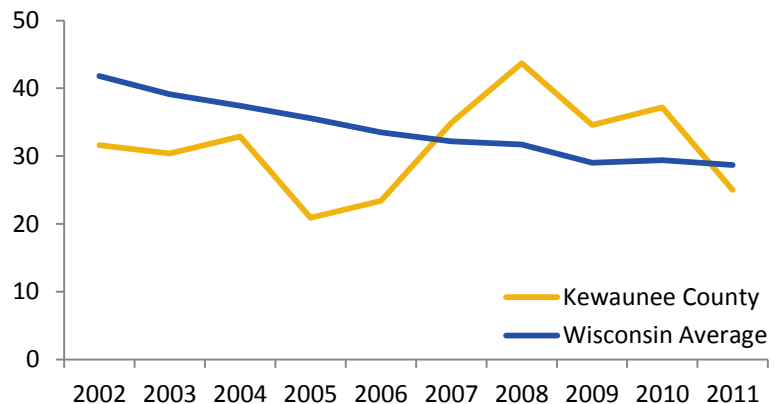
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

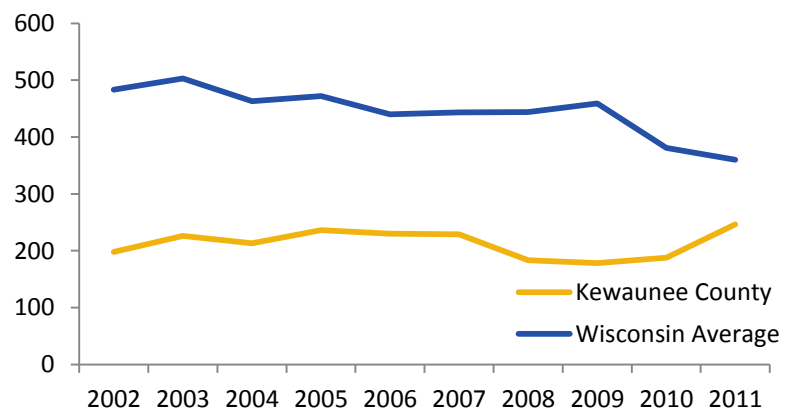
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



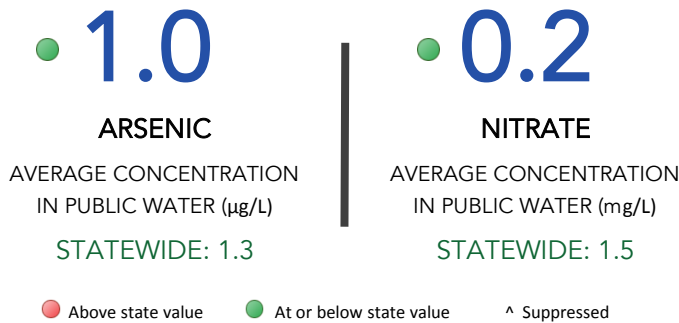
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY KEWAUNEE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

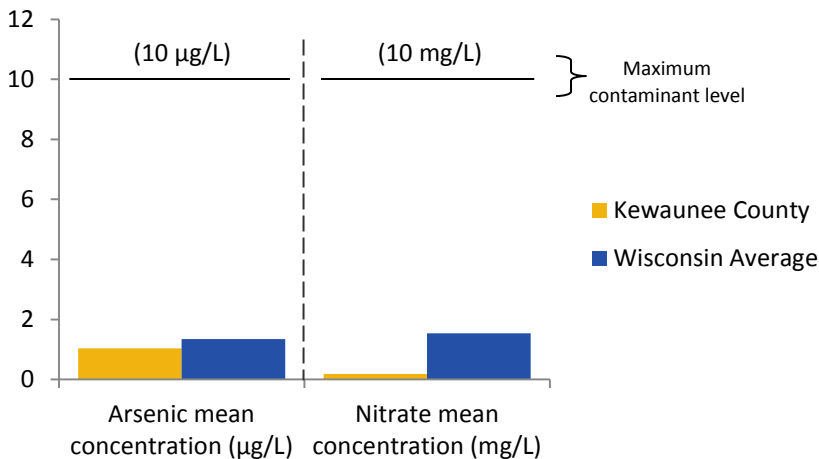
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY KEWAUNEE COUNTY

PRIVATE DRINKING WATER

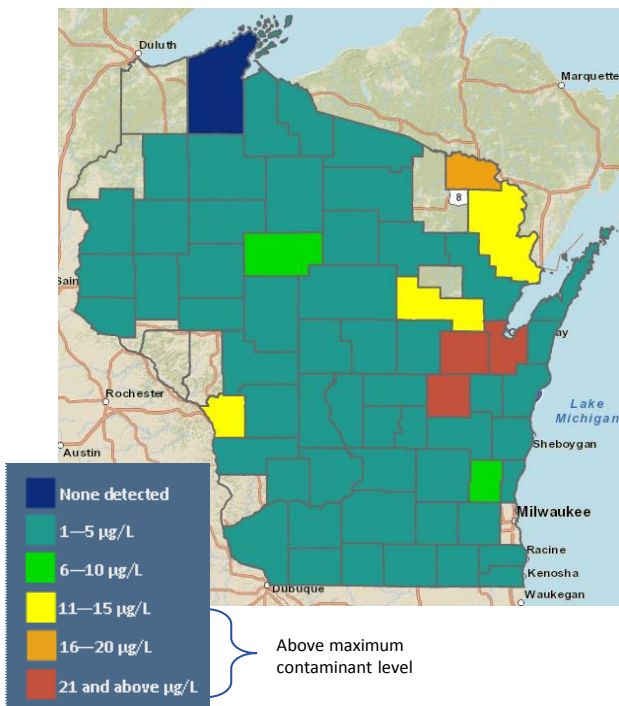
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

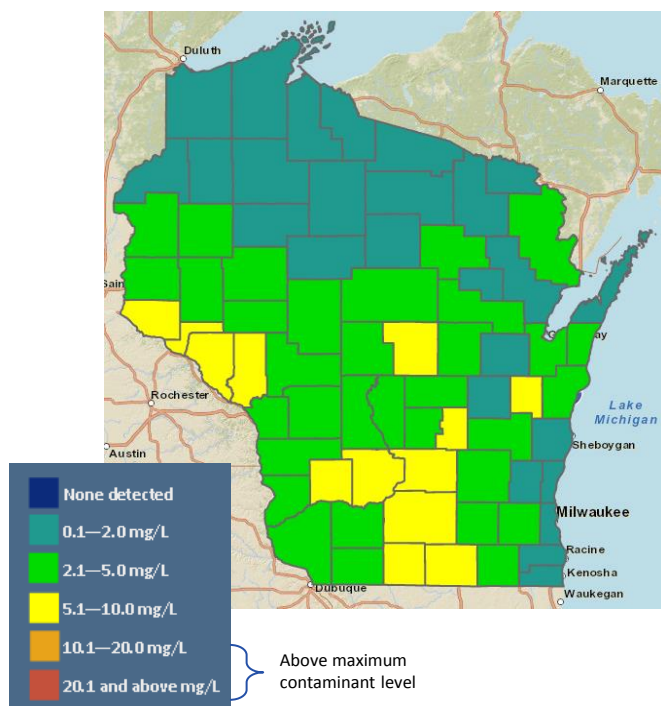
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS KEWAUNEE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

8.3
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

0.9%
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

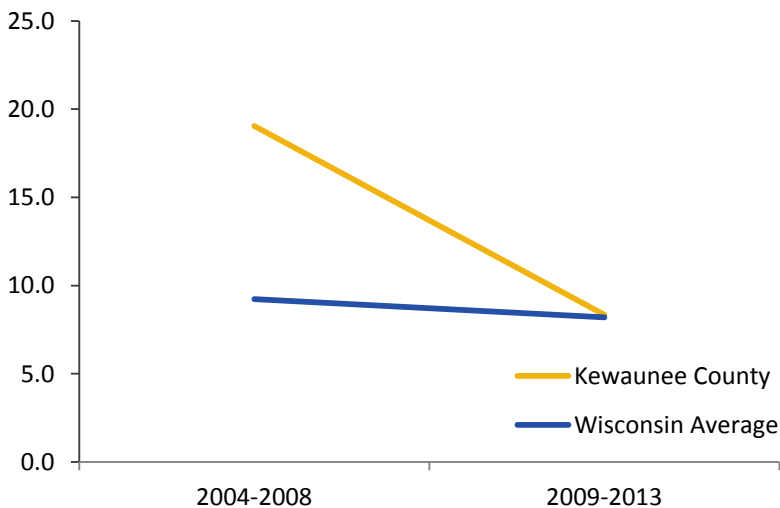
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

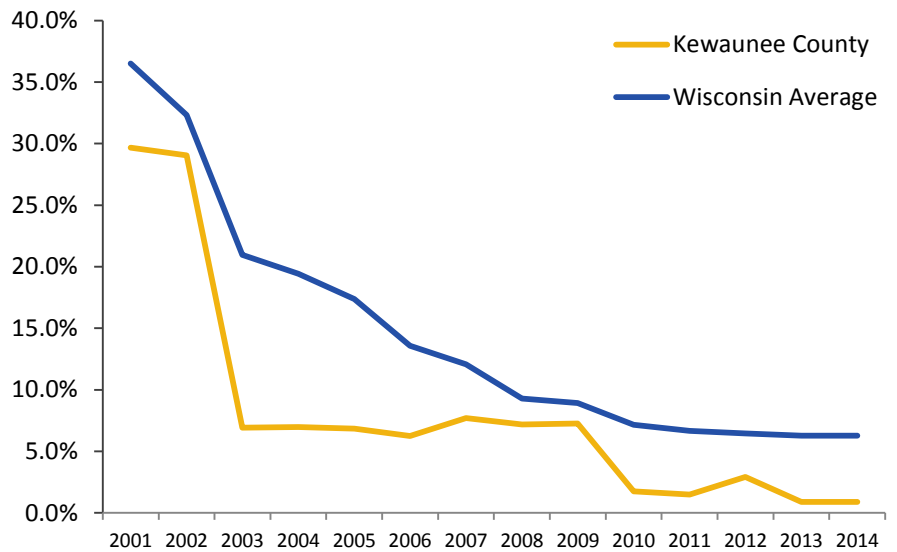
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

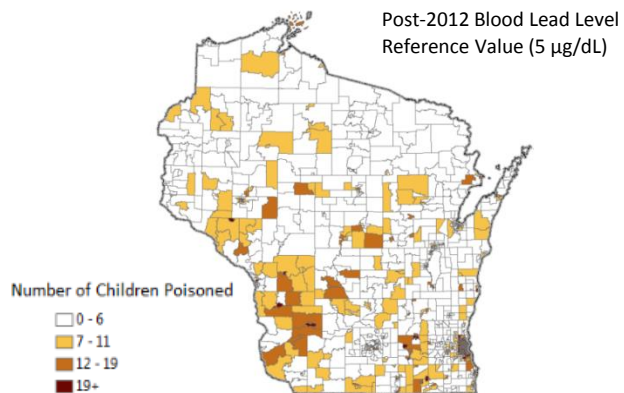
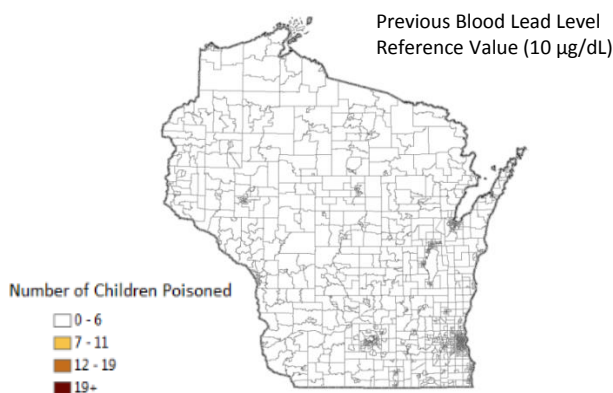
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES KEWAUNEE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.3%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.2%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

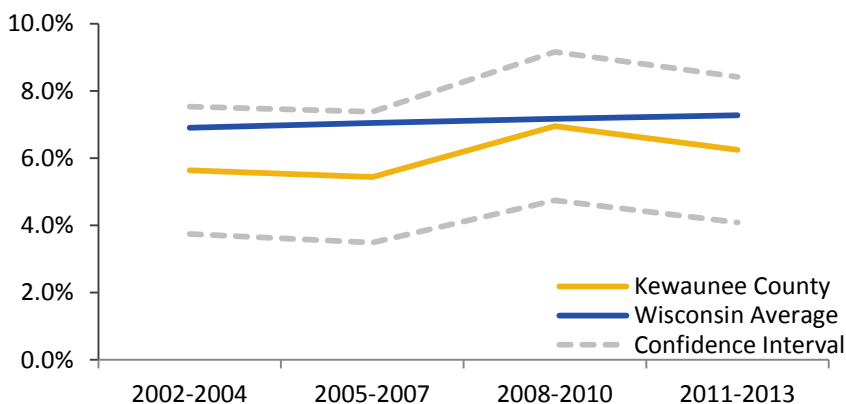
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES KEWAUNEE COUNTY

PRETERM BIRTH

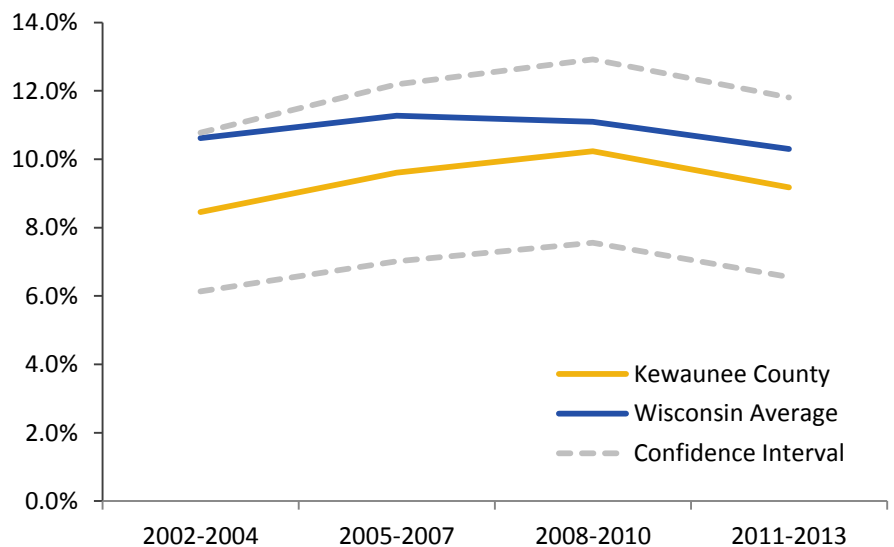
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

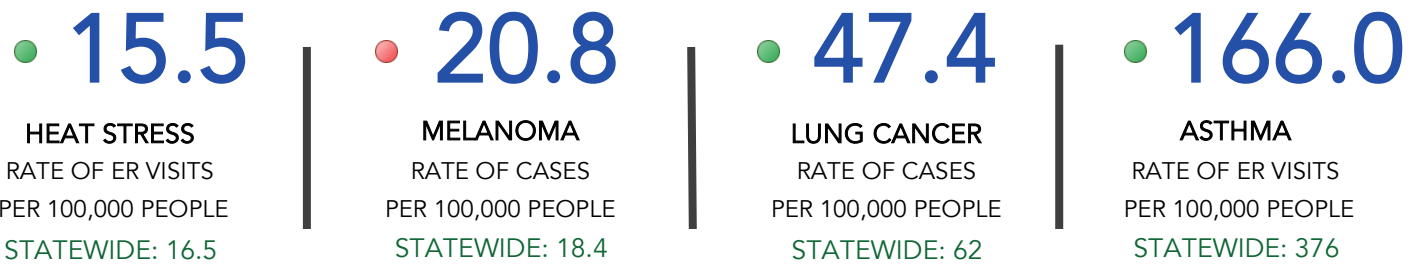
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS KEWAUNEE COUNTY

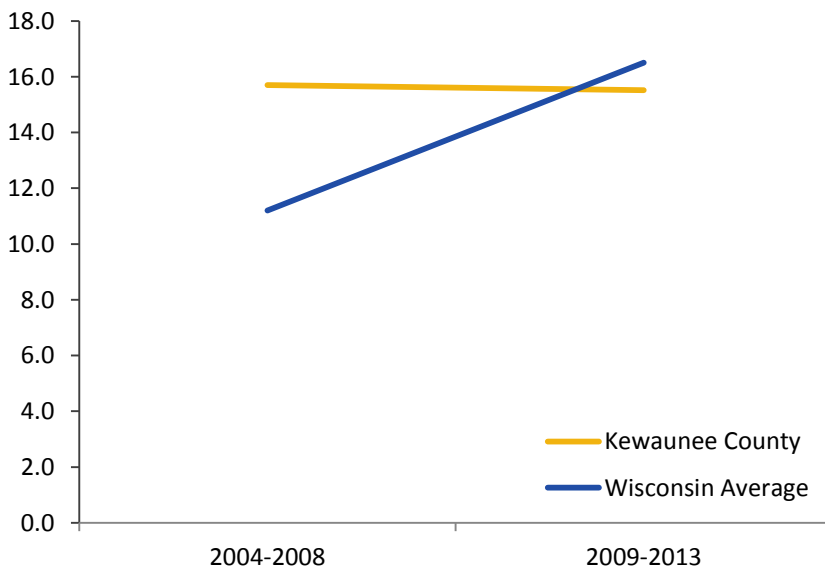
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



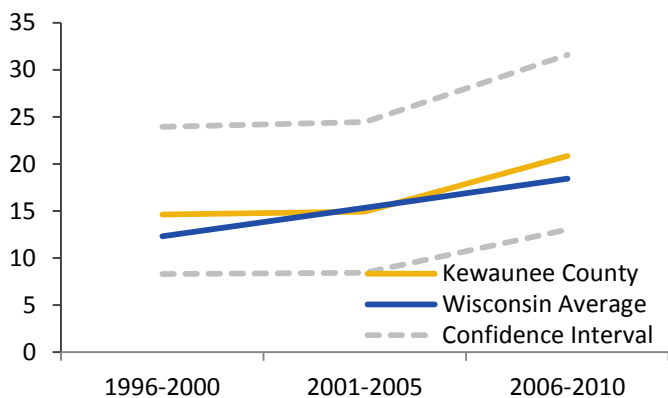


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



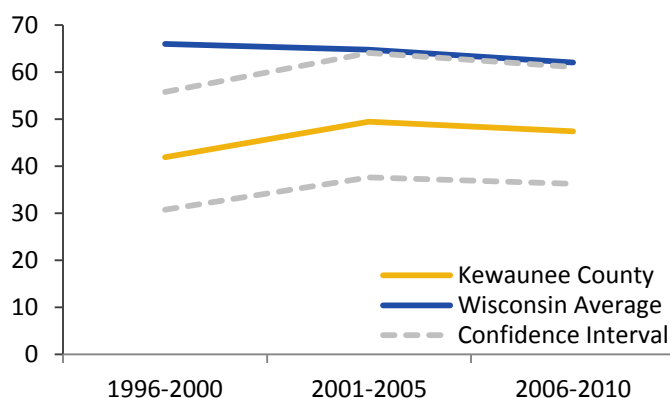
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



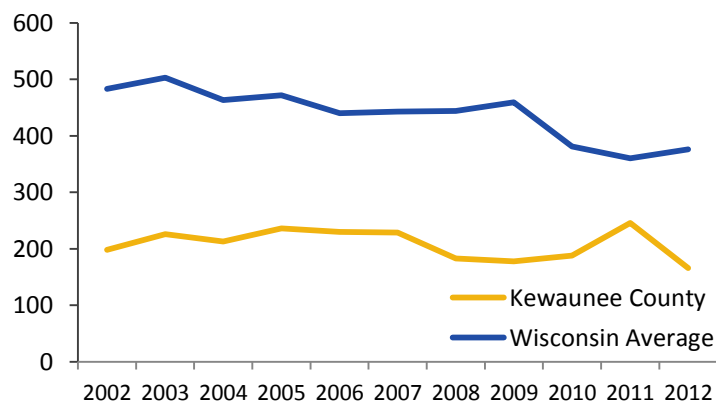
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

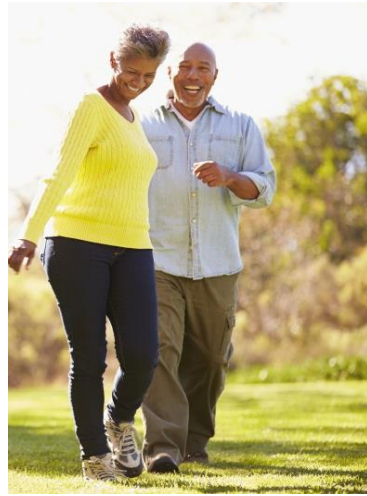
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



LA CROSSE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

LA CROSSE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

0.5 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

1.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

3.7 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

1.9% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

6.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

9.0% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

15.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

22.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

58.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

186.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY LA CROSSE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

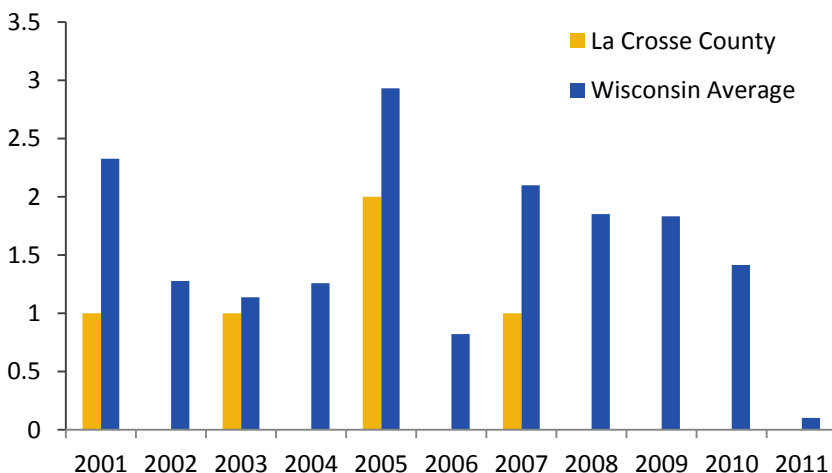
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **9.8**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

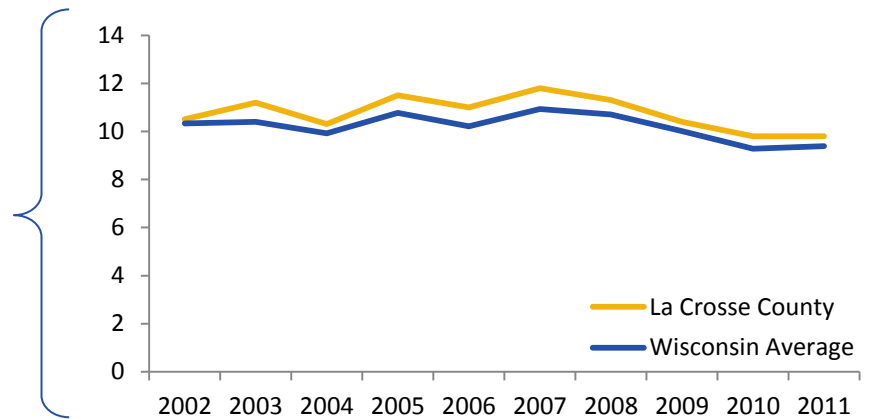
LA CROSSE COUNTY

PARTICULATE MATTER 2.5

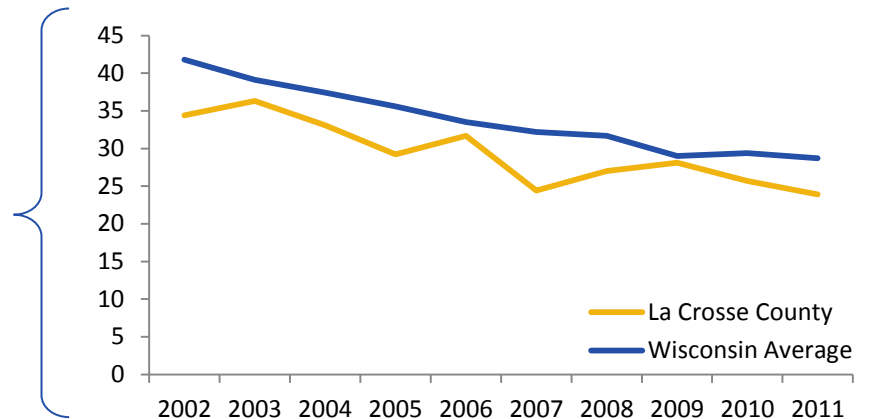
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

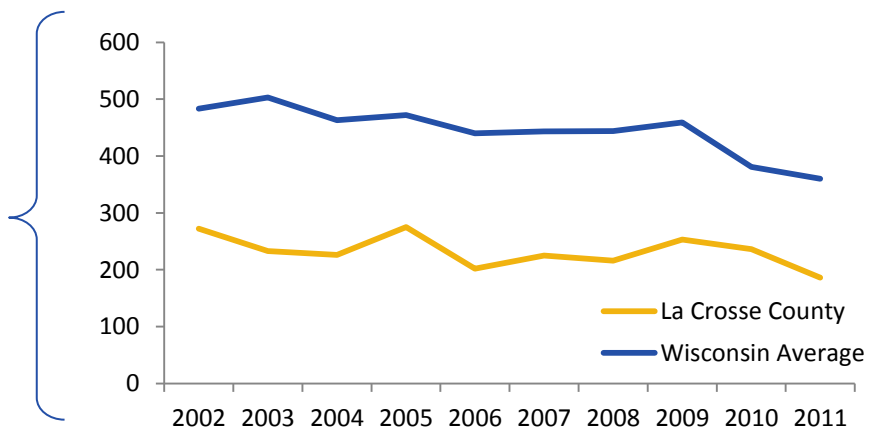
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



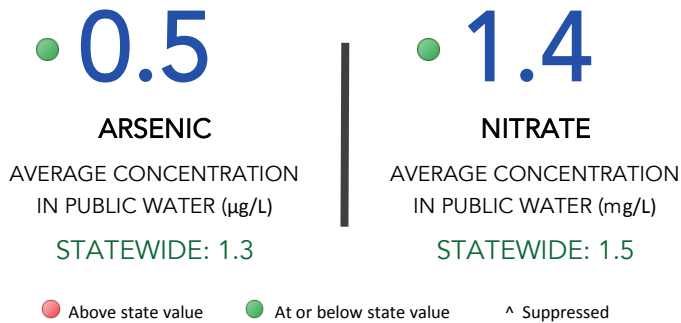
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY LA CROSSE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

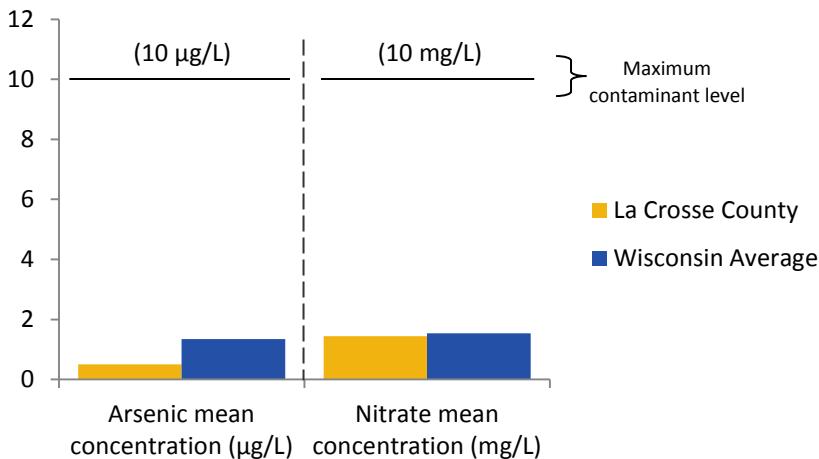
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY LA CROSSE COUNTY

PRIVATE DRINKING WATER

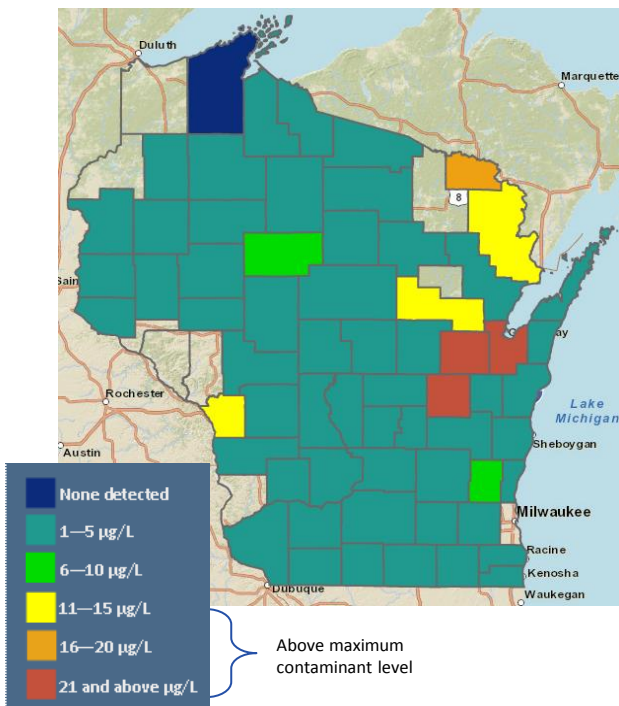
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 $\mu\text{g/L}$ maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

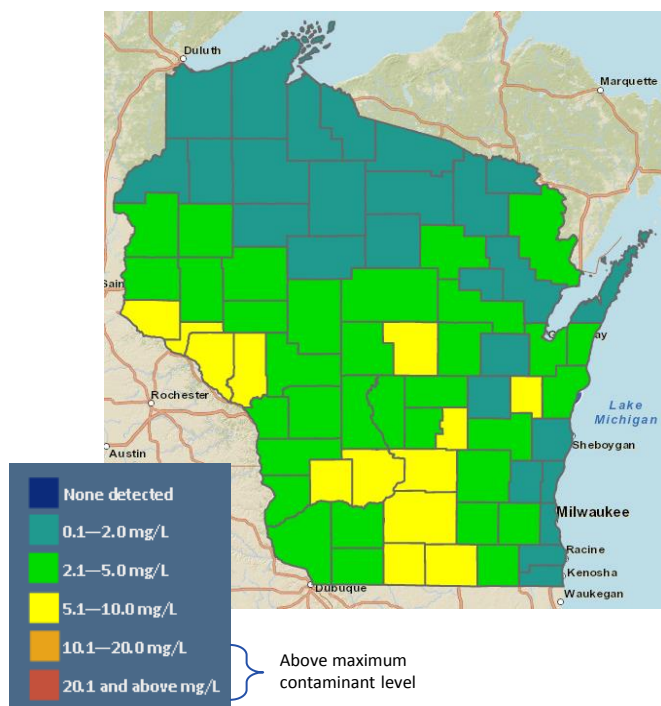
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION ($\mu\text{g/L}$)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS LA CROSSE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **3.7**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **1.9%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

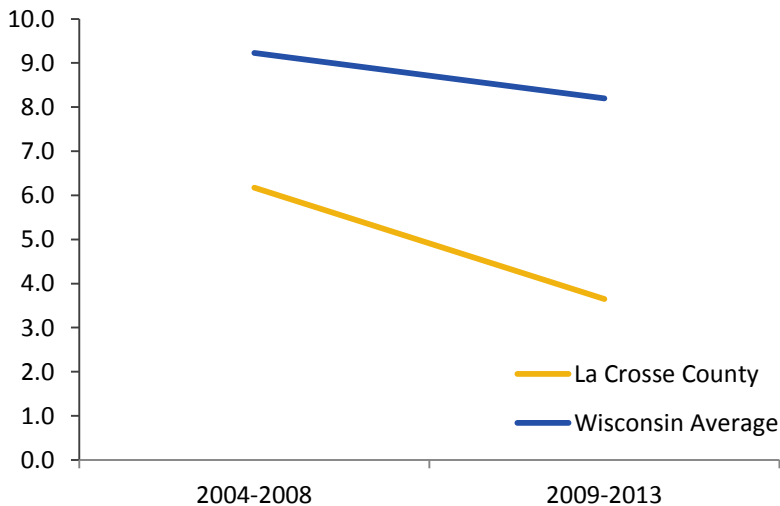
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

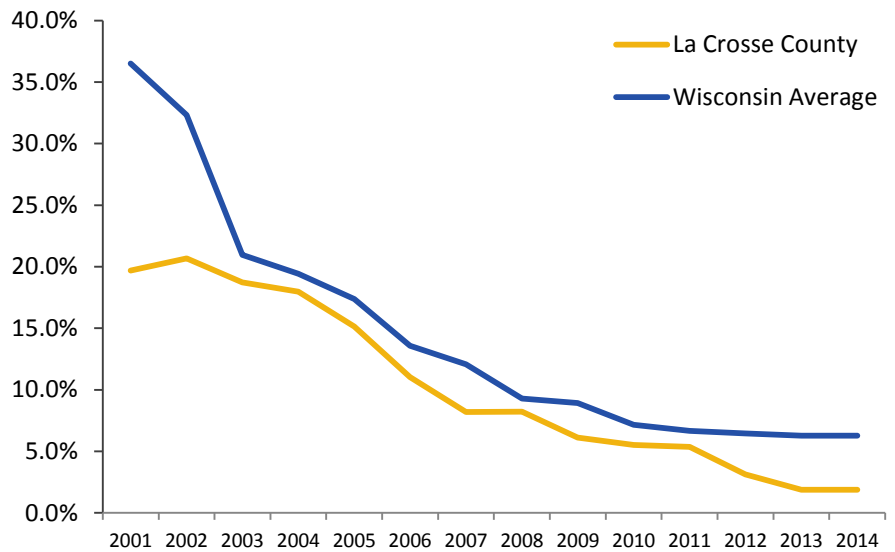
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

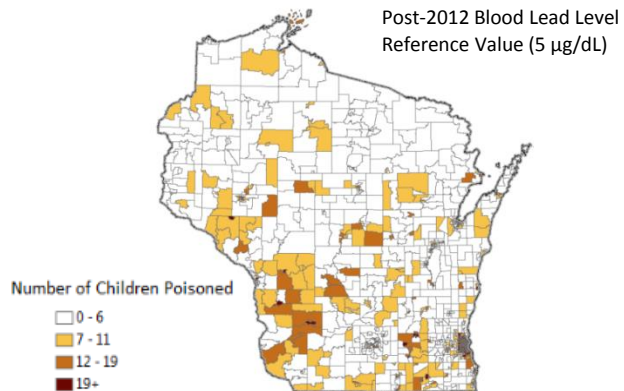
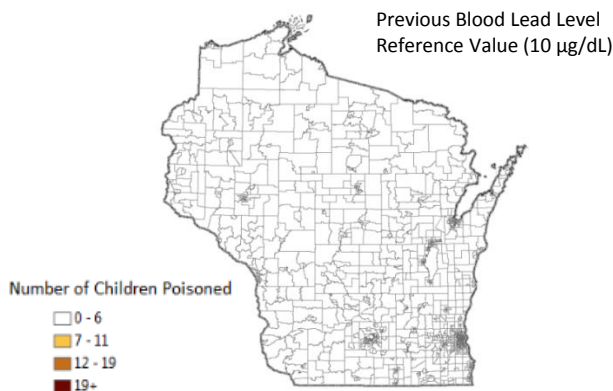
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES LA CROSSE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.5%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.0%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

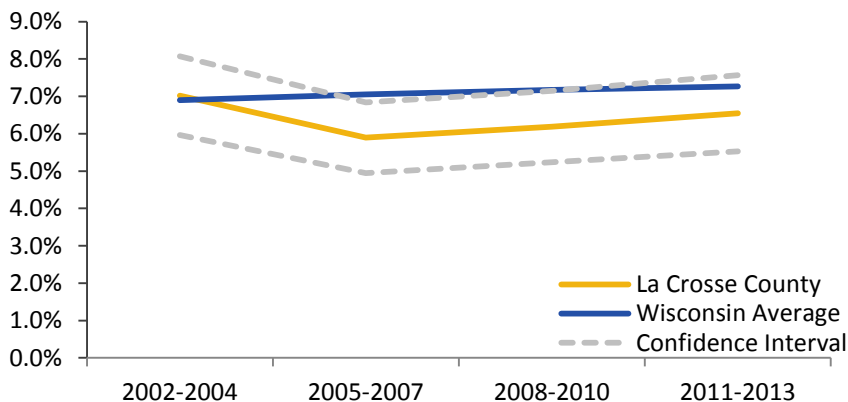
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





PRETERM BIRTH

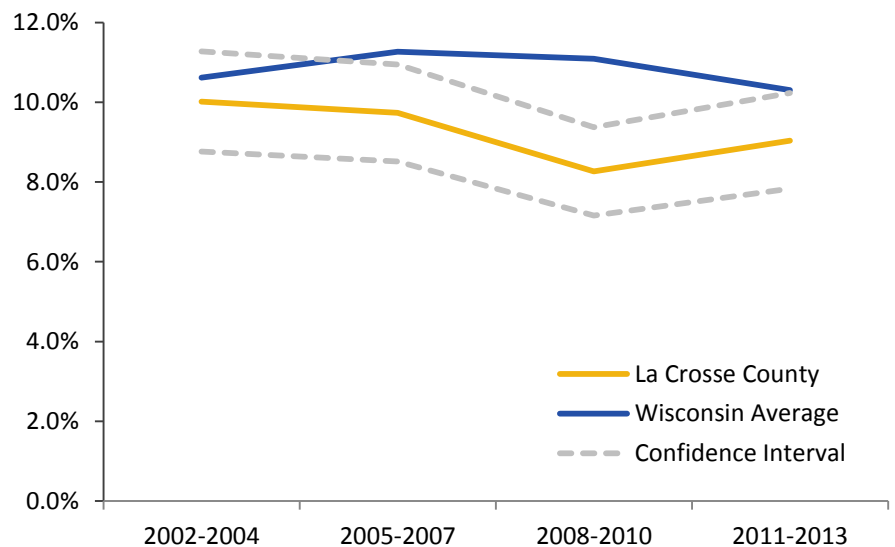
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS LA CROSSE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **15.0**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **22.2**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **58.5**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

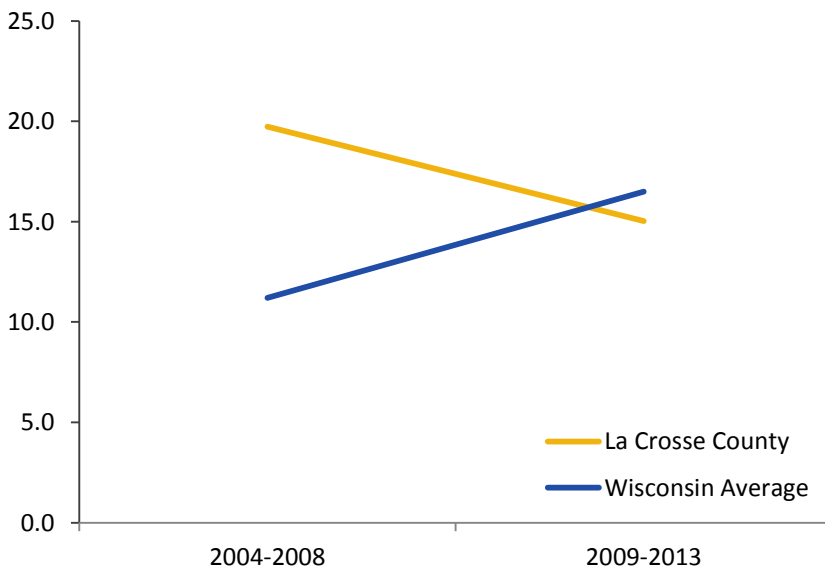
● **186.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



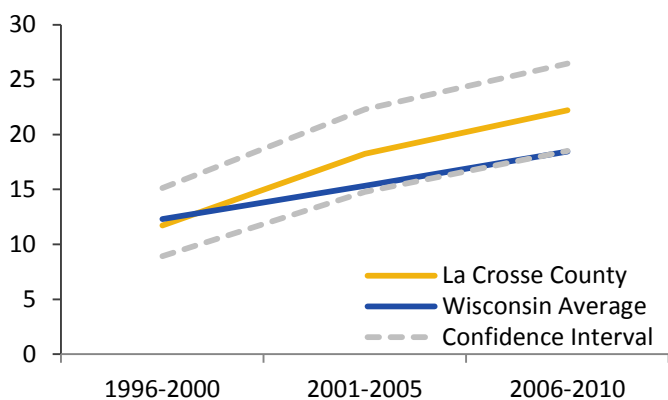


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



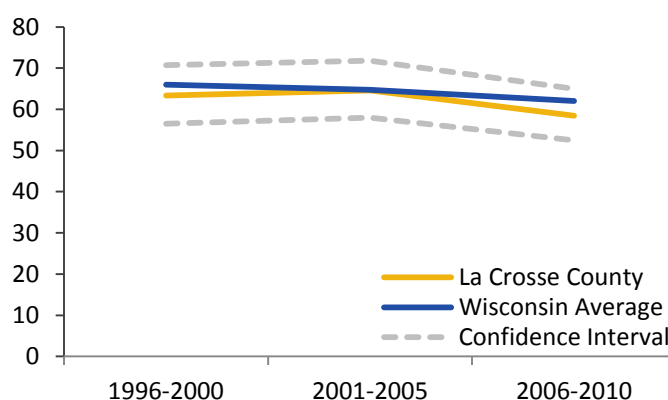
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



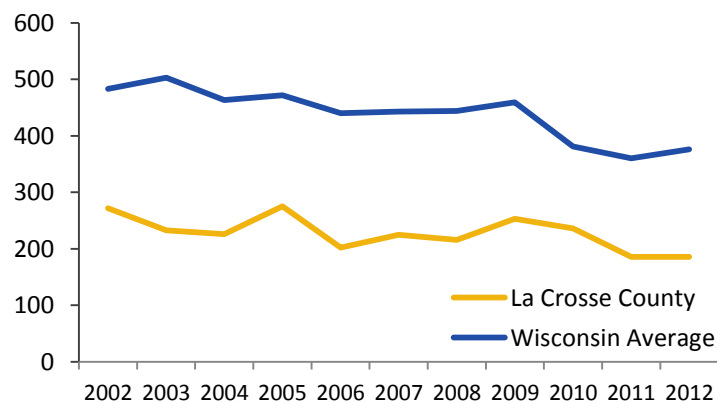
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

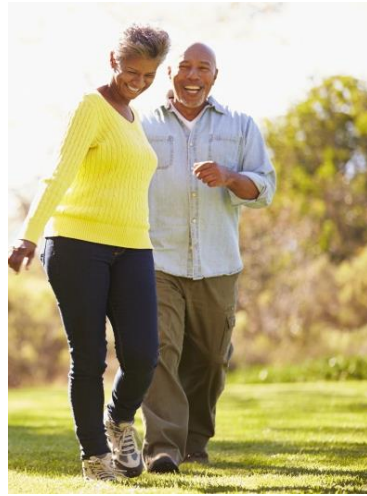
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



LAFAYETTE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

LAFAYETTE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

0.4 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

7.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

6.3% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

8.0% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

11.0% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

25.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

23.4 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

43.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

360.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY LAFAYETTE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

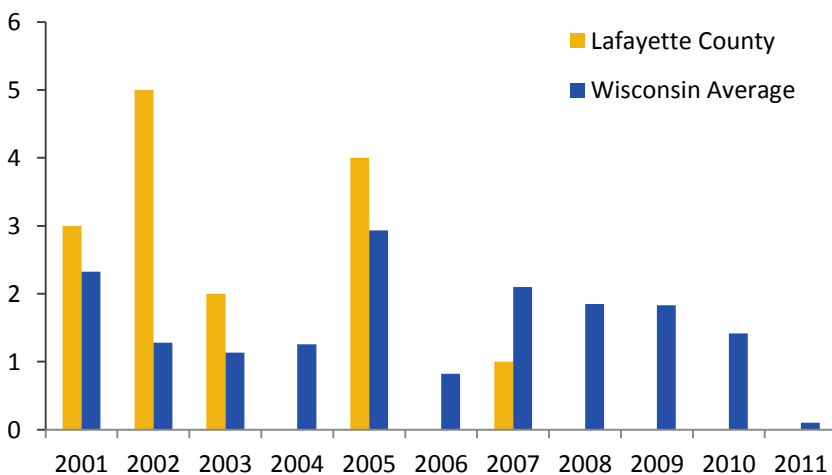
● 10.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

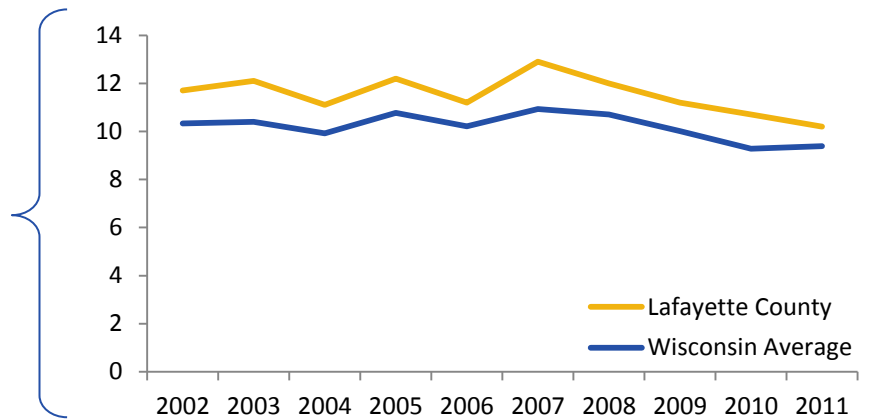
LAFAYETTE COUNTY

PARTICULATE MATTER 2.5

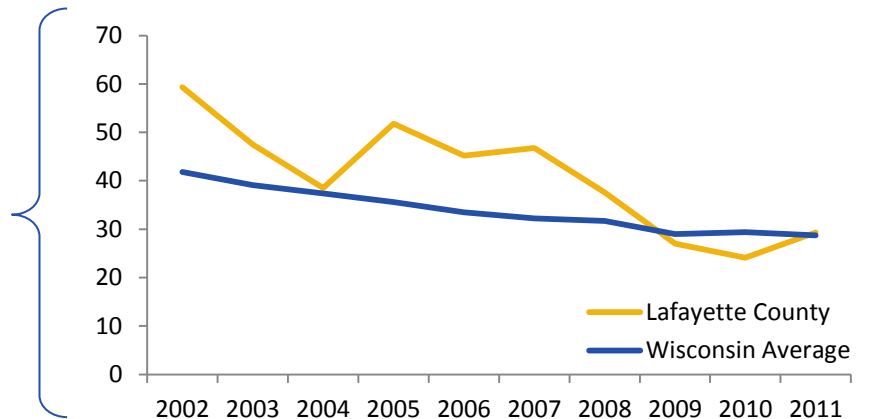
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

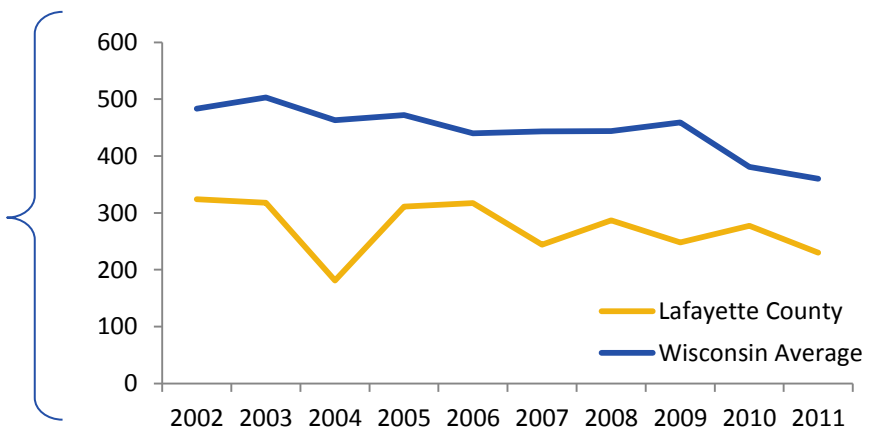
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



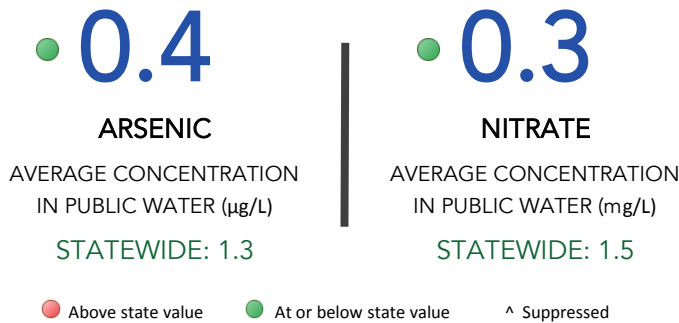
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY LAFAYETTE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

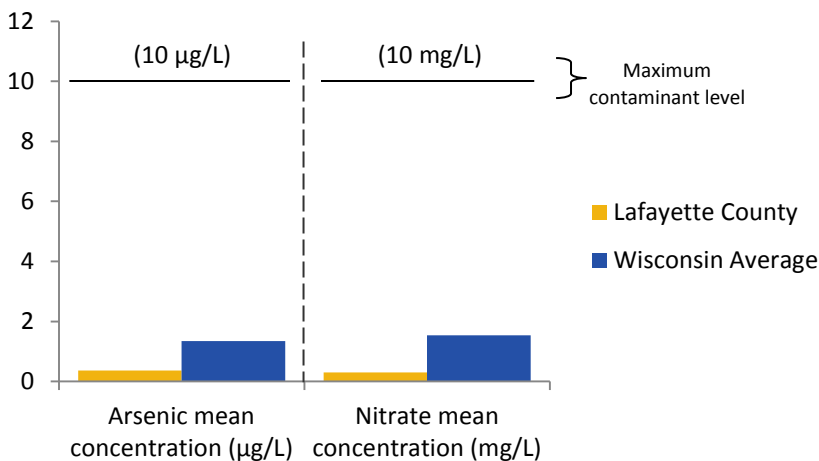
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY LAFAYETTE COUNTY

PRIVATE DRINKING WATER

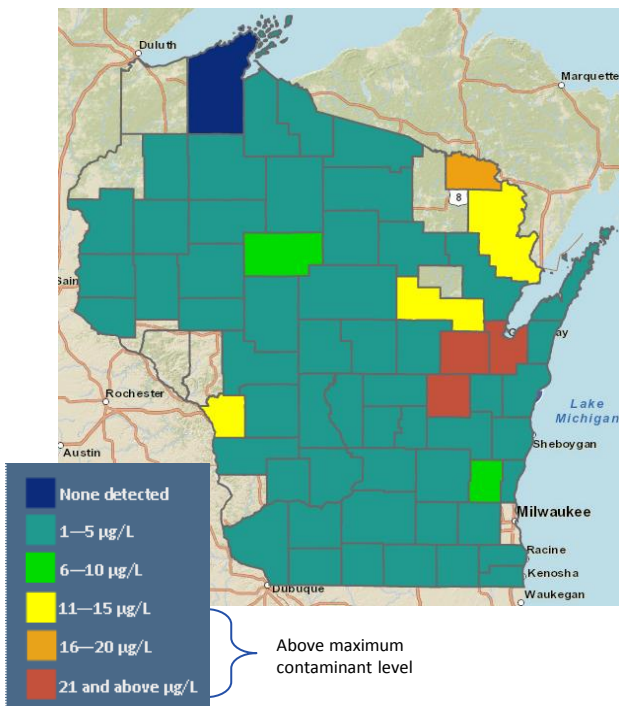
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

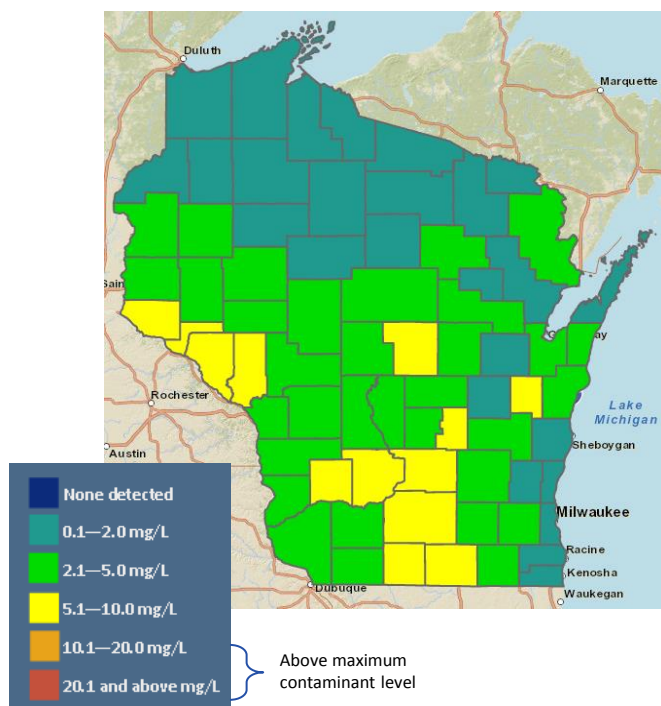
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS LAFAYETTE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.1**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2

● **6.3%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

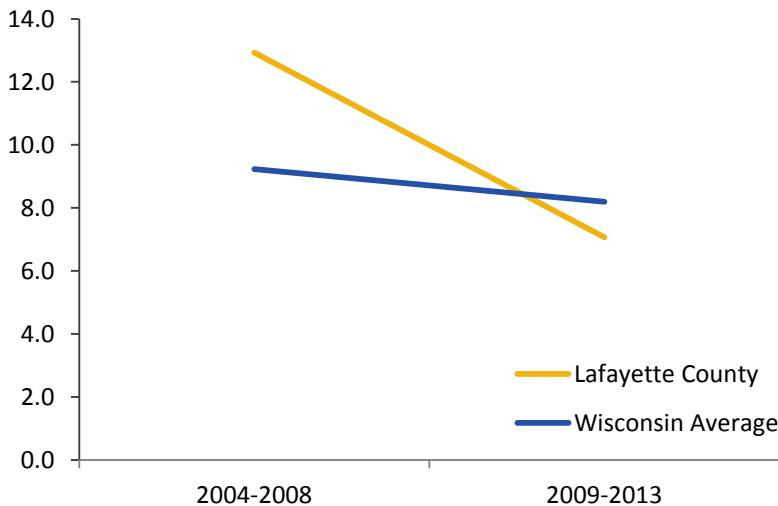
● Above state value ● At or below state value ▲ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

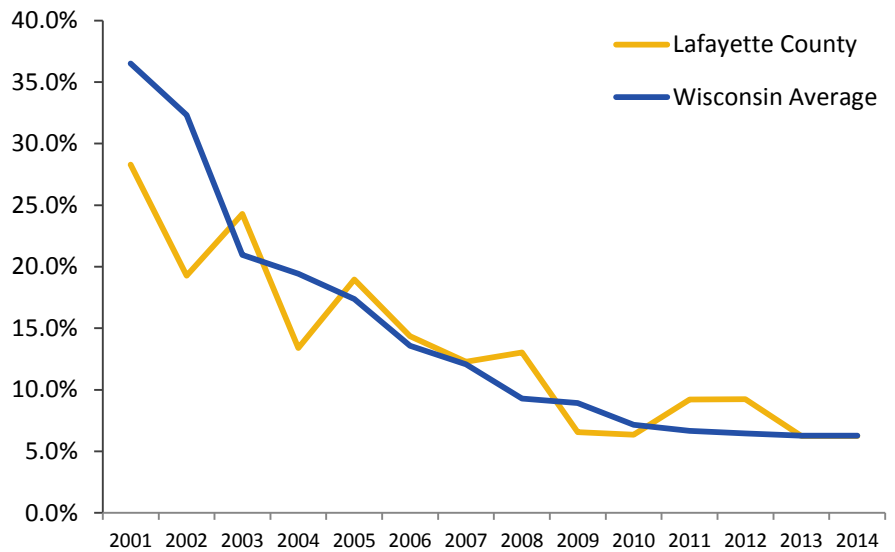
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

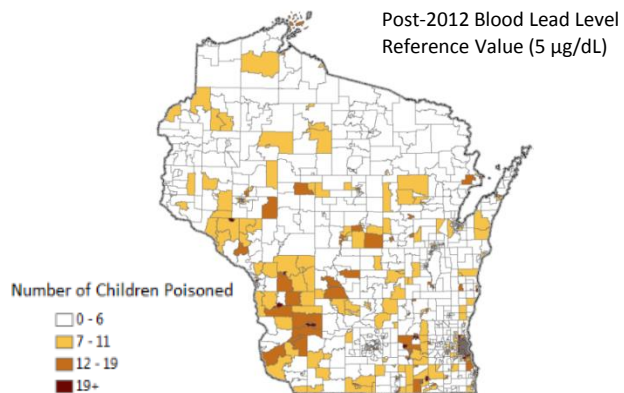
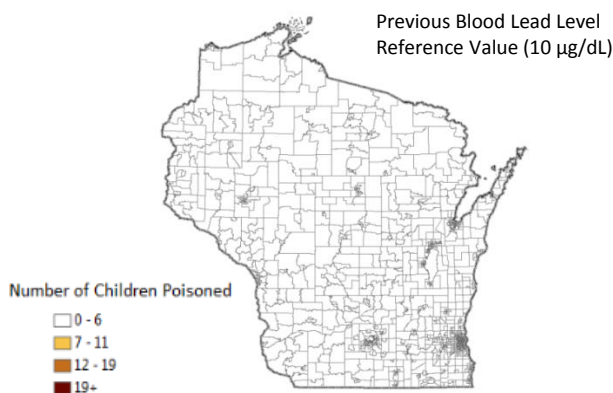
CHILDHOOD LEAD POISONING

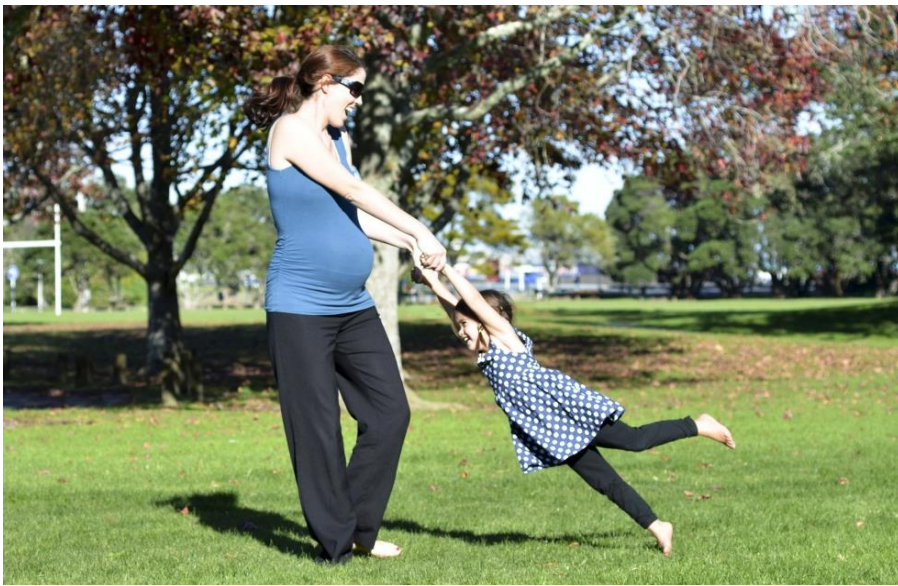
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

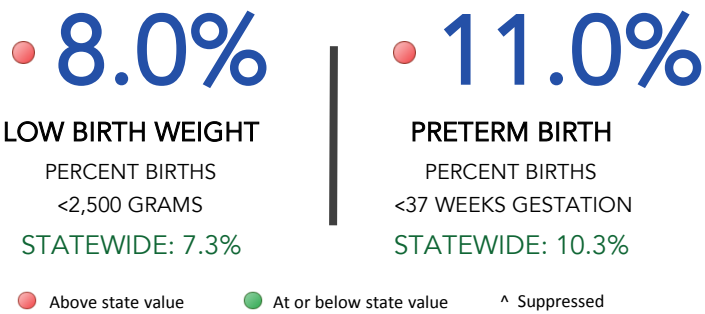
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES LAFAYETTE COUNTY

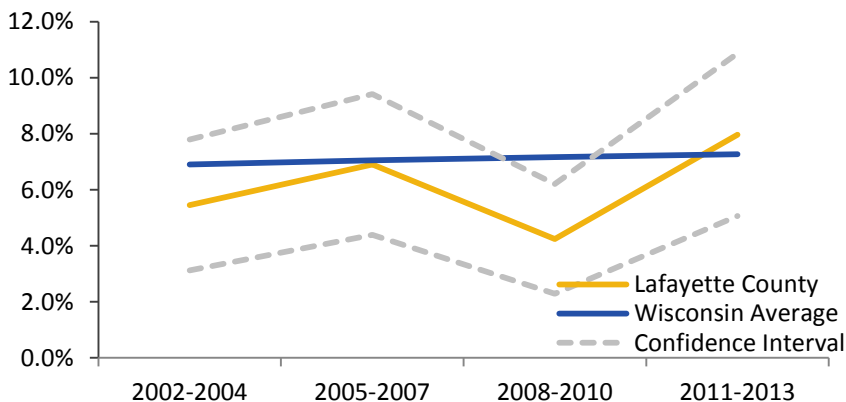
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES LAFAYETTE COUNTY

PRETERM BIRTH

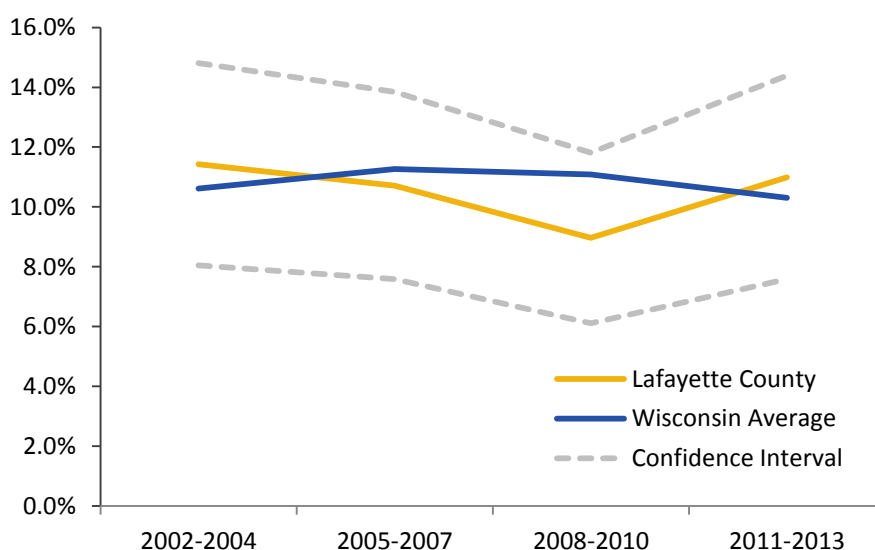
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

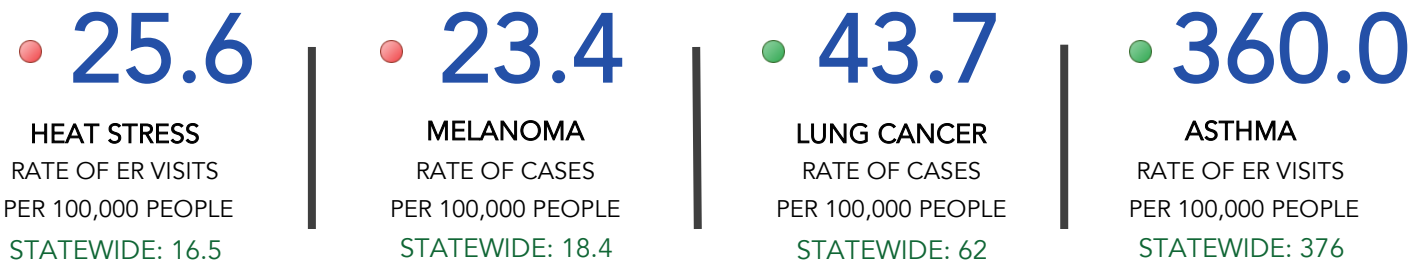
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS LAFAYETTE COUNTY

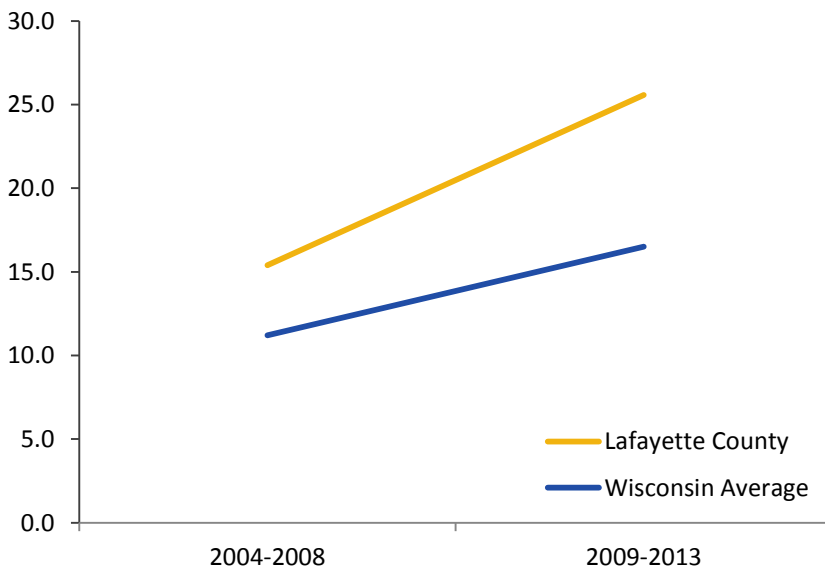
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



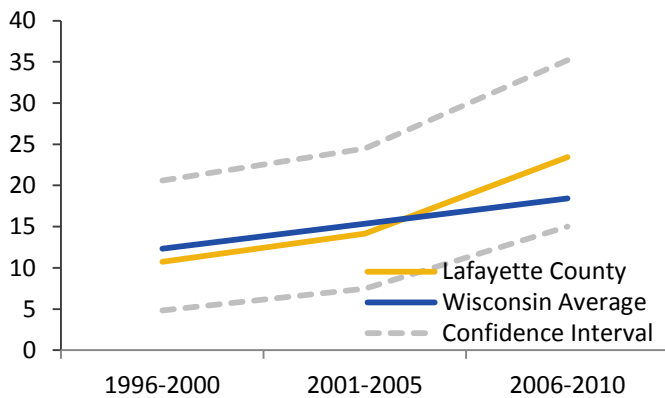


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



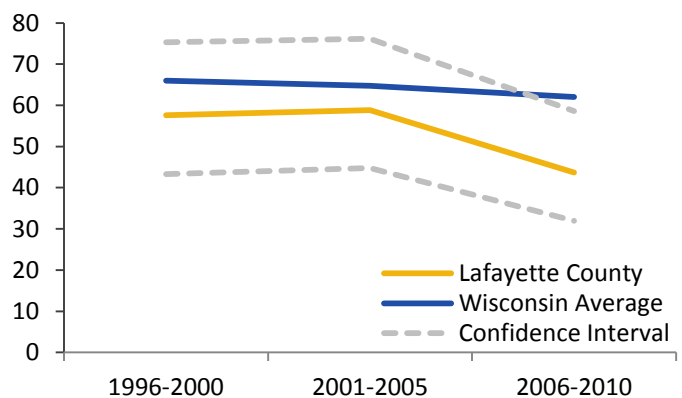
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



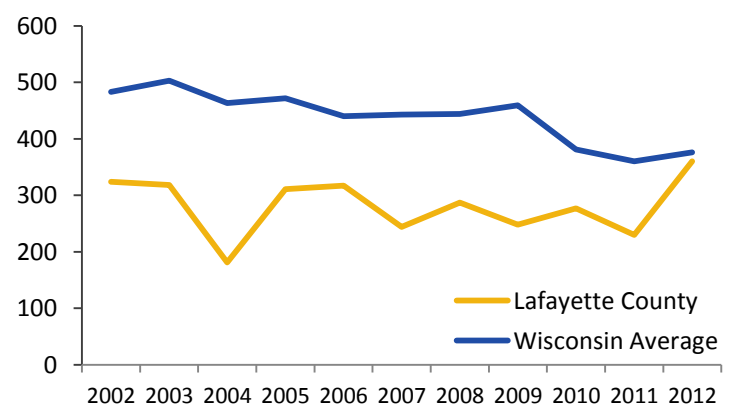
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



LANGLADE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

LANGLADE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.8 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 1.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.0% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.5% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 14.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 9.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 63.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 460.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY LANGLADE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

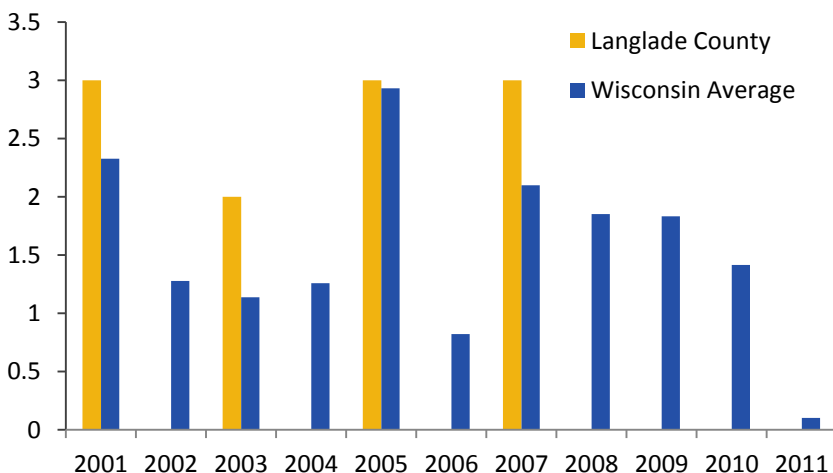
● 8.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

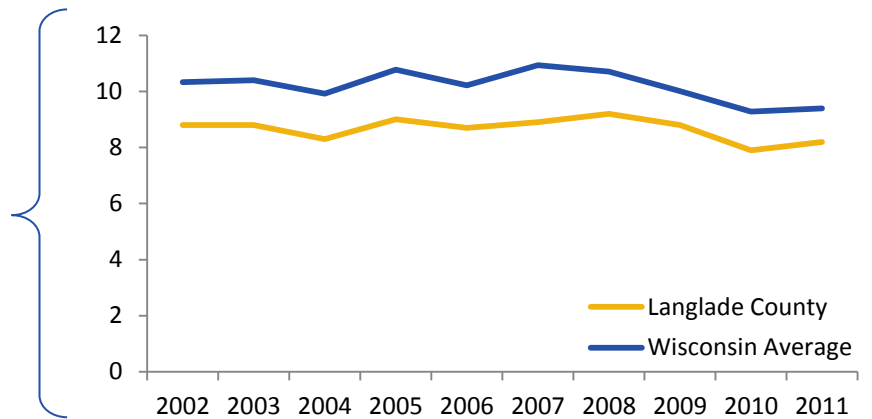
LANGLADE COUNTY

PARTICULATE MATTER 2.5

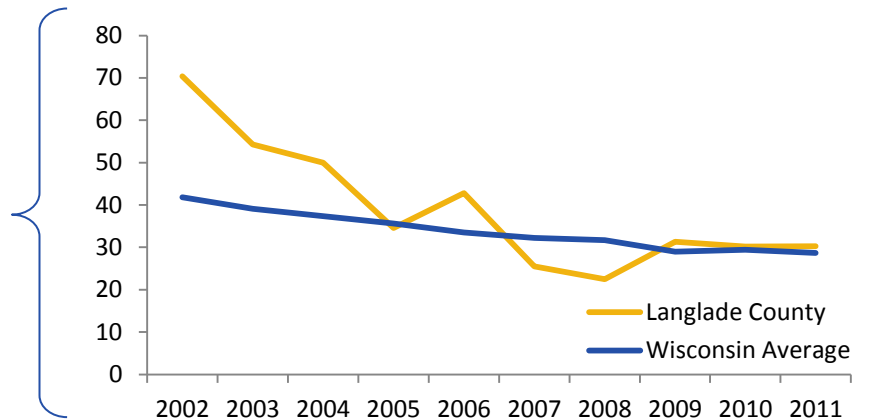
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

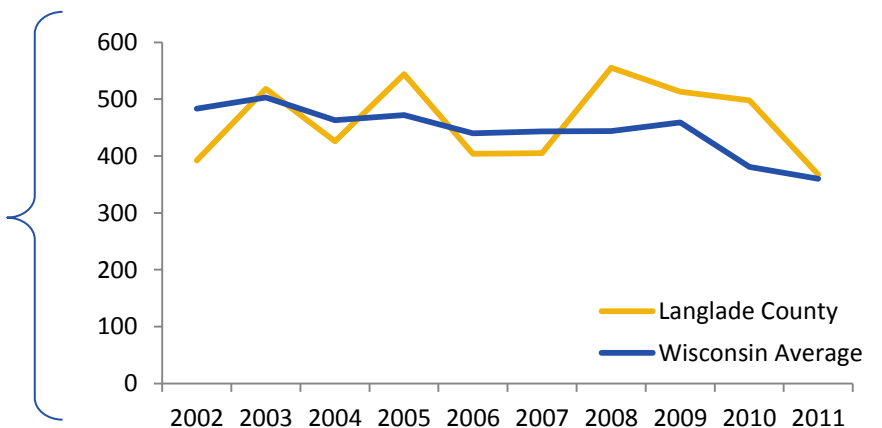
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



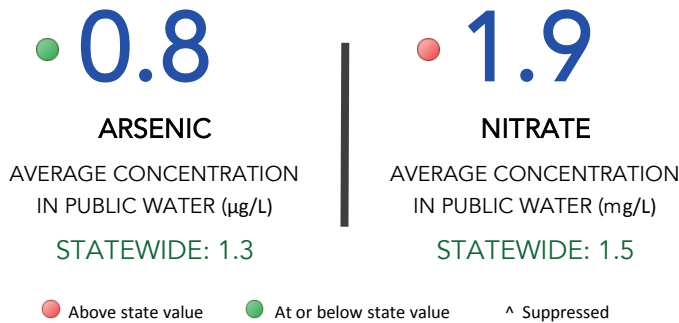
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY LANGLADE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

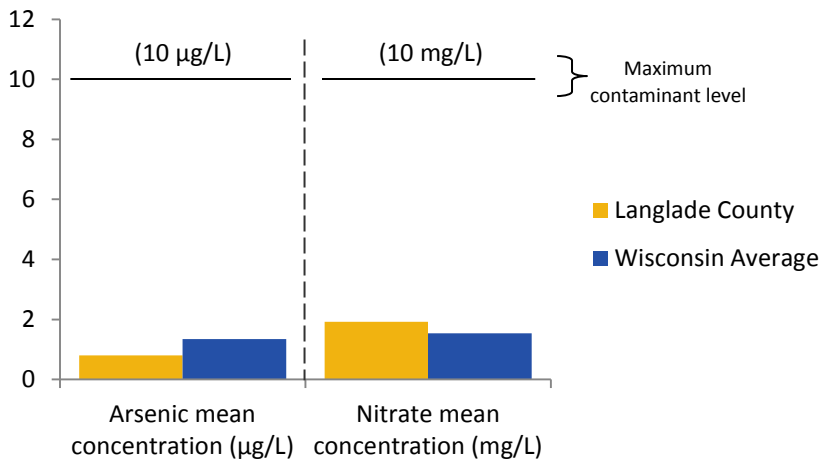
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY LANGLADE COUNTY

PRIVATE DRINKING WATER

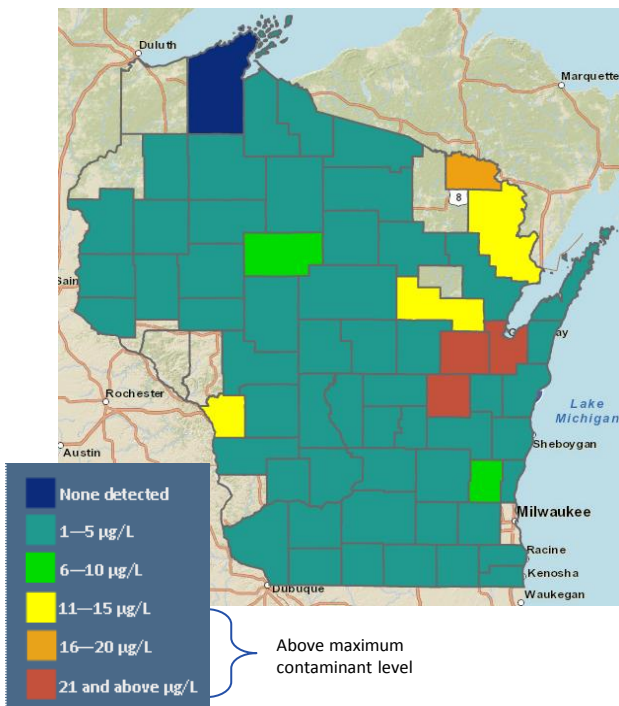
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

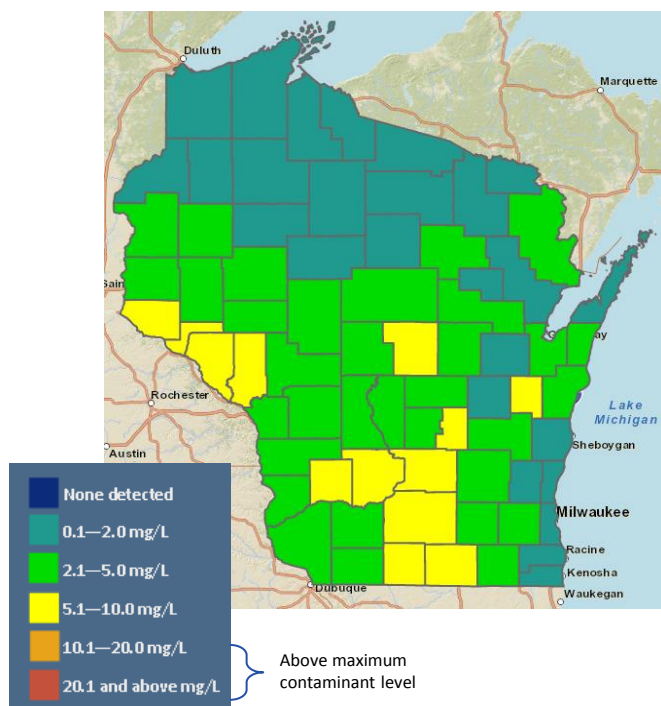
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS LANGLADE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **10.4**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **3.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

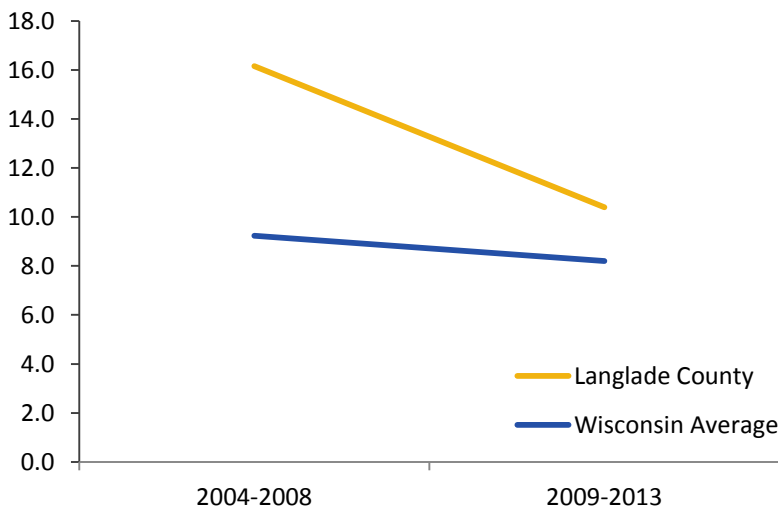
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. § 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

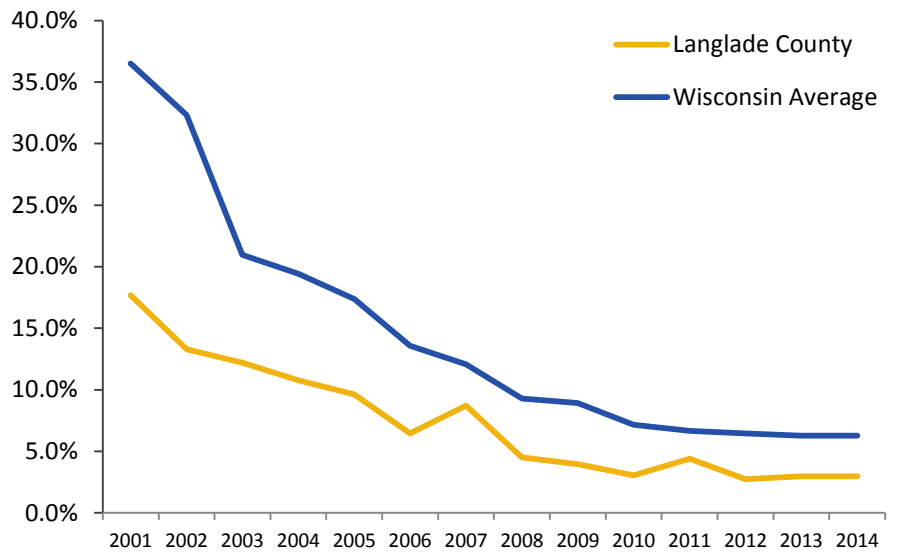
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

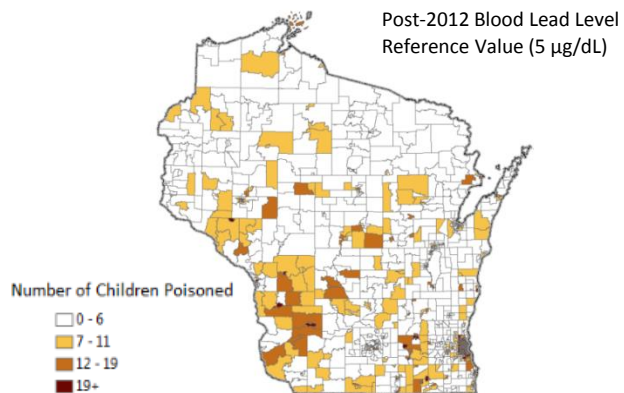
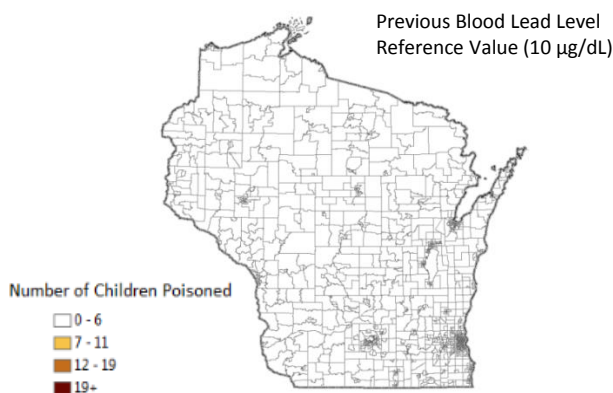
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

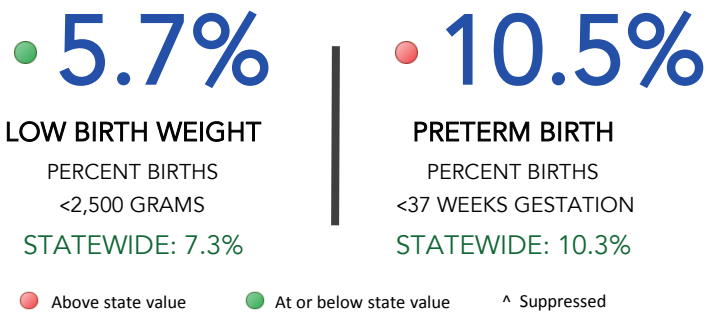
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES LANGLADE COUNTY

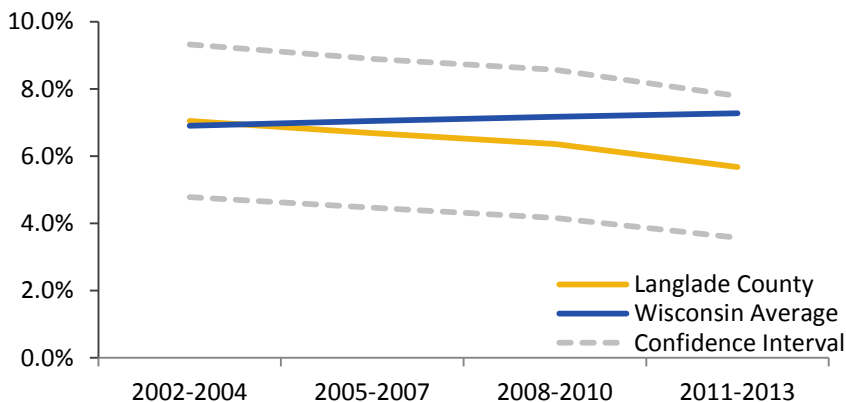
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





PRETERM BIRTH

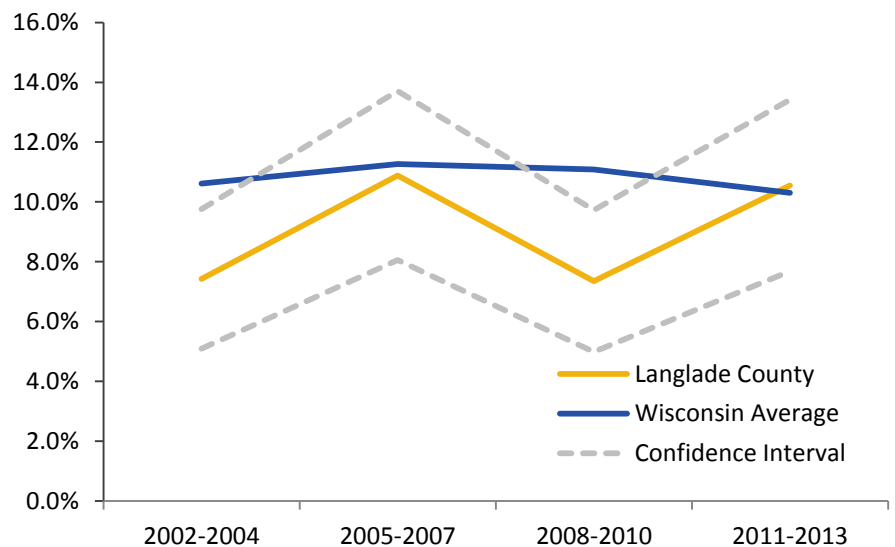
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS LANGLADE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **14.8**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

● **9.0**
MELANOMA
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 18.4

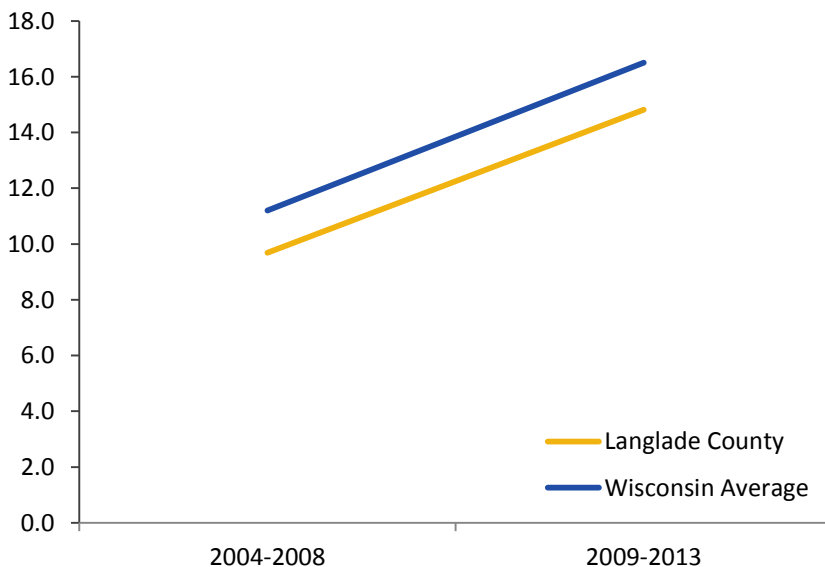
● **63.2**
LUNG CANCER
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 62

● **460.0**
ASTHMA
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht

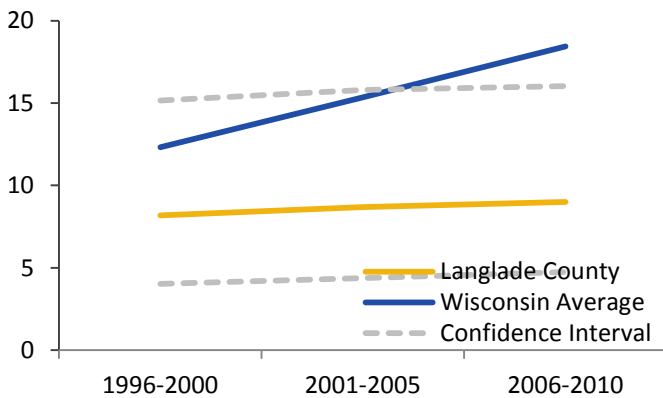


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



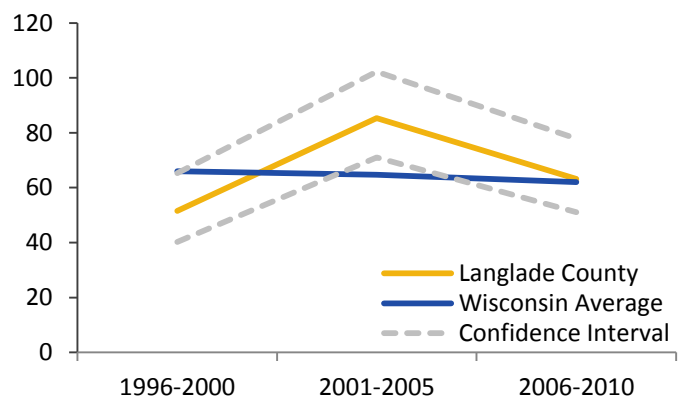
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



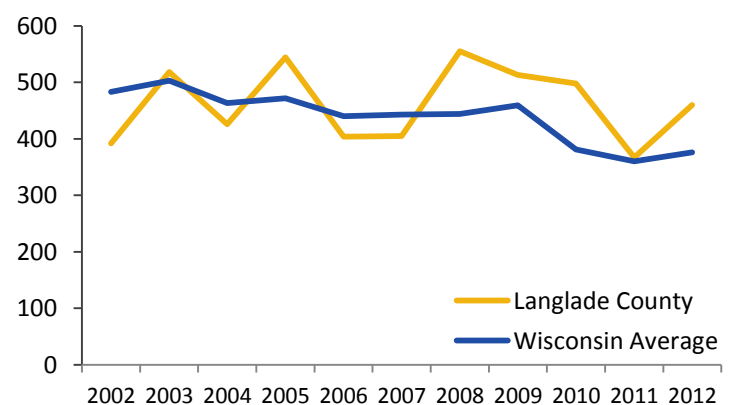
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

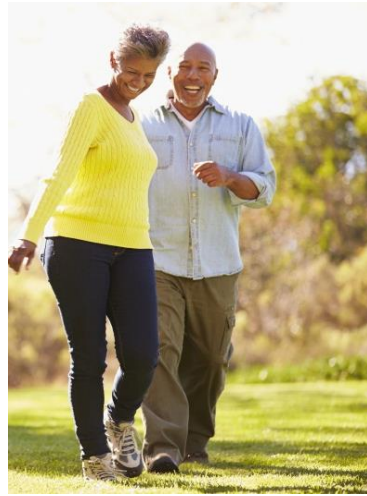
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



LINCOLN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

LINCOLN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.3 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.9% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.8% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 25.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 19.8 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 58.6 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 336.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY LINCOLN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

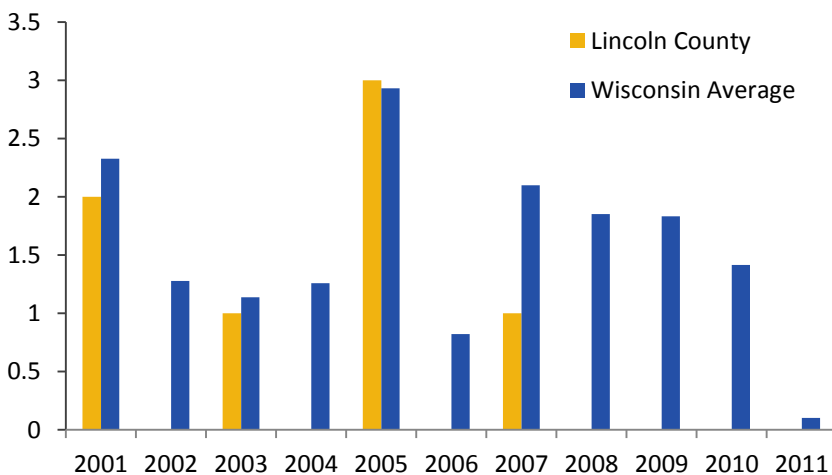
● 8.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

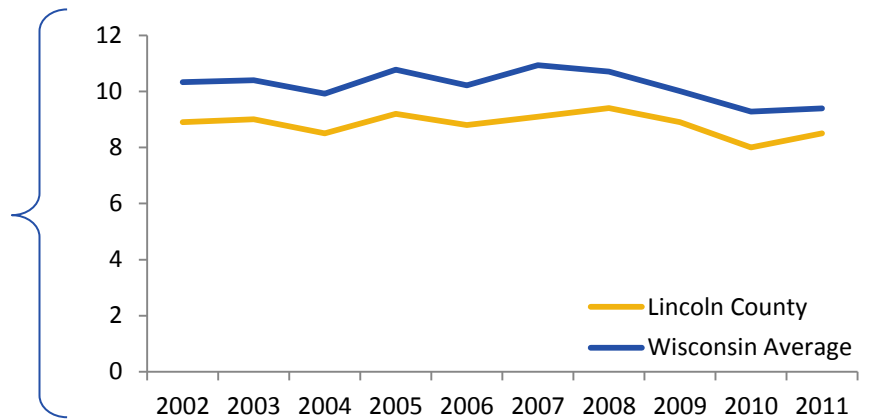
LINCOLN COUNTY

PARTICULATE MATTER 2.5

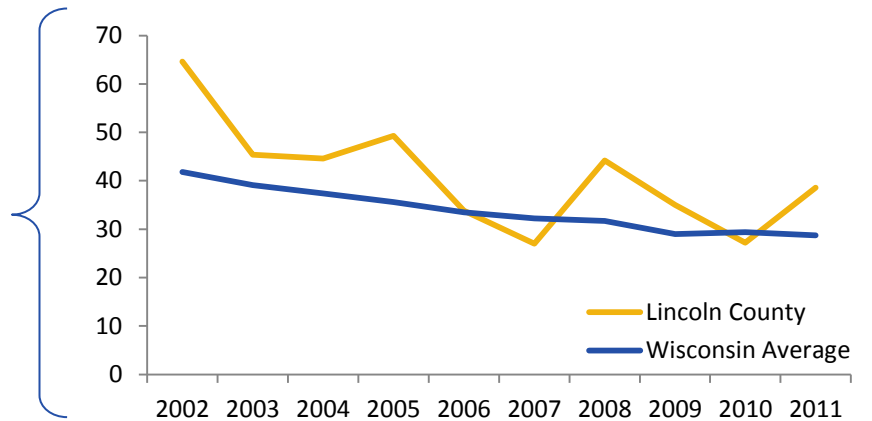
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

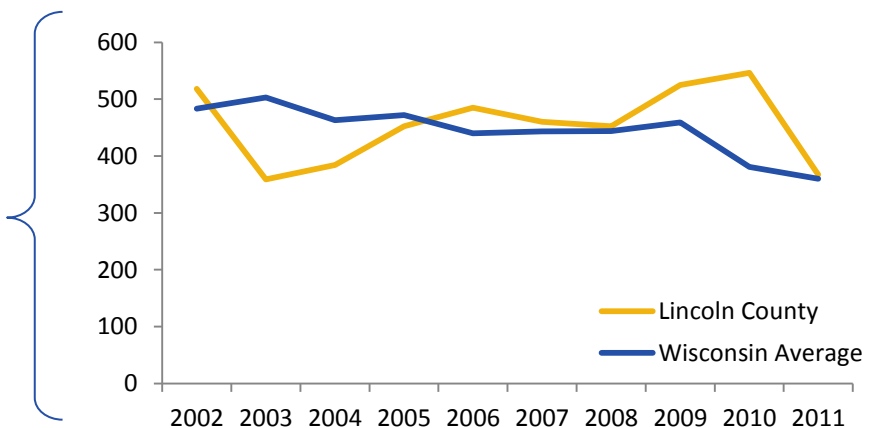
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



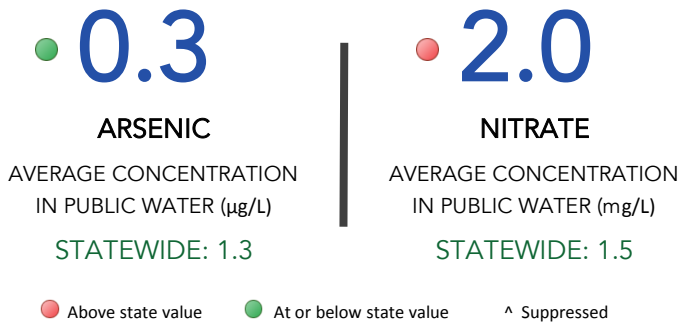
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY LINCOLN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

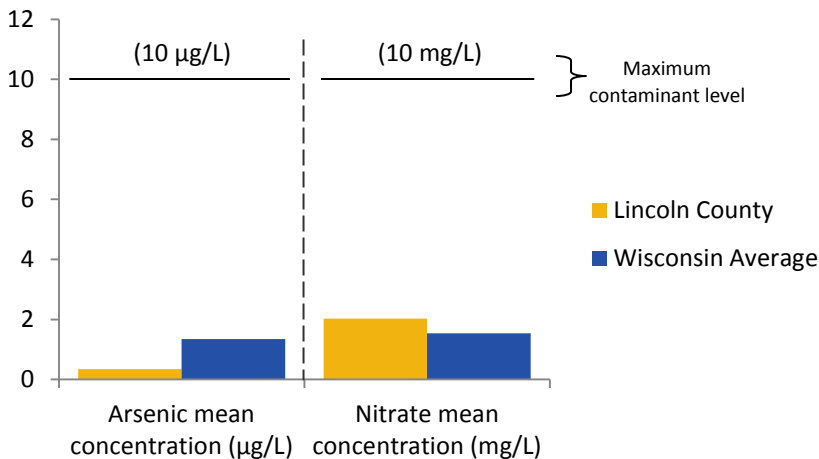
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY LINCOLN COUNTY

PRIVATE DRINKING WATER

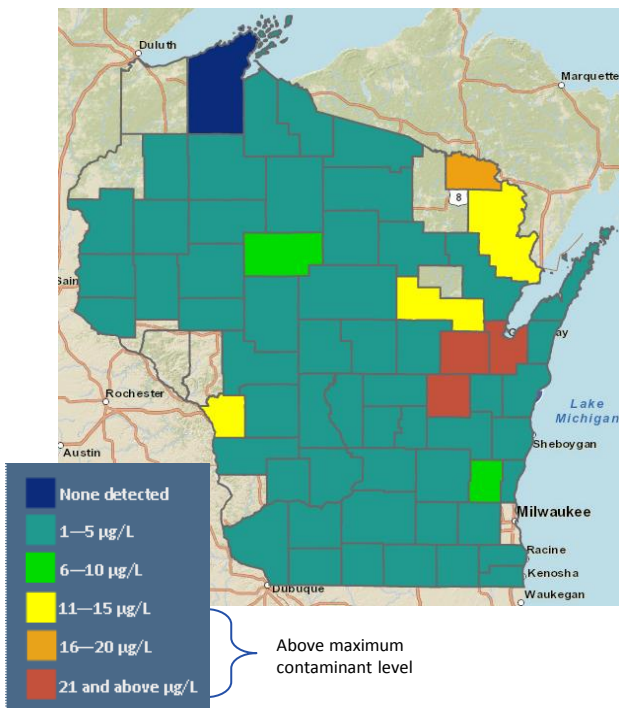
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

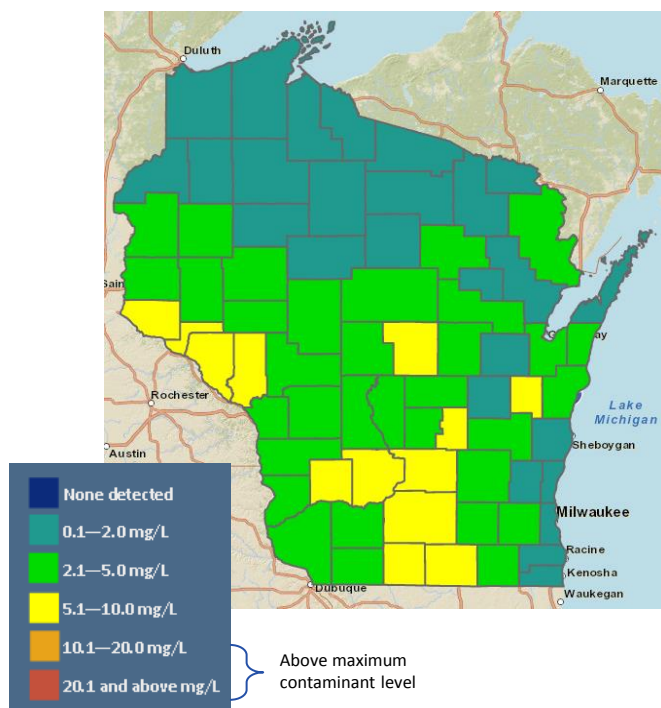
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

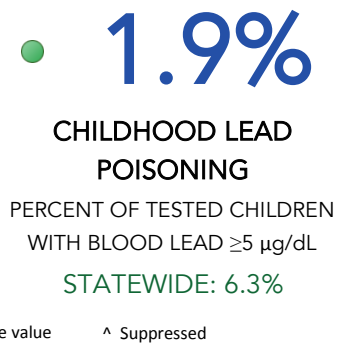
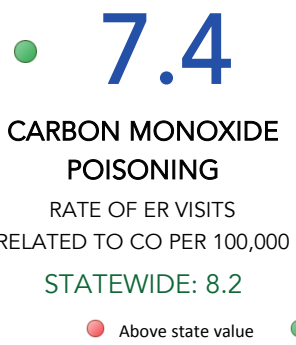


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS LINCOLN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

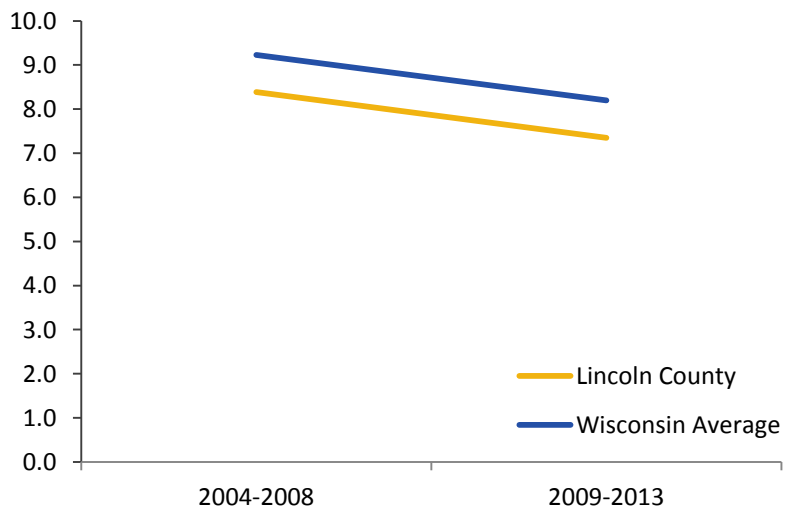


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

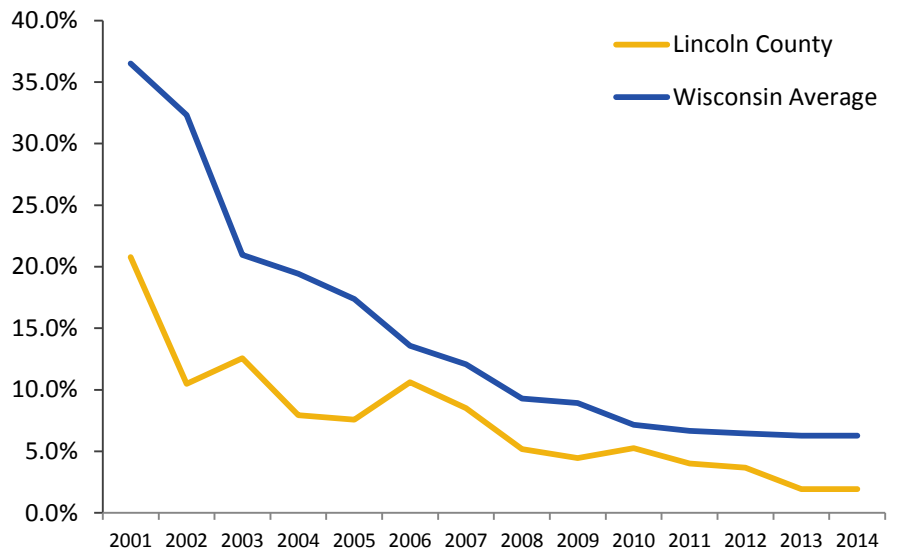
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

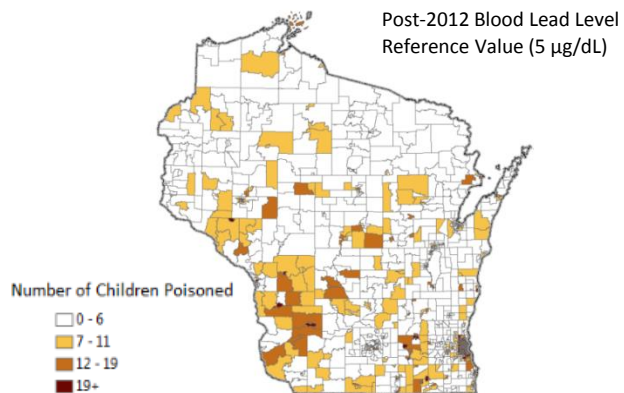
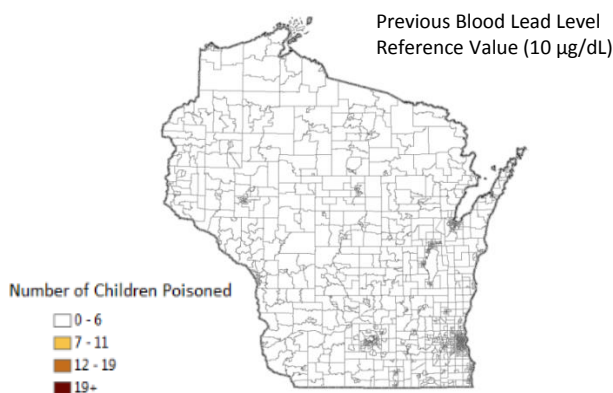
CHILDHOOD LEAD POISONING

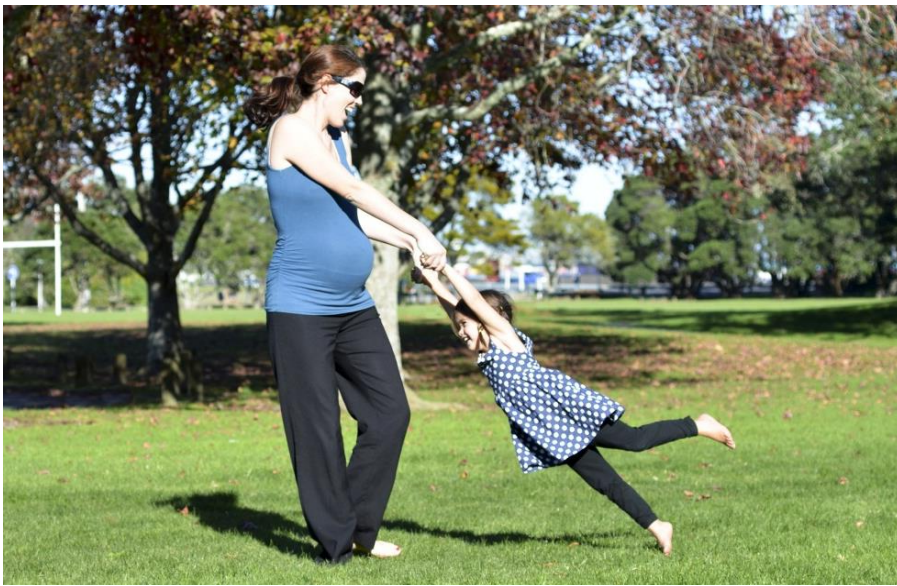
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

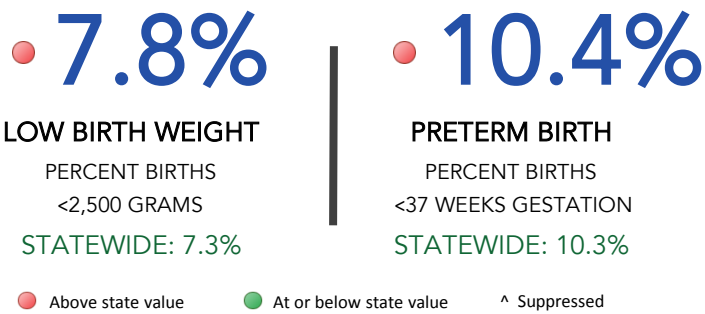
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES LINCOLN COUNTY

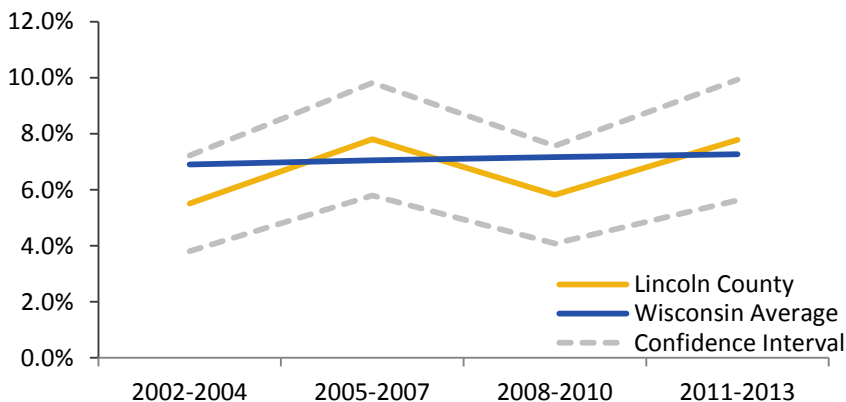
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES LINCOLN COUNTY

PRETERM BIRTH

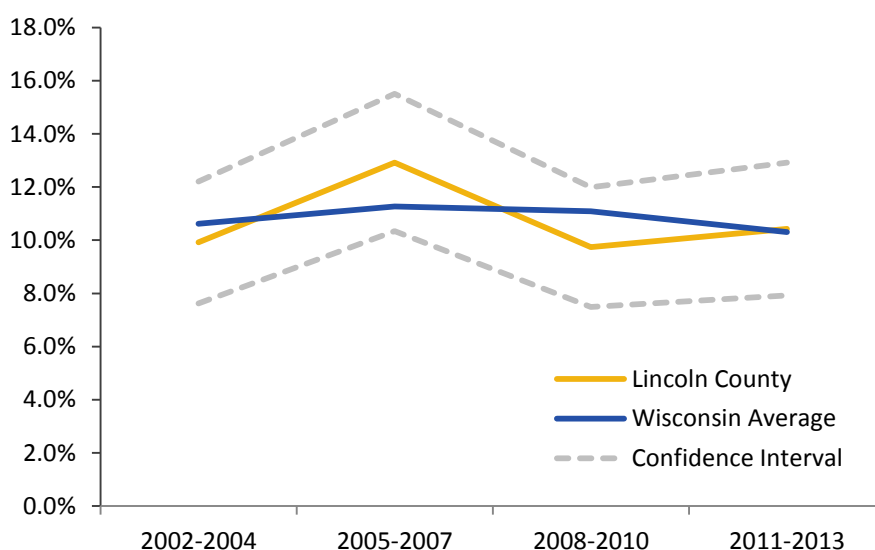
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

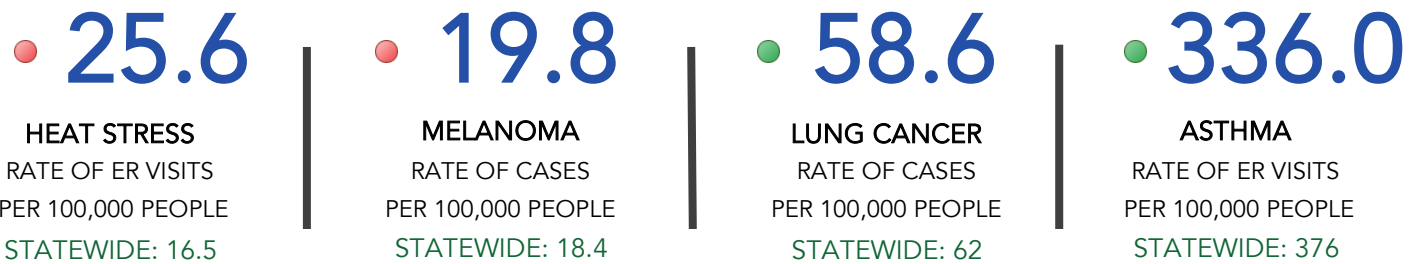
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS LINCOLN COUNTY

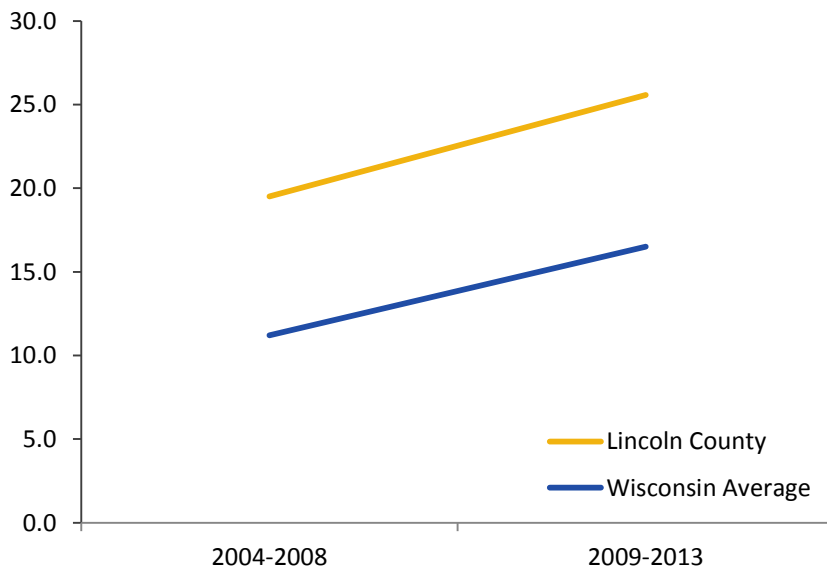
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



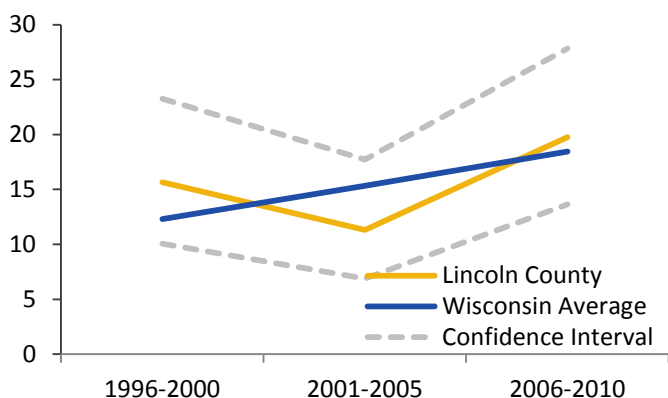


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



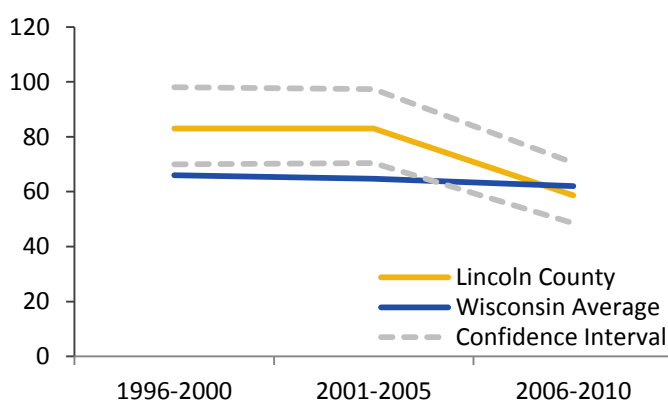
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



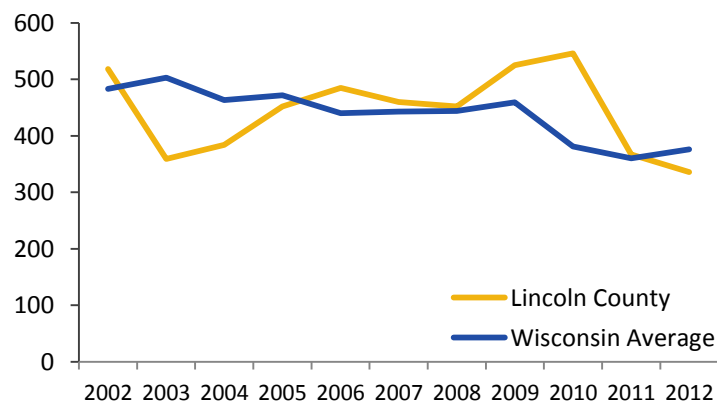
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
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Wisconsin Environmental Public Health Tracking Program
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MAY 2015 | P-00719



MANITOWOC COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
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MANITOWOC COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 4.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.5 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 2.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.4% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.0% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 23.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 32.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 53.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 353.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MANITOWOC COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

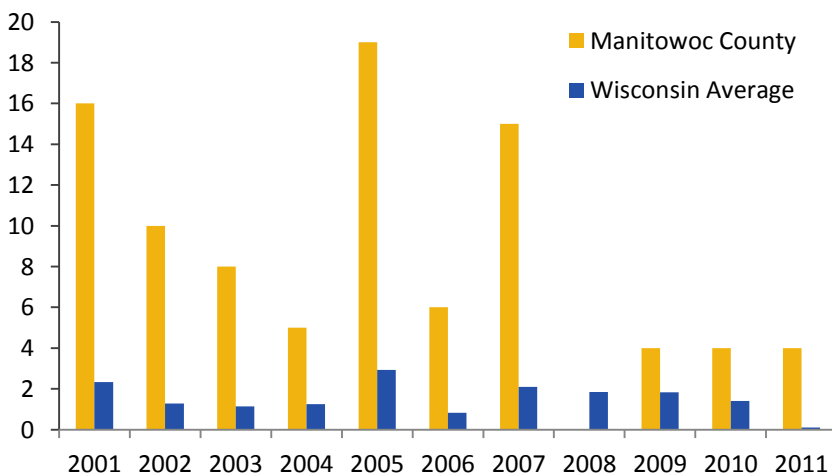
● **4.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **10.1**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

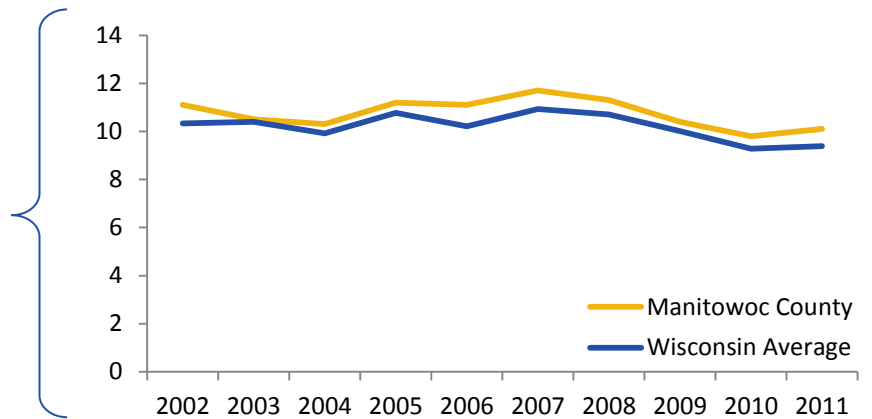
MANITOWOC COUNTY

PARTICULATE MATTER 2.5

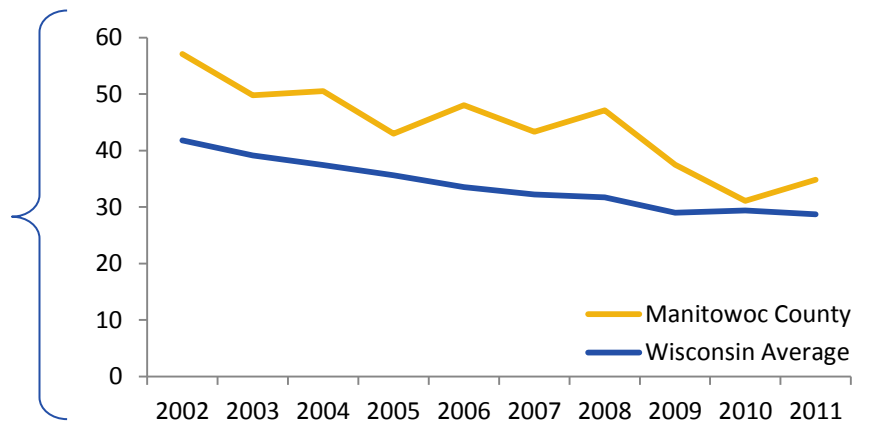
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

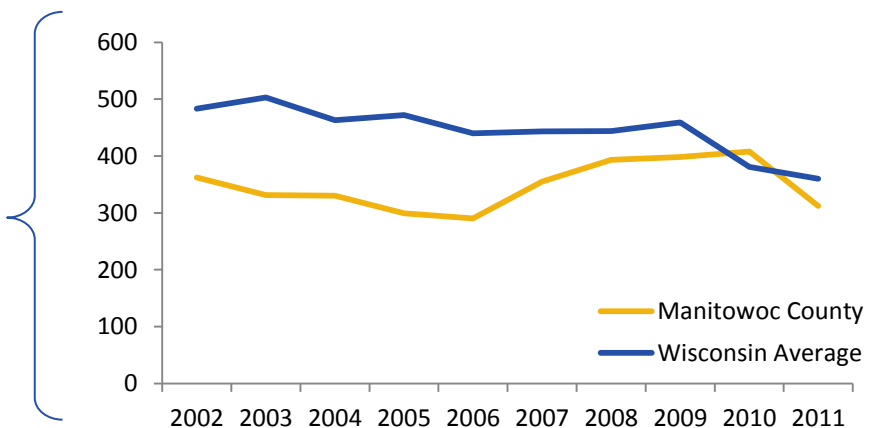
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



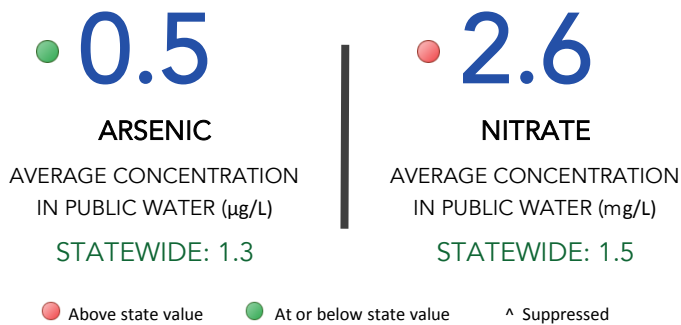
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MANITOWOC COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

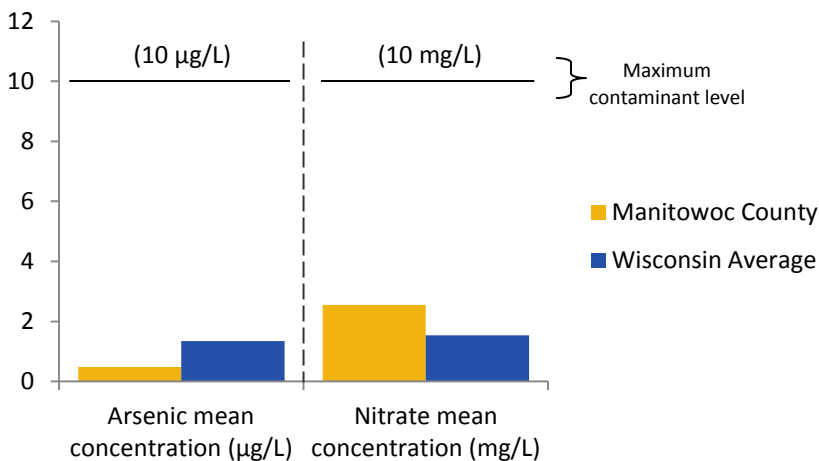
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY MANITOWOC COUNTY

PRIVATE DRINKING WATER

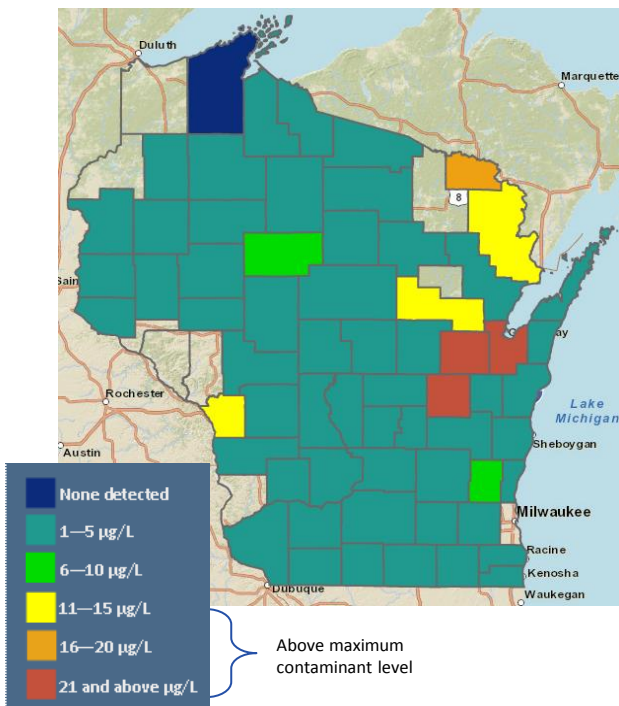
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

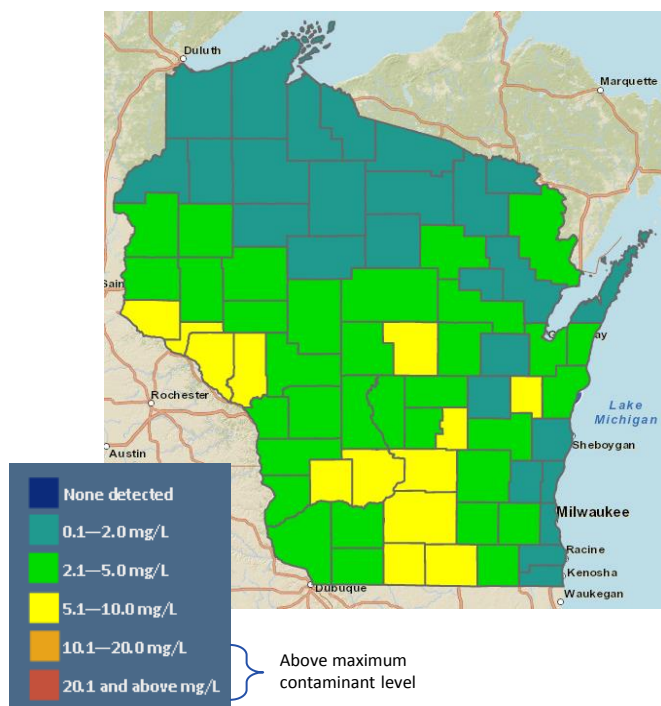
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS MANITOWOC COUNTY

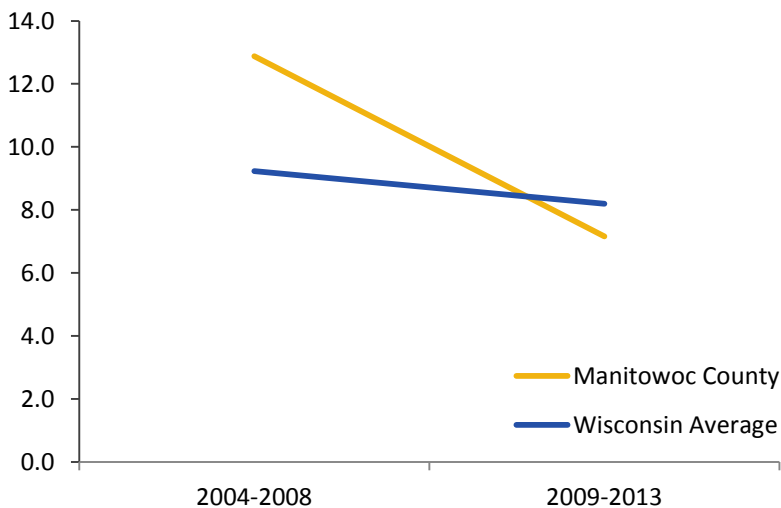
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.2**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2

● **4.4%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

● Above state value ● At or below state value ▲ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

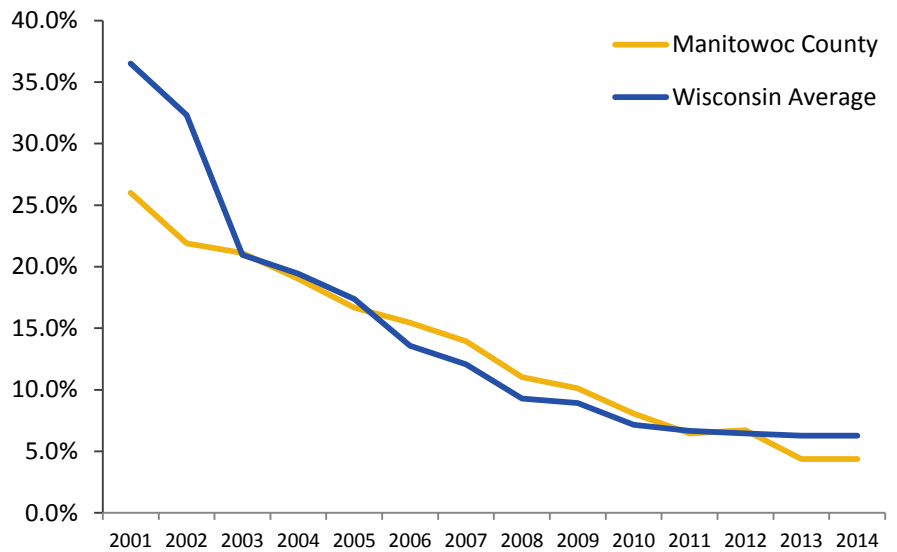
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

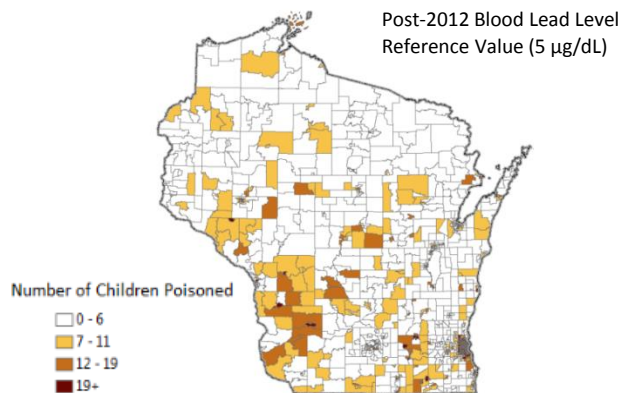
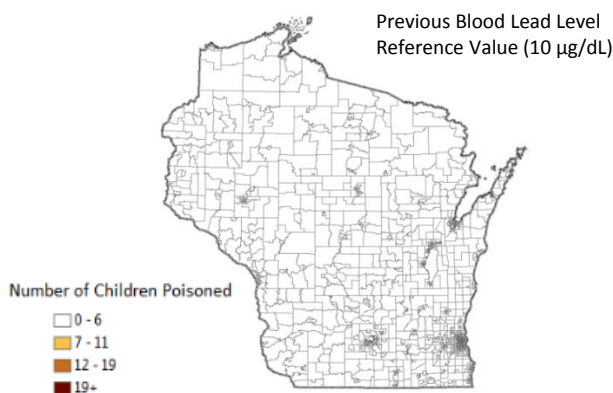
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

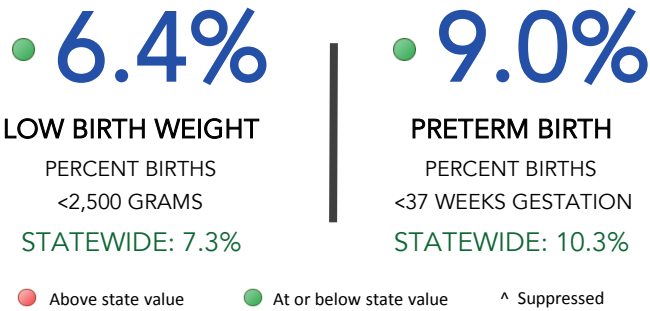
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MANITOWOC COUNTY

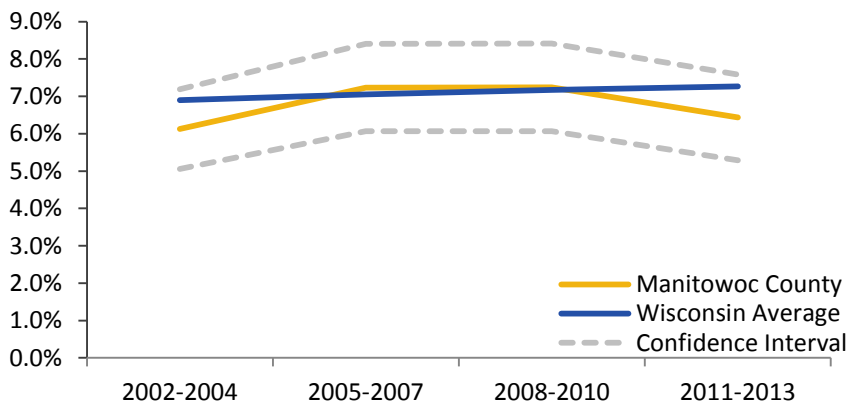
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

MANITOWOC COUNTY

PRETERM BIRTH

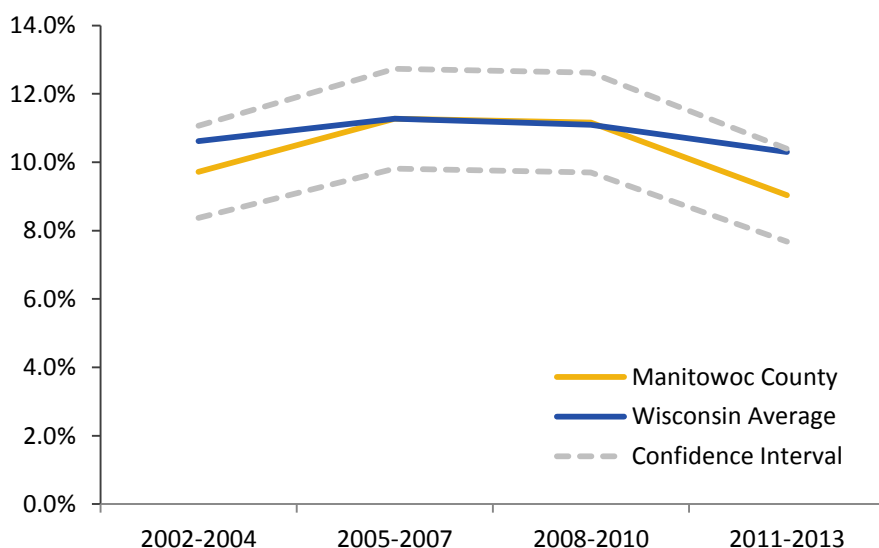
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

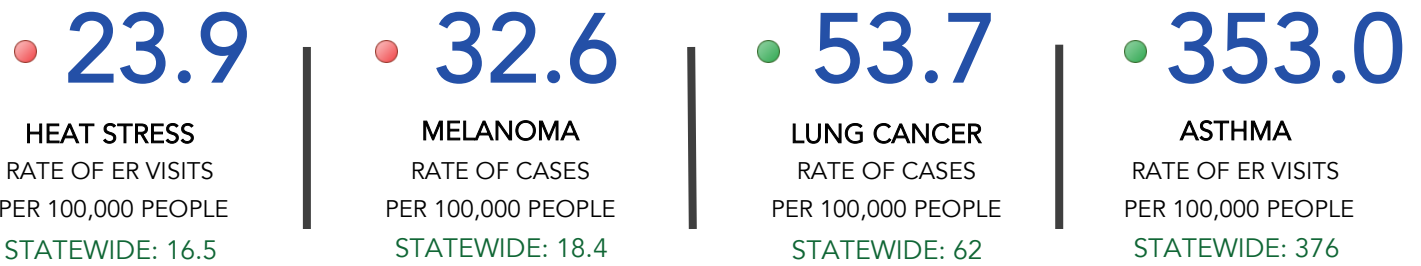
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MANITOWOC COUNTY

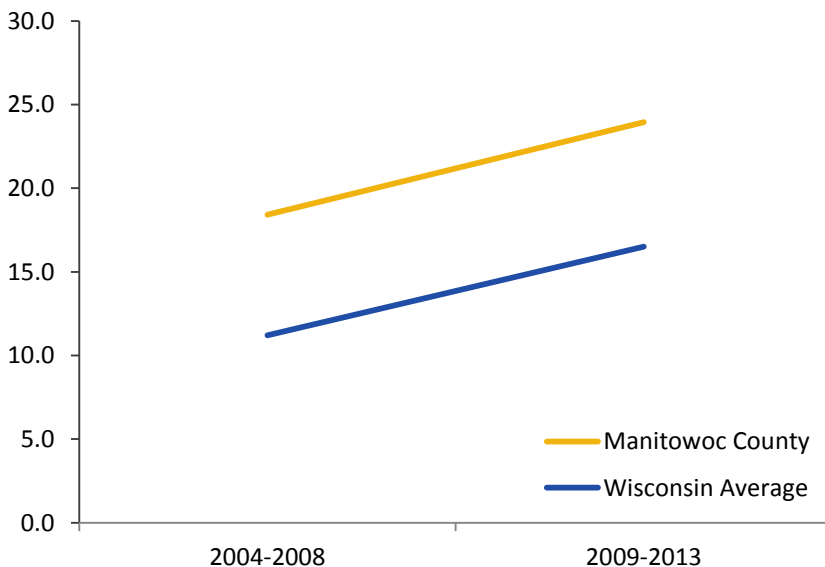
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



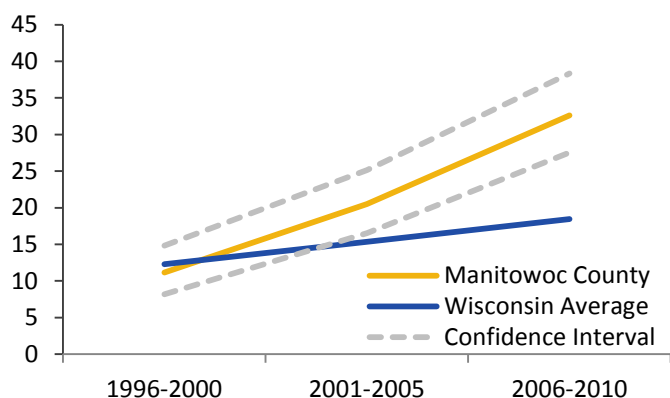


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



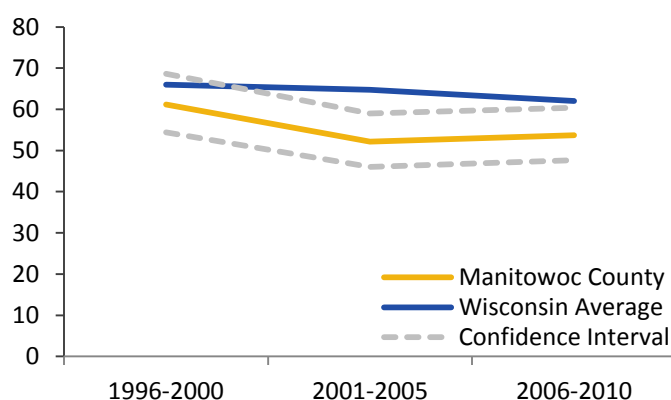
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



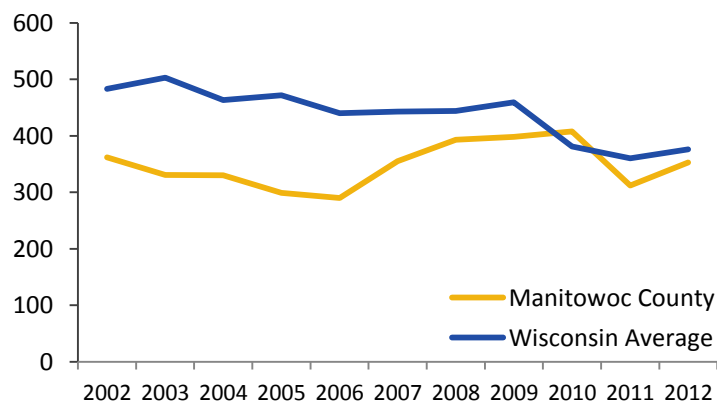
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

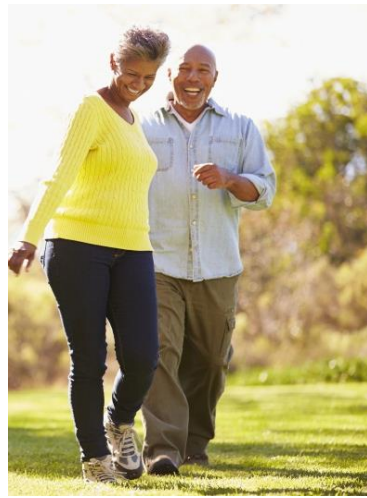
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



MARATHON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MARATHON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.4 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 3.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 8.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.0% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.1% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 13.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 18.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 56.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 236.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MARATHON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

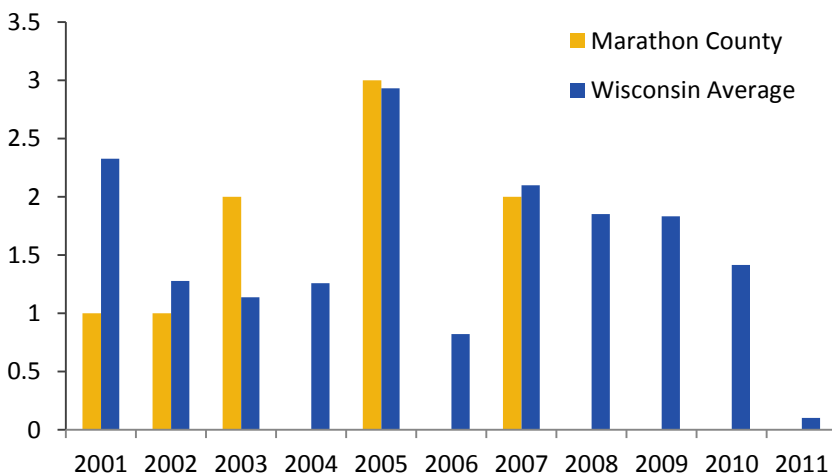
● 9.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

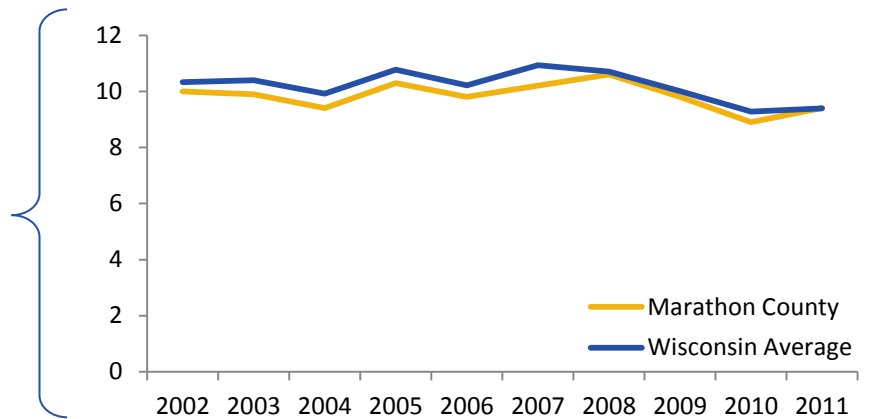
MARATHON COUNTY

PARTICULATE MATTER 2.5

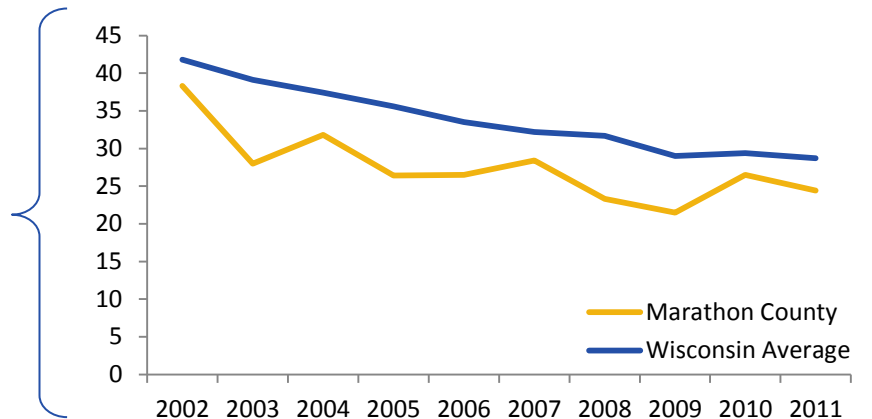
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

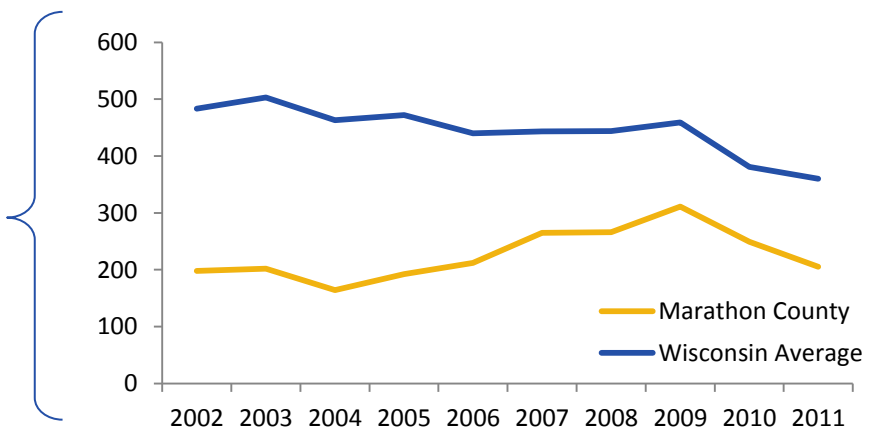
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



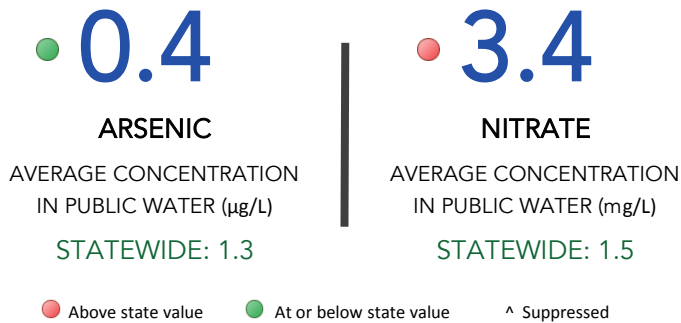
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MARATHON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

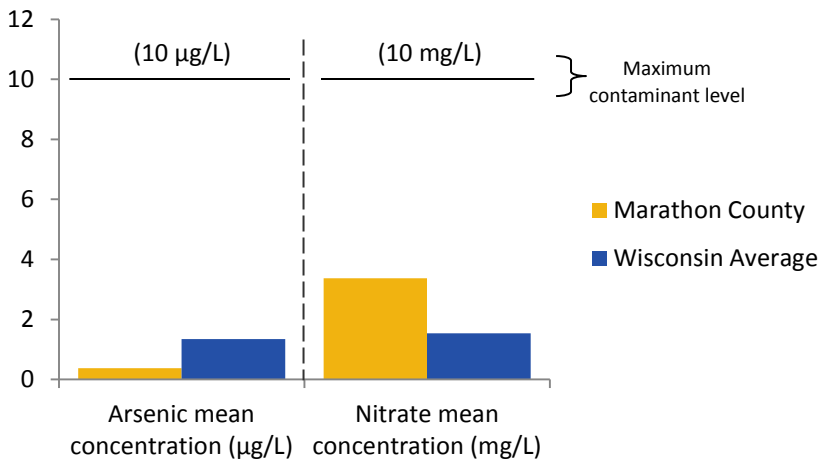
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY MARATHON COUNTY

PRIVATE DRINKING WATER

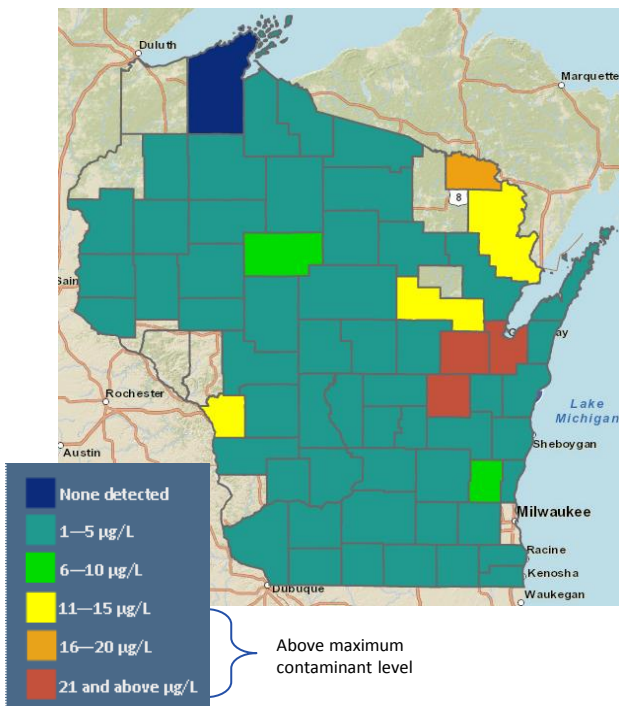
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

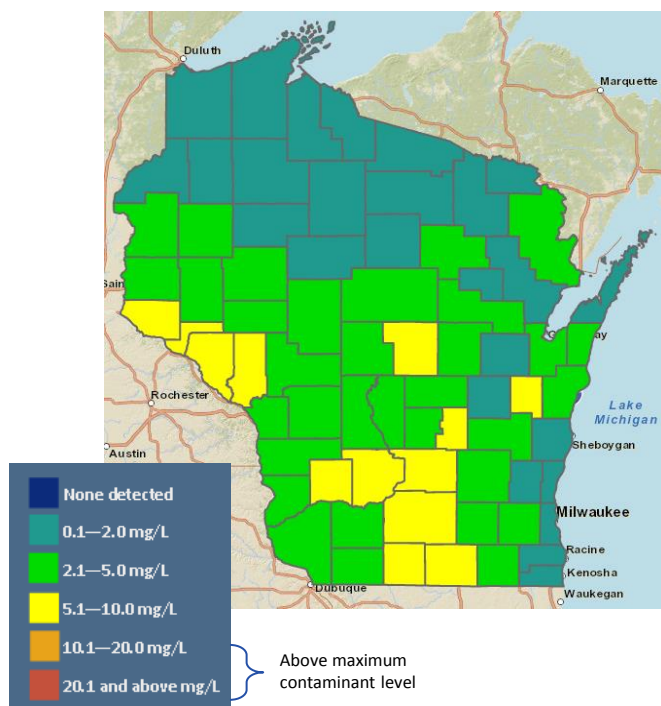
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

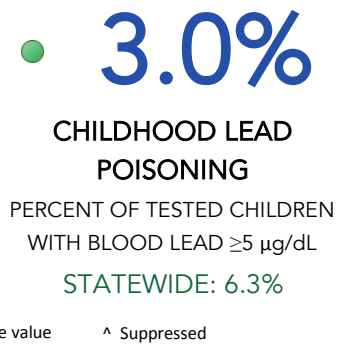
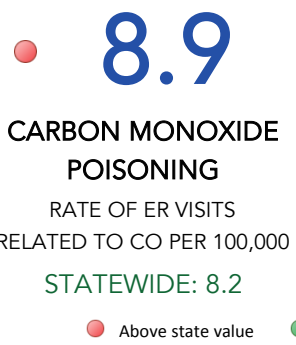


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

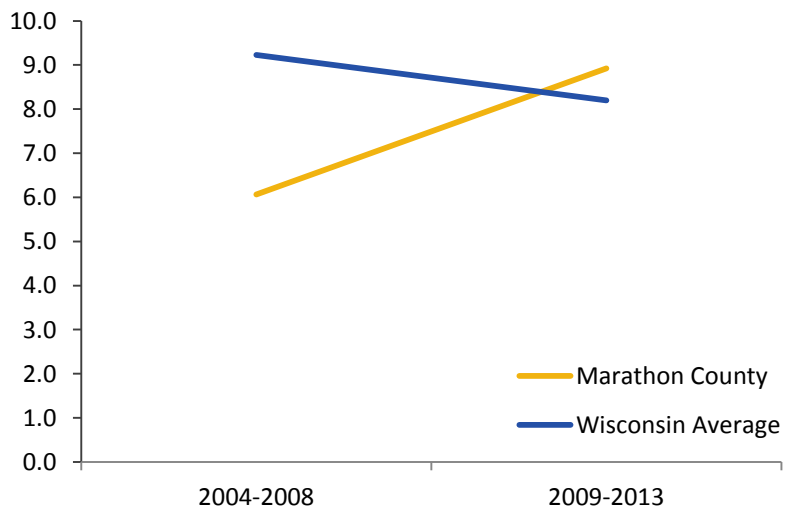


HOME HAZARDS MARATHON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

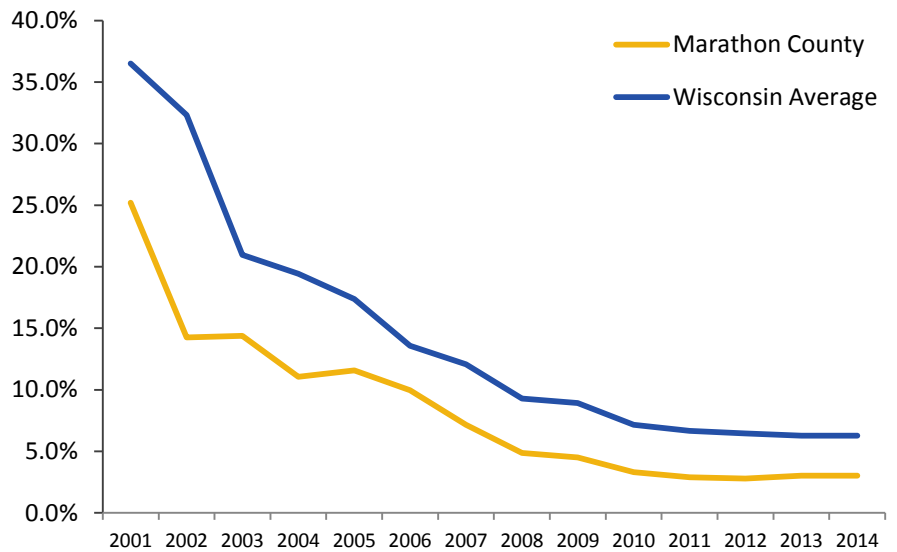
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

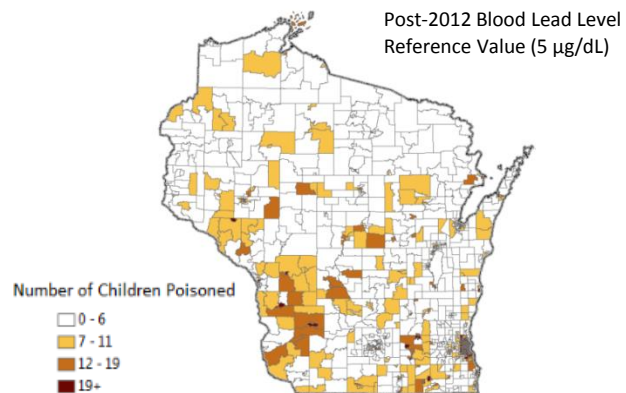
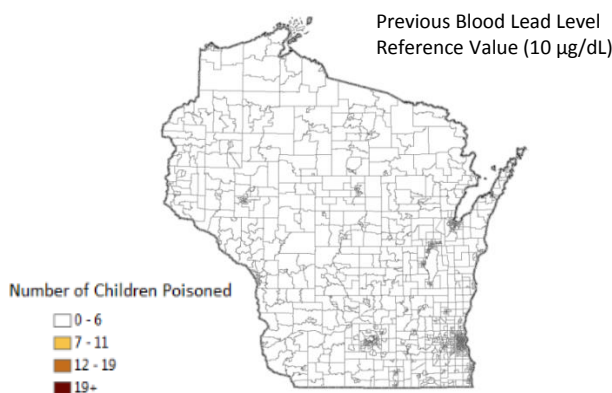
CHILDHOOD LEAD POISONING

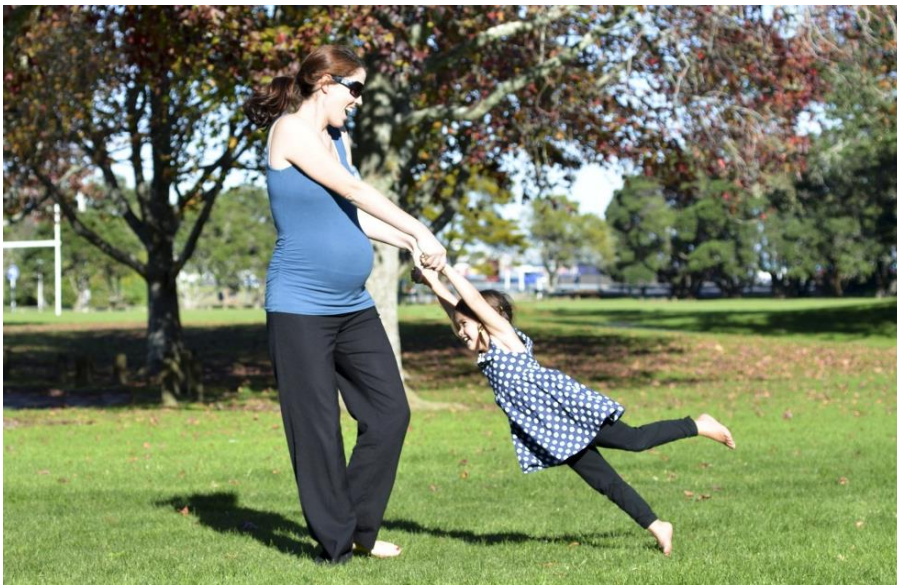
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MARATHON COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.1%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.9%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

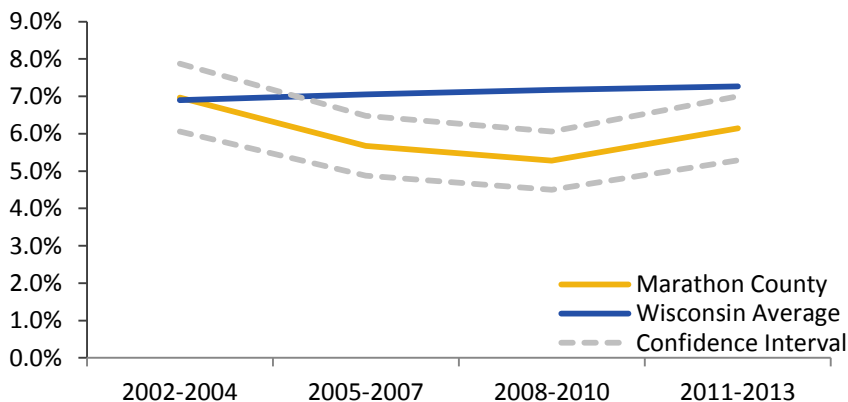
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

MARATHON COUNTY

PRETERM BIRTH

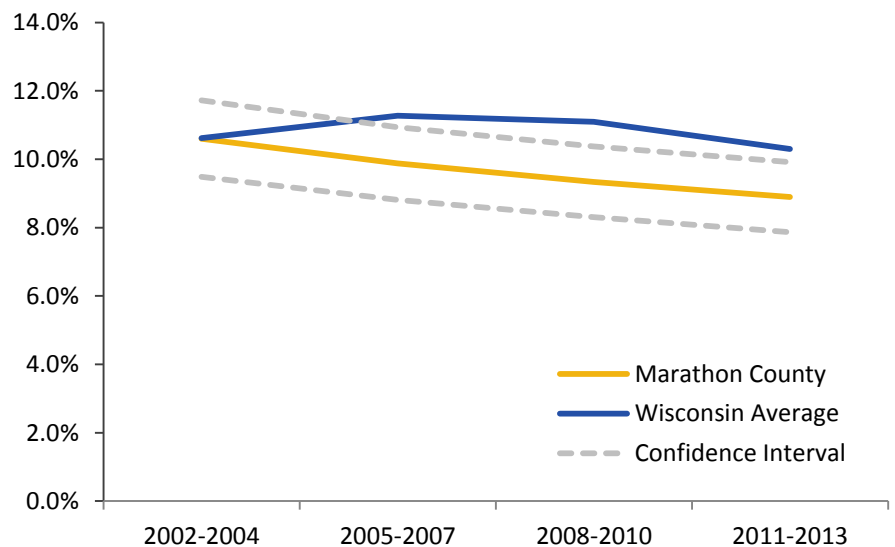
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MARATHON COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **13.8**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **18.3**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **56.5**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

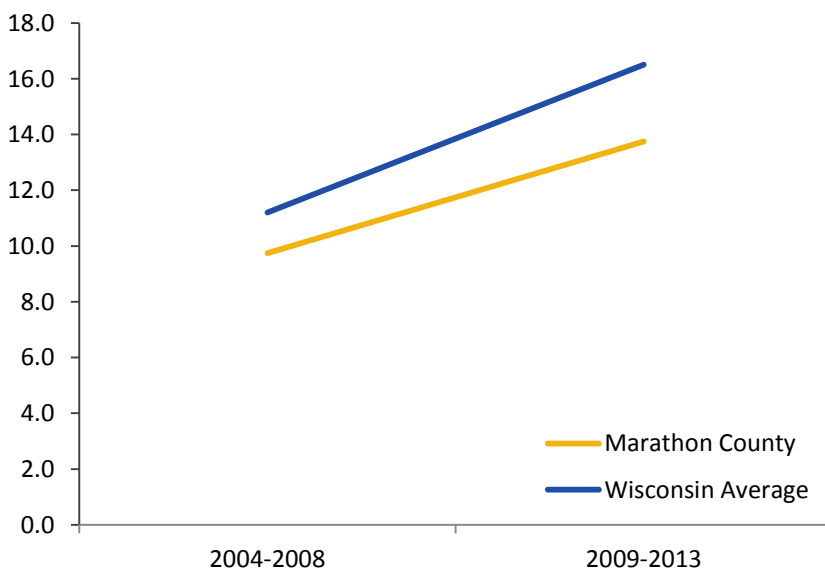
● **236.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



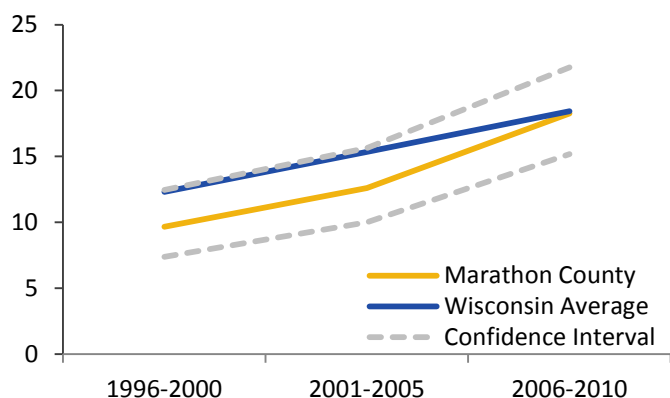


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



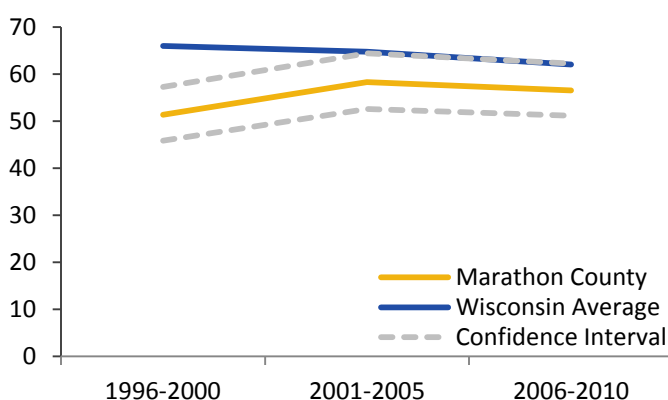
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



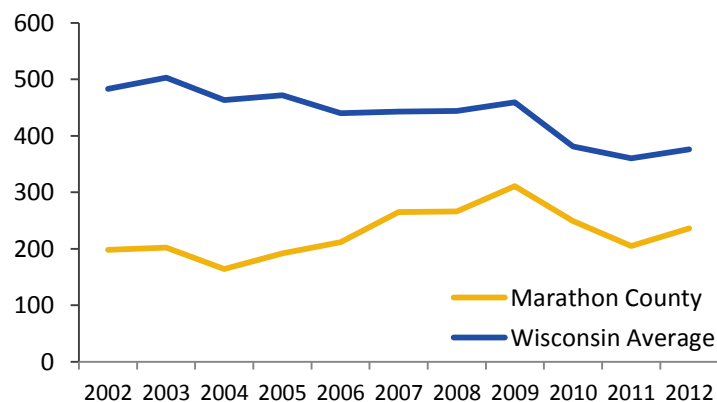
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

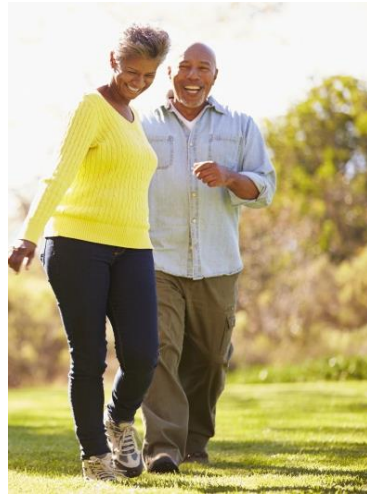
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



MARINETTE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MARINETTE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 5.0 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.1 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 12.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.3% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.3% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.2% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 30.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 22.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 65.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 583.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MARINETTE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● **2.0**

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● **0.0**

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

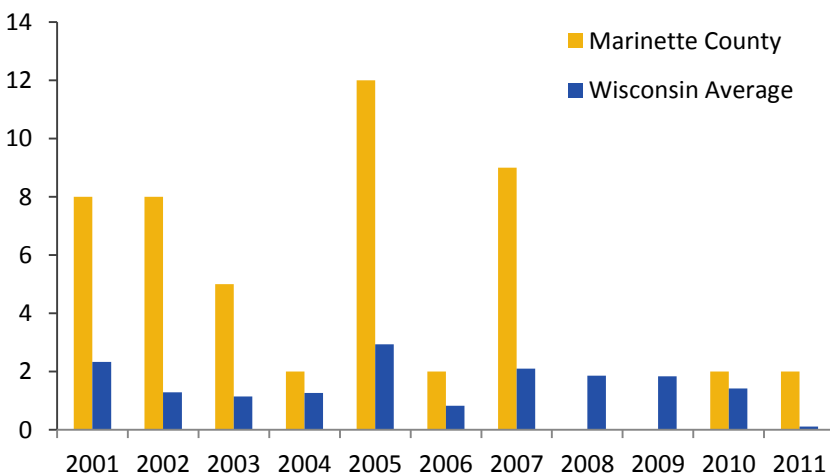
● **9.1**

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

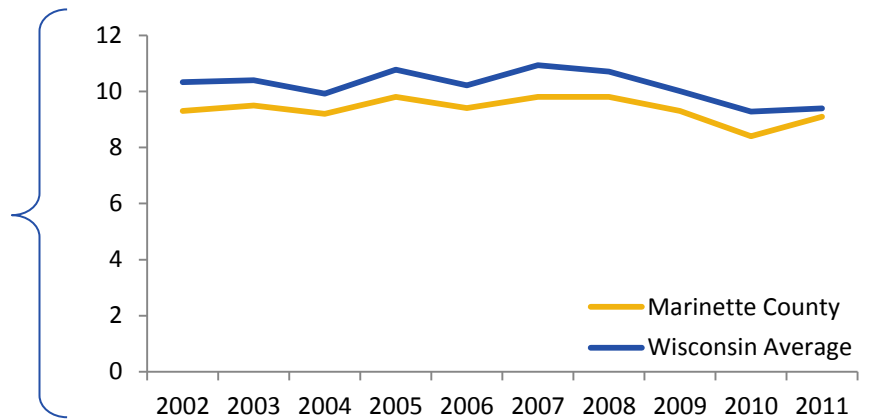
MARINETTE COUNTY

PARTICULATE MATTER 2.5

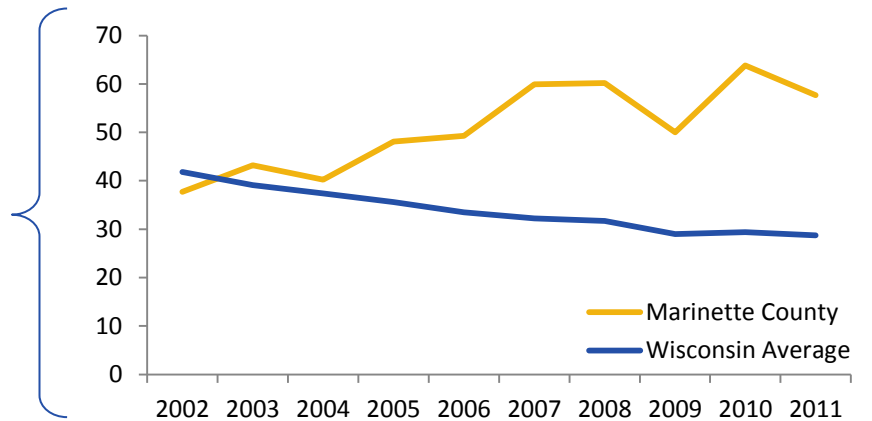
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

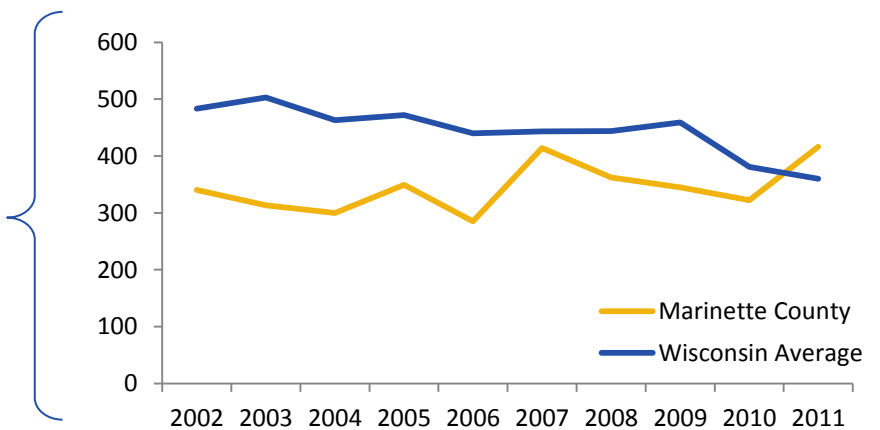
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MARINETTE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

• **5.0**

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

• **2.1**

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

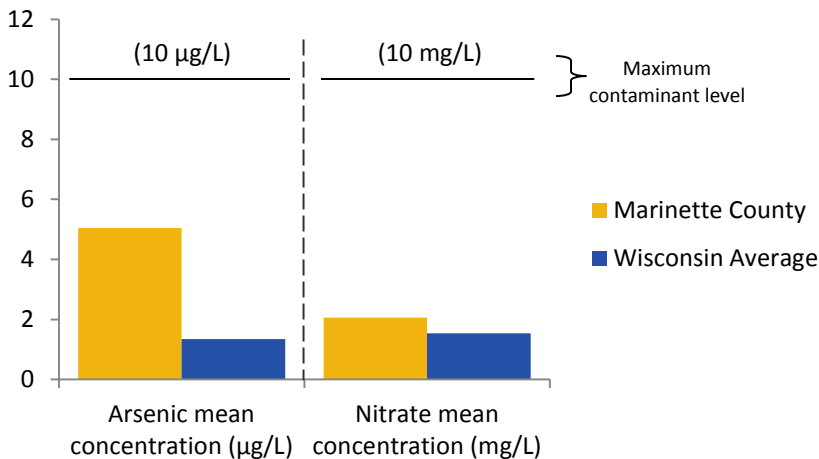
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY MARINETTE COUNTY

PRIVATE DRINKING WATER

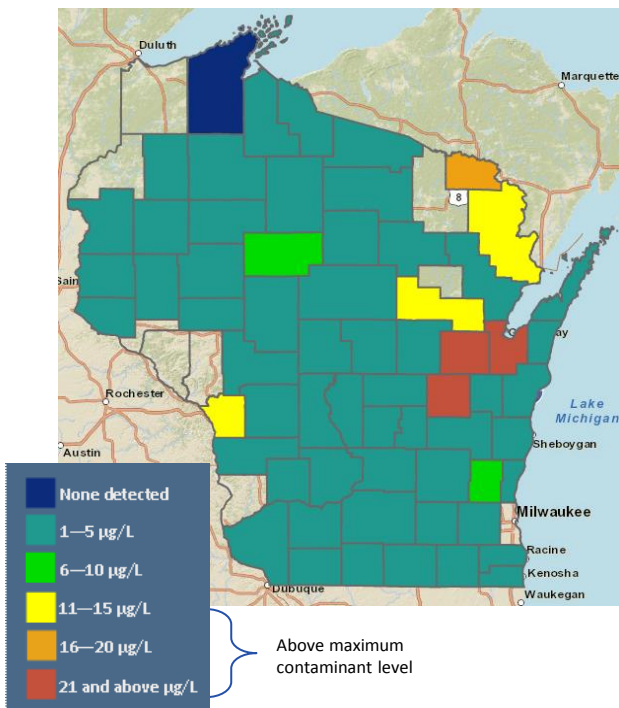
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

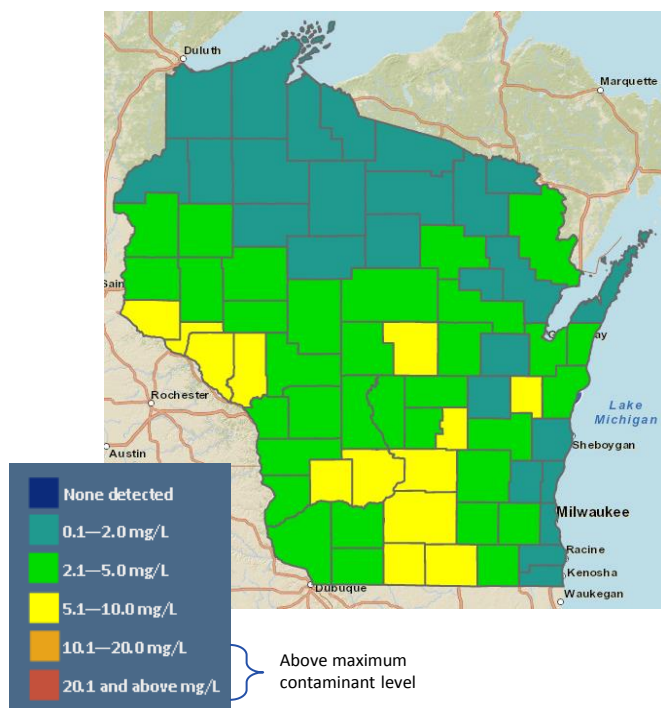
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

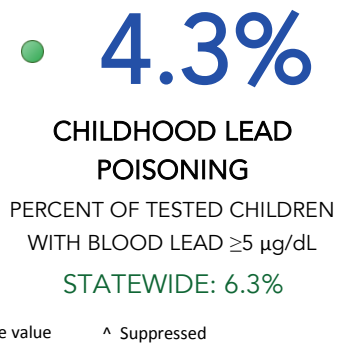
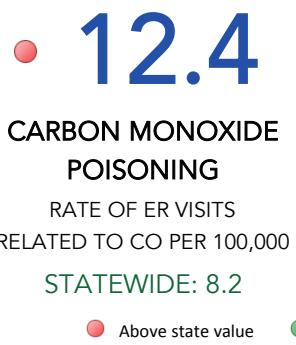


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS MARINETTE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

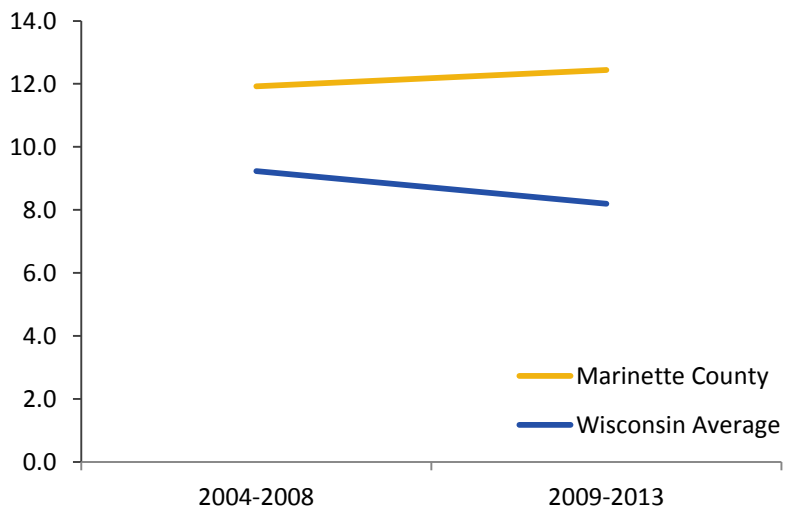


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

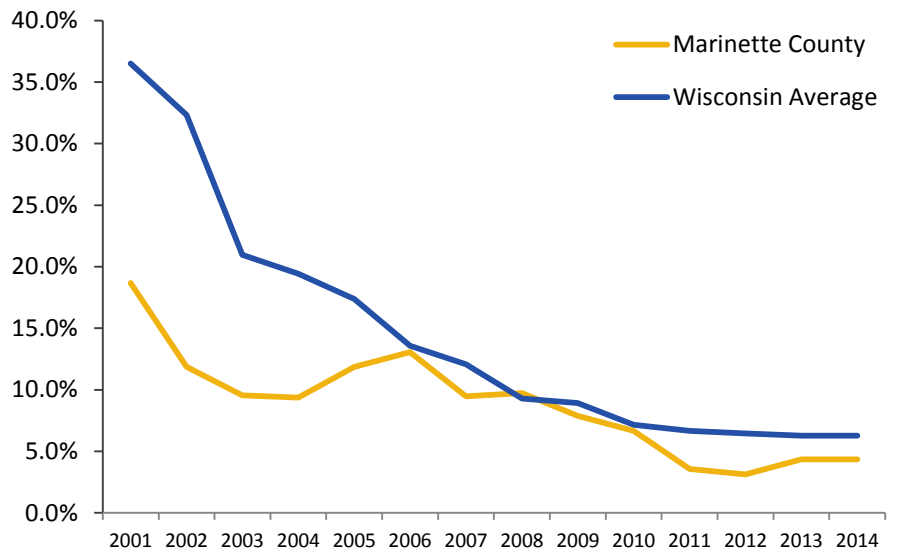
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

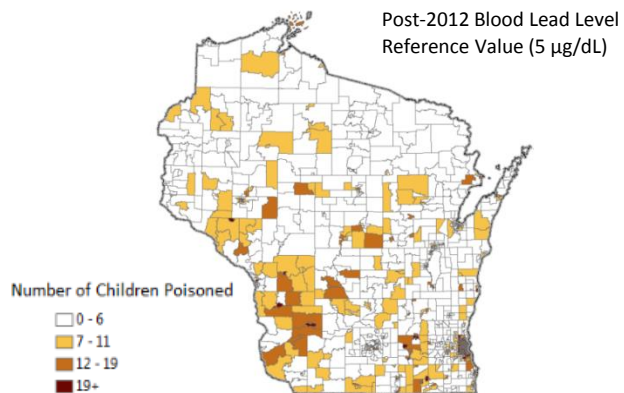
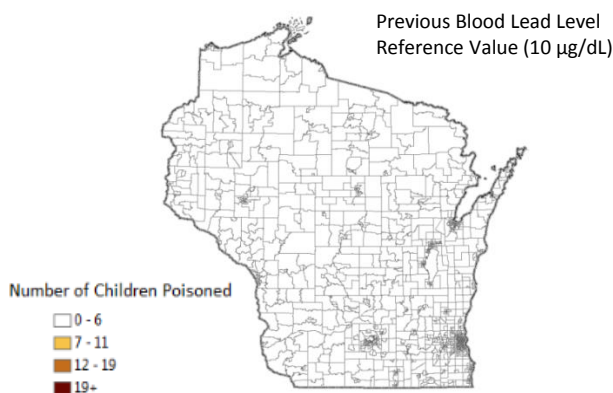
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MARINETTE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **7.3%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.2%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

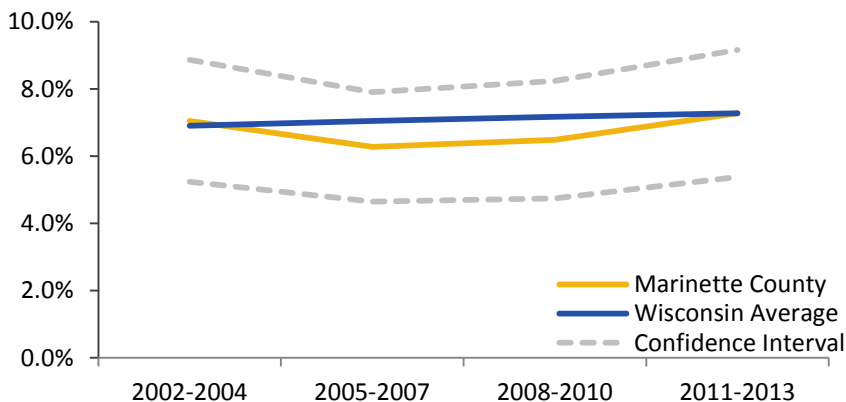
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

MARINETTE COUNTY

PRETERM BIRTH

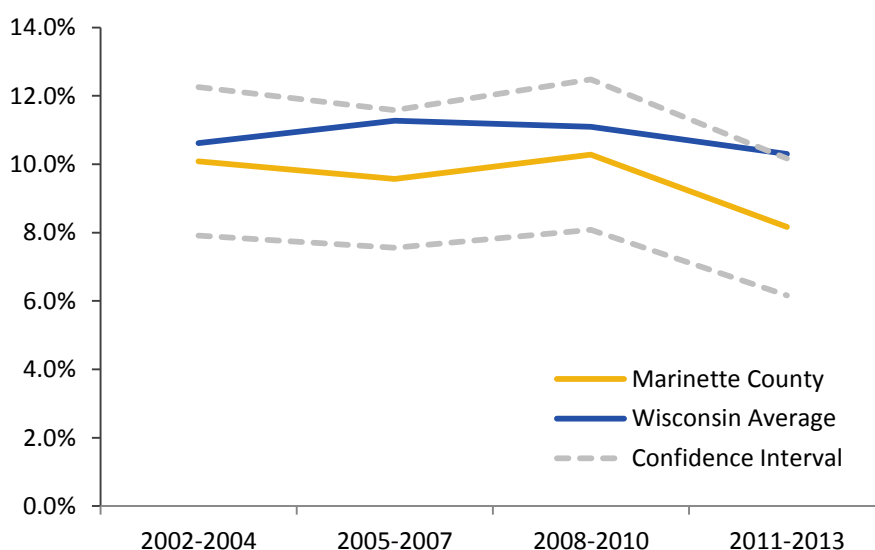
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MARINETTE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

• **30.1**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

• **22.6**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

• **65.7**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

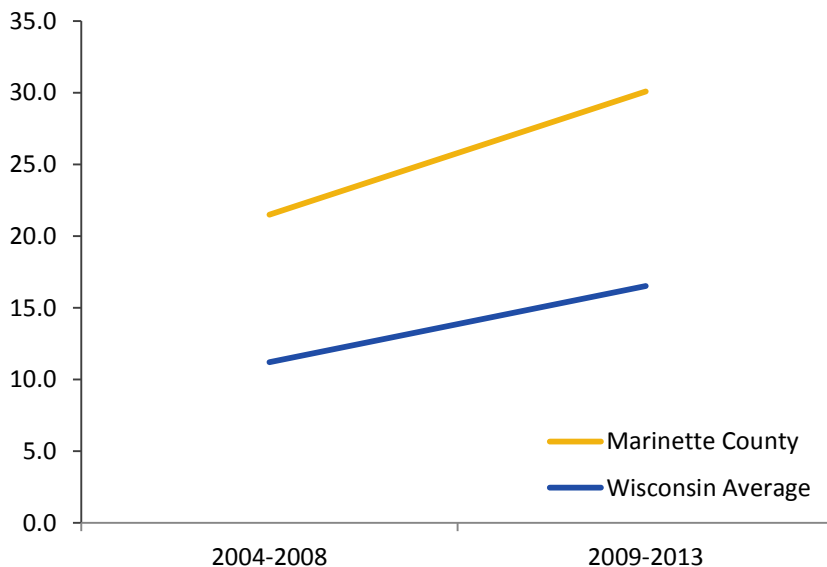
• **583.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



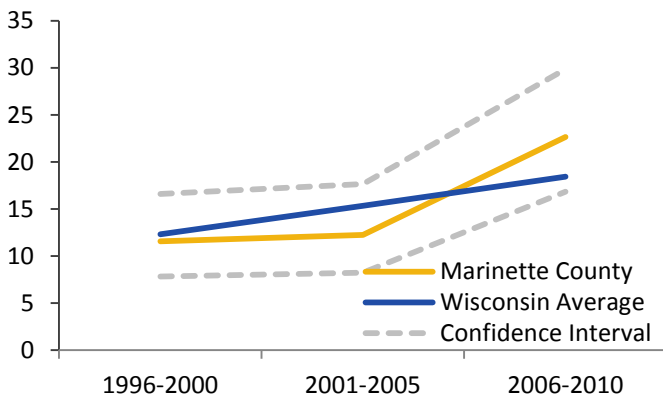


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



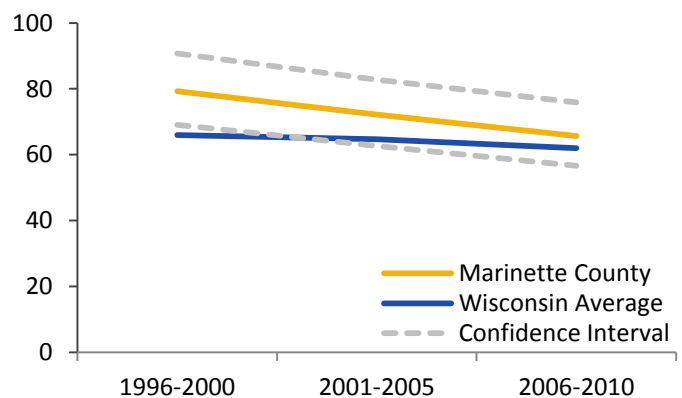
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



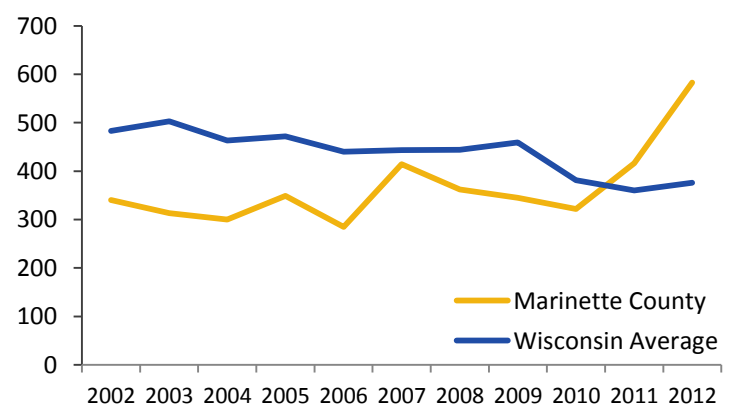
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



MARQUETTE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
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MARQUETTE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.7 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 3.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 5.5% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.1% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 28.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 18.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 78.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 469.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MARQUETTE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

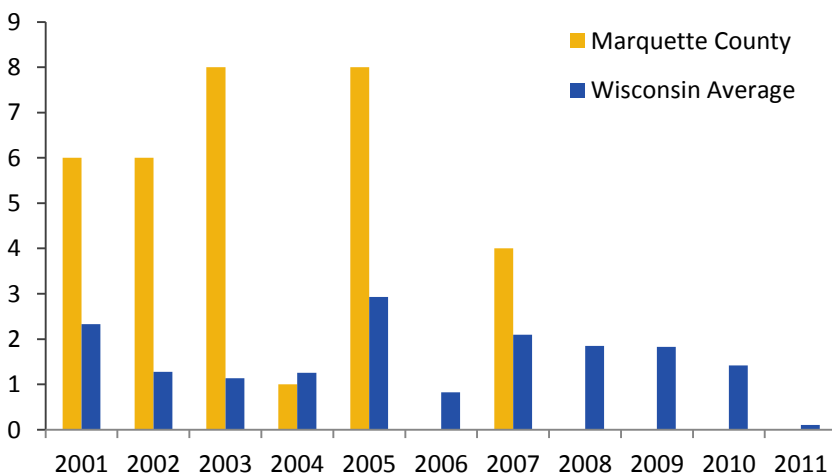
● 9.7

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

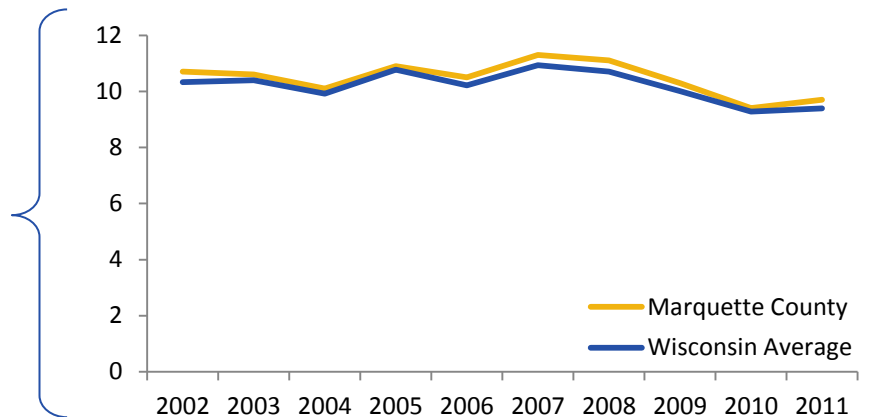
MARQUETTE COUNTY

PARTICULATE MATTER 2.5

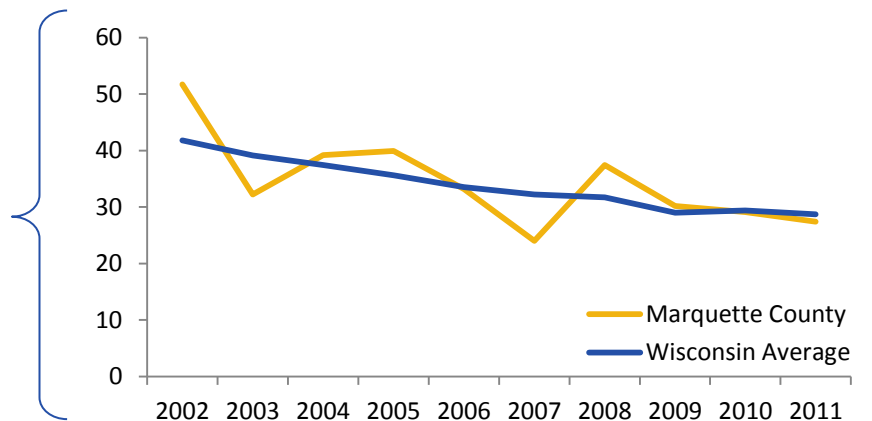
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

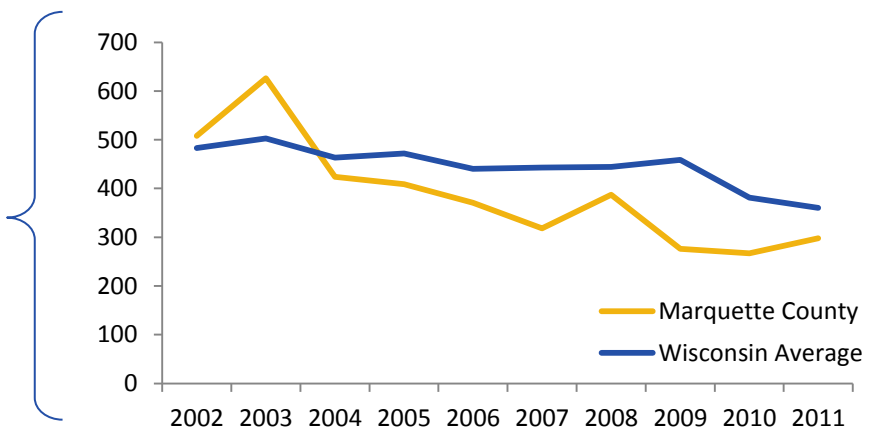
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



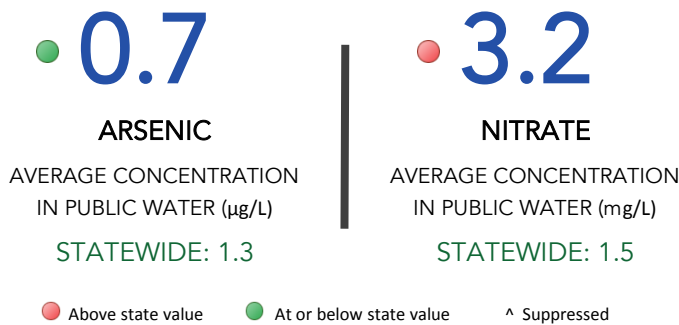
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MARQUETTE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

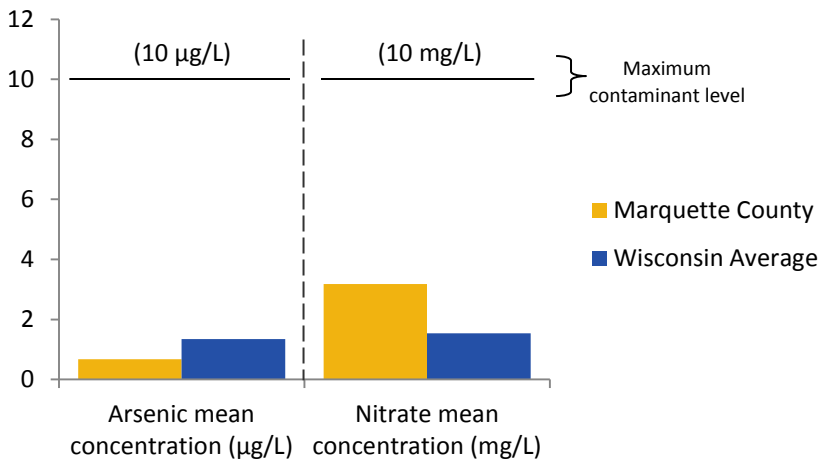
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY MARQUETTE COUNTY

PRIVATE DRINKING WATER

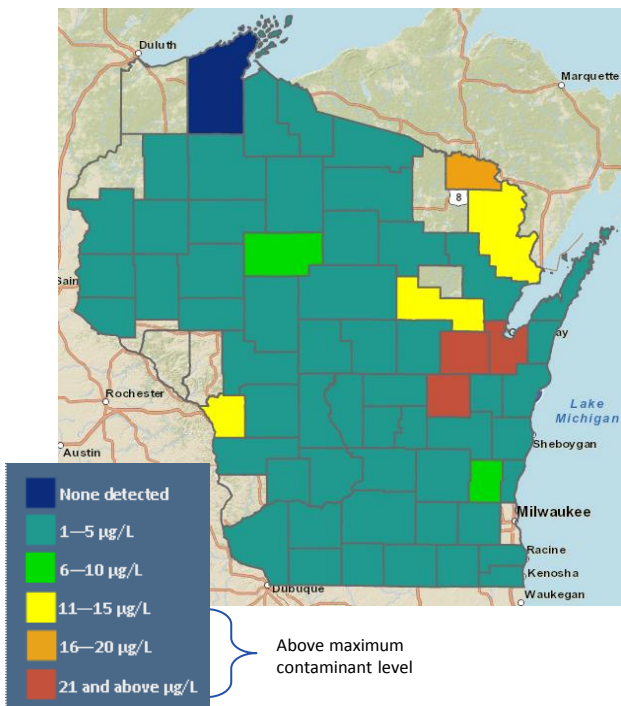
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

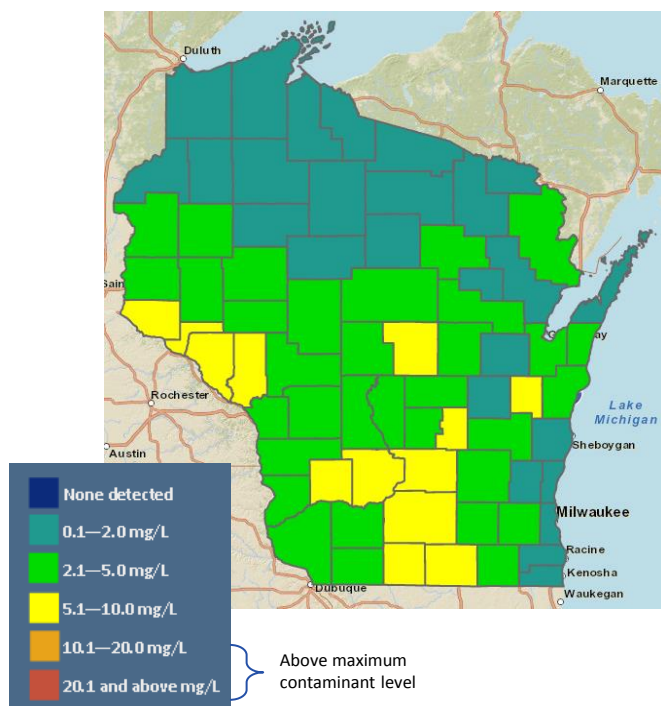
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

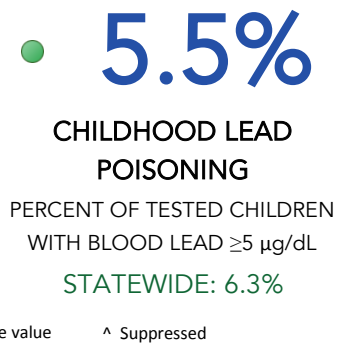
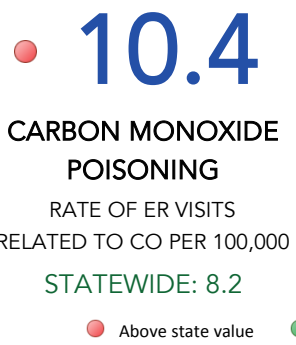


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

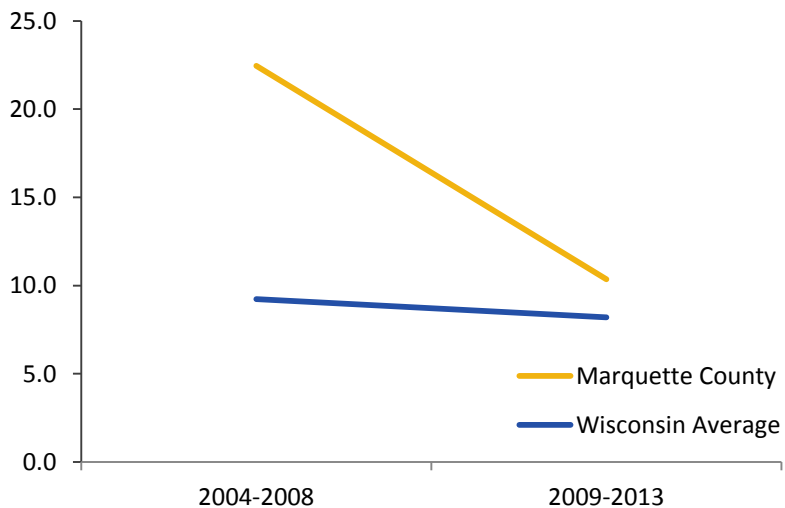


HOME HAZARDS MARQUETTE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

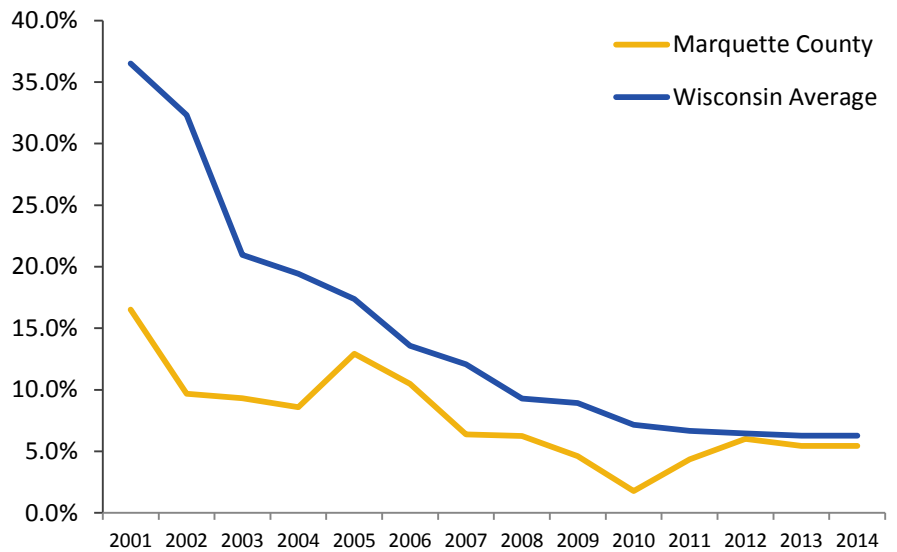
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

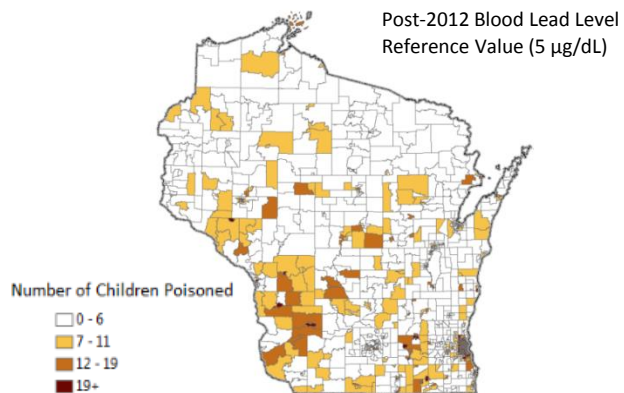
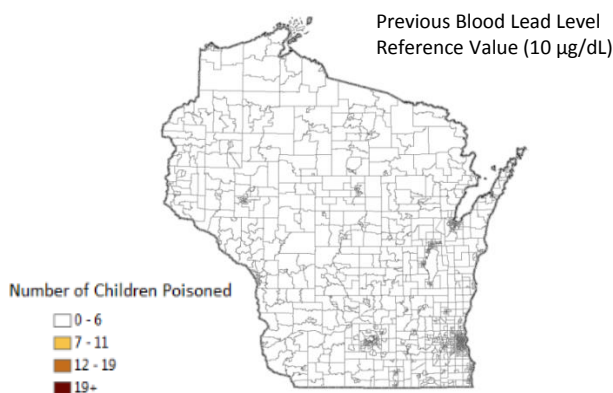
CHILDHOOD LEAD POISONING

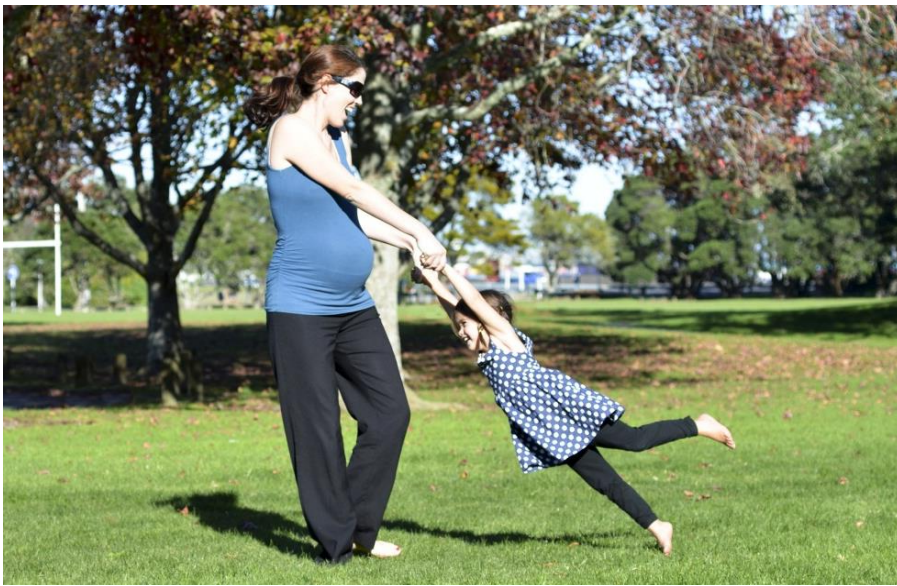
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MARQUETTE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **7.1%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.3%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

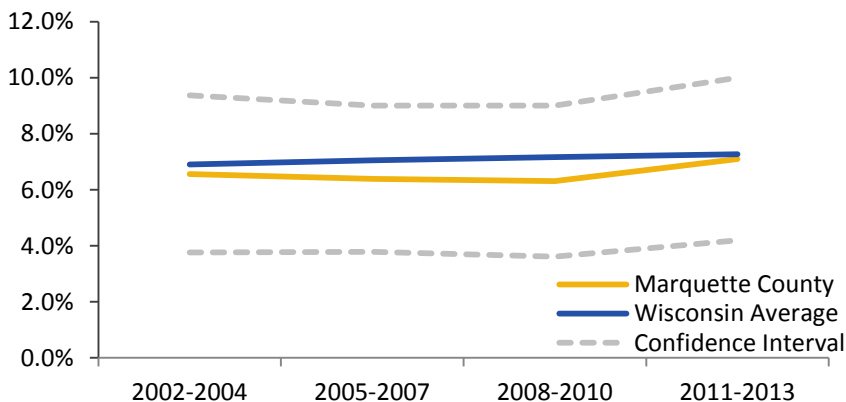
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

MARQUETTE COUNTY

PRETERM BIRTH

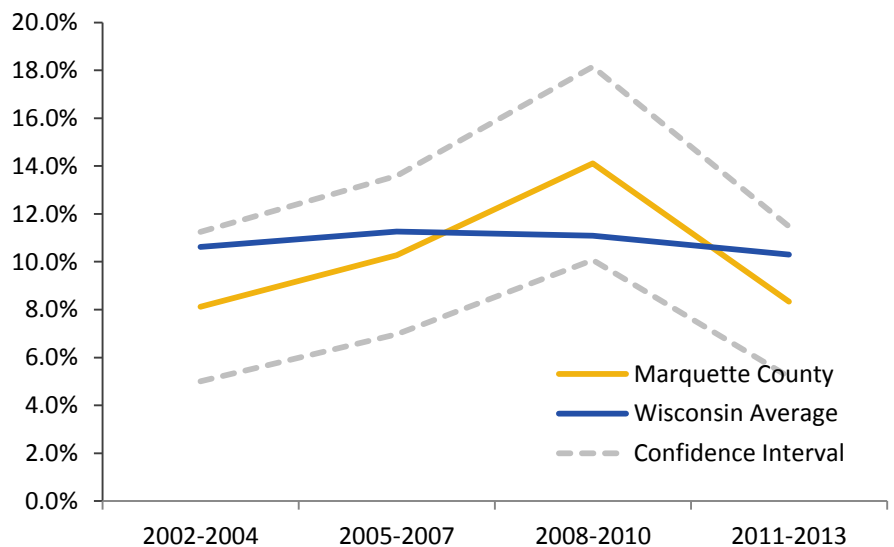
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

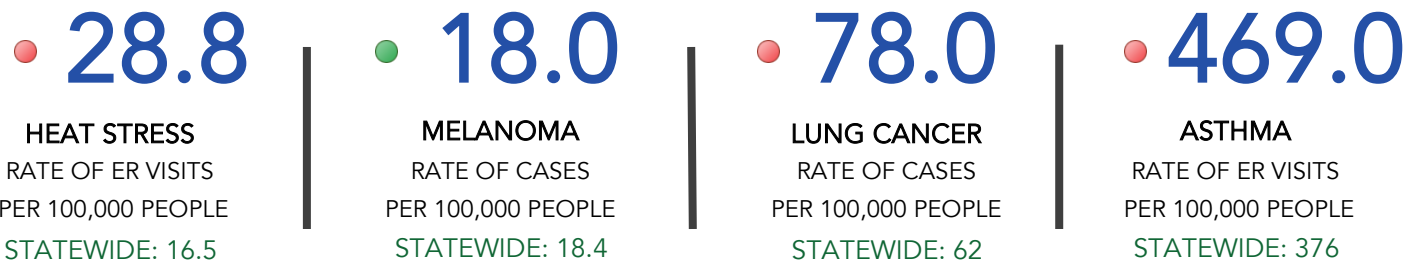
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MARQUETTE COUNTY

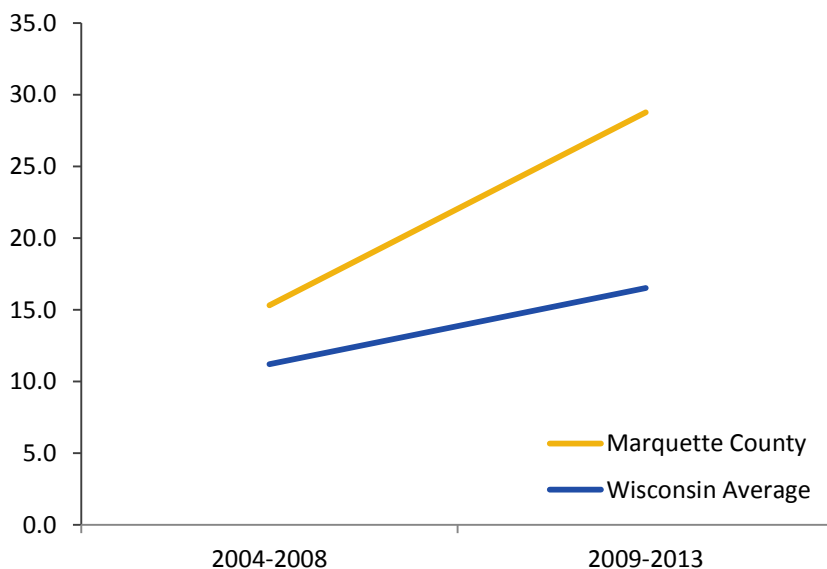
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



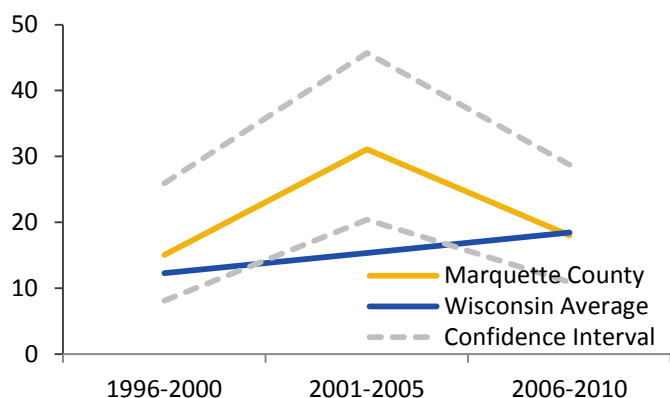


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



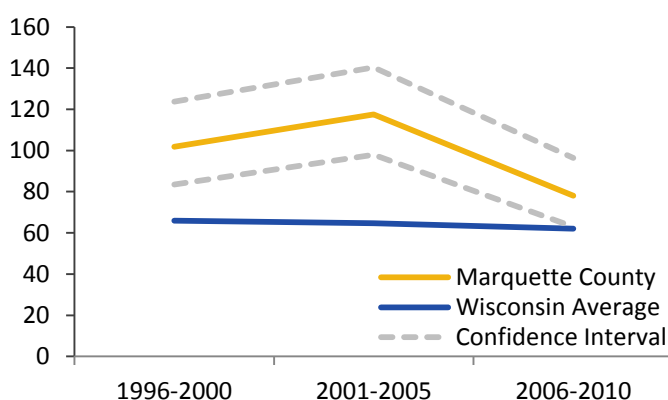
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



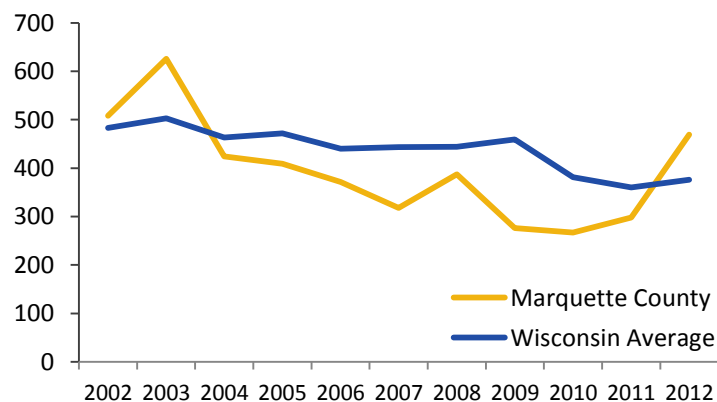
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



MENOMINEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MENOMINEE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

| Average concentration in µg/L
Wisconsin: 1.3

Nitrate

| Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 56.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.7% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 8.3% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 11.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 53.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

^ | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 94.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 671.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

There is no mandatory reporting of these data because Menominee County is a sovereign nation.

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MENOMINEE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

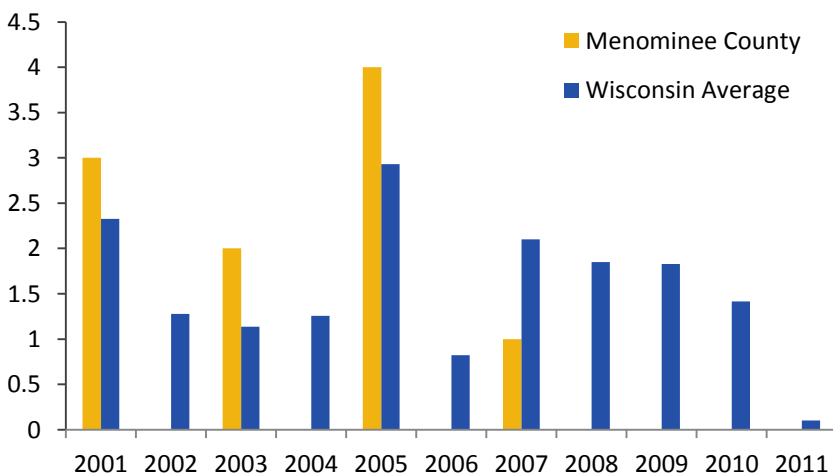
● 8.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

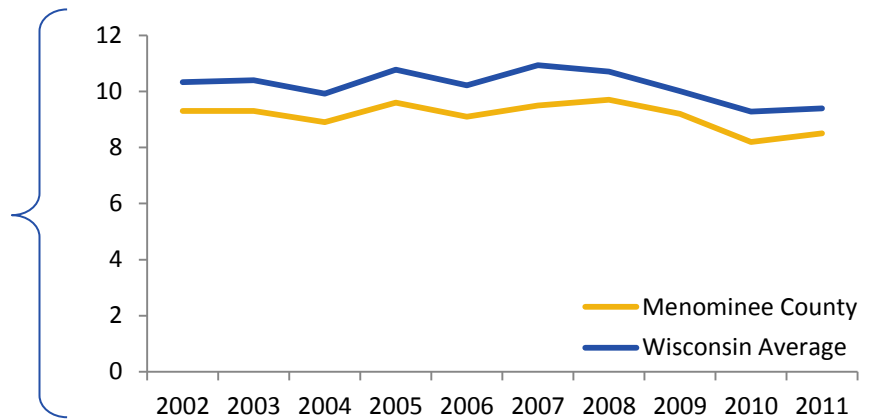
MENOMINEE COUNTY

PARTICULATE MATTER 2.5

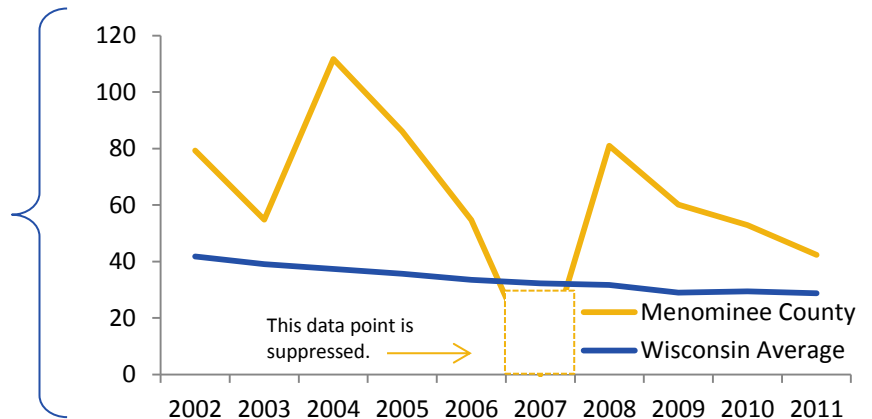
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

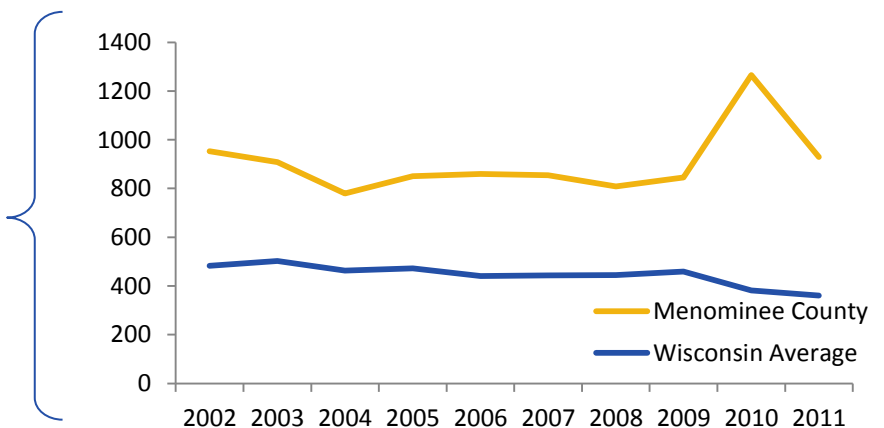
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MENOMINEE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

No Data

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● Above state value ● At or below state value ^ Suppressed

No Data

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

PUBLIC DRINKING WATER

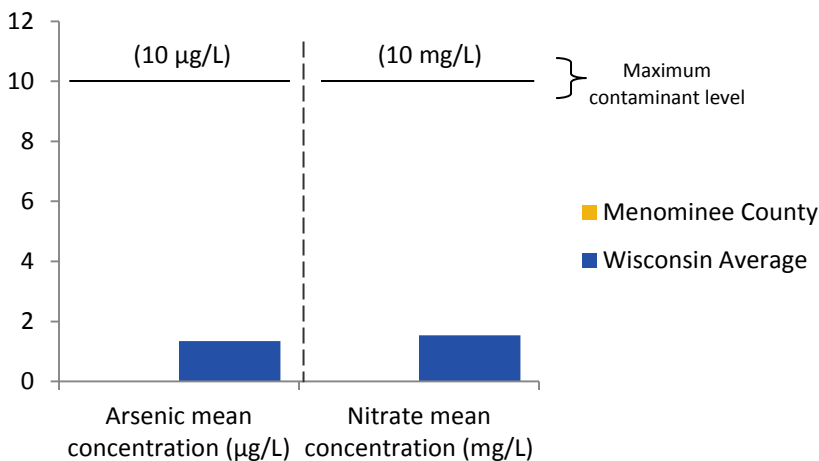
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY MENOMINEE COUNTY

PRIVATE DRINKING WATER

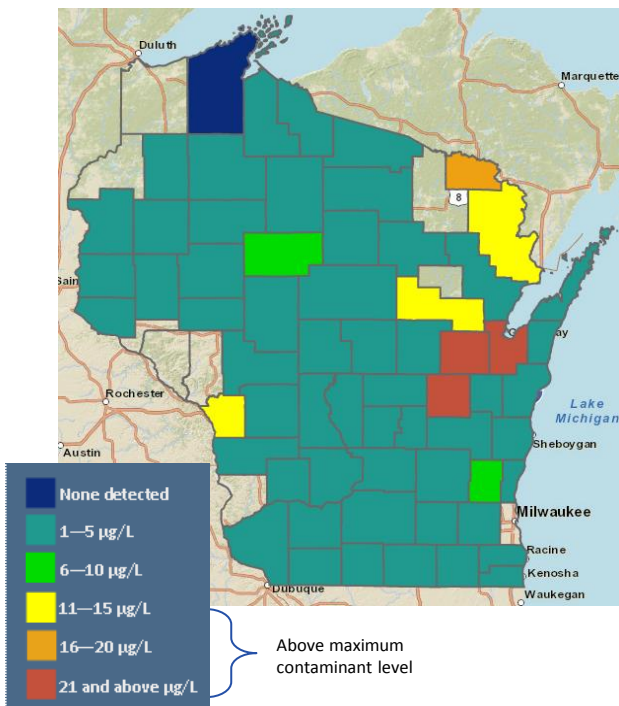
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

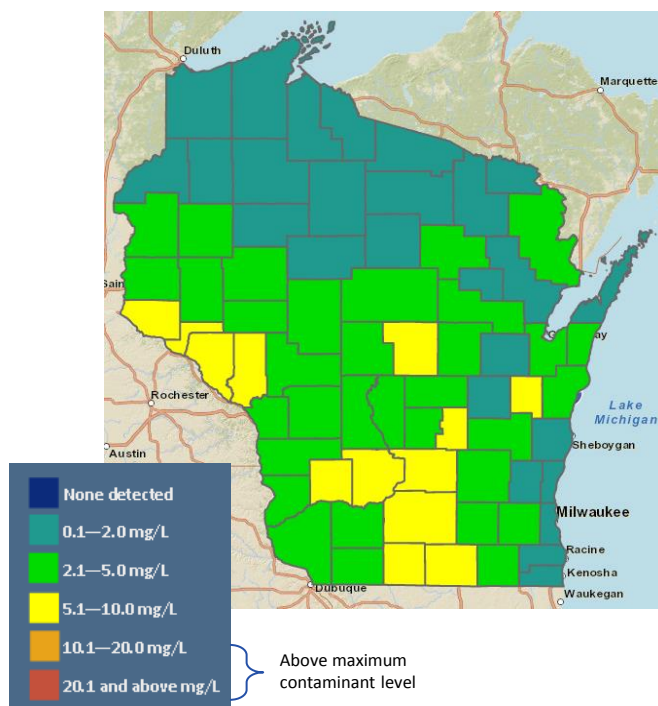
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

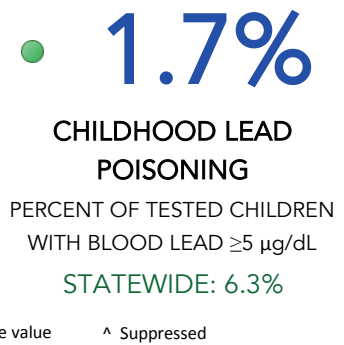
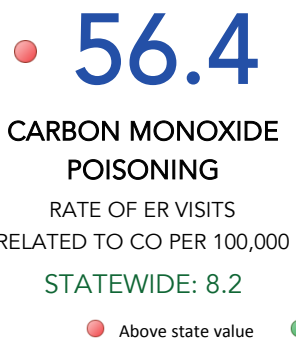


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS MENOMINEE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

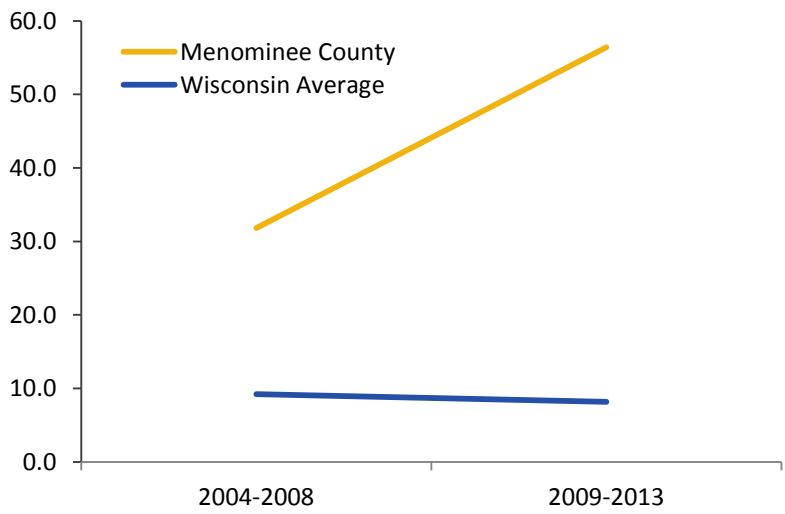


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

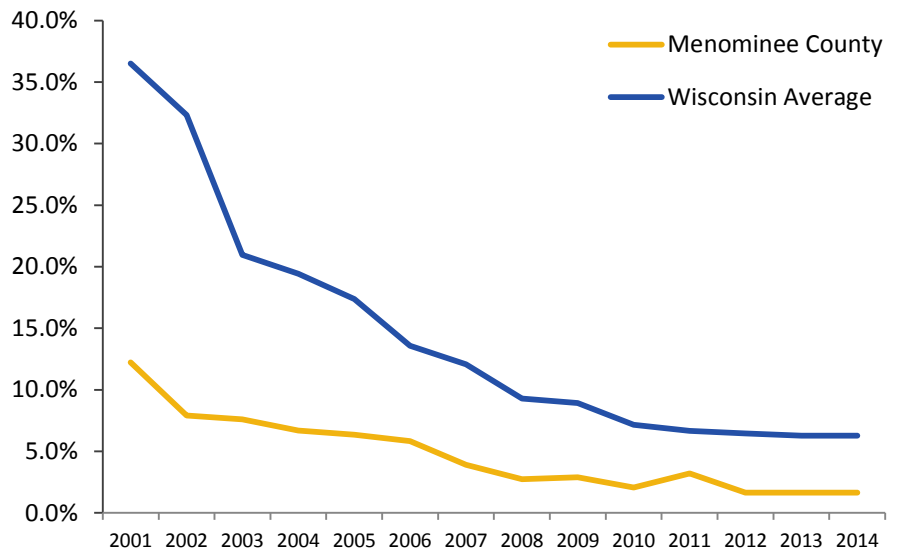
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

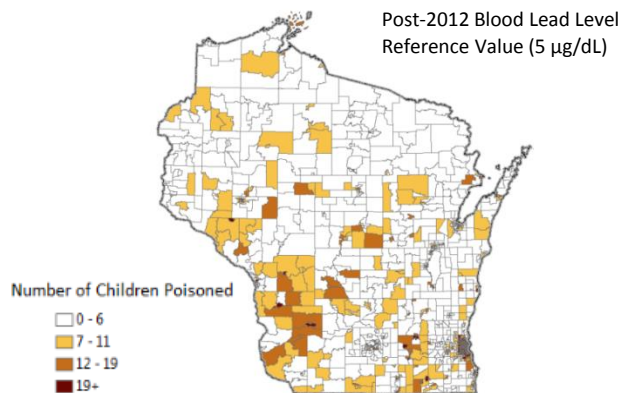
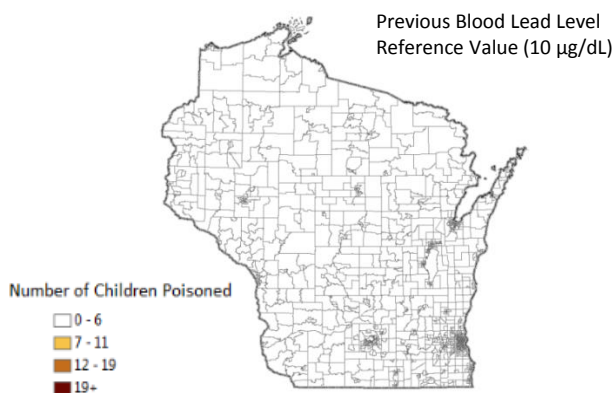
CHILDHOOD LEAD POISONING

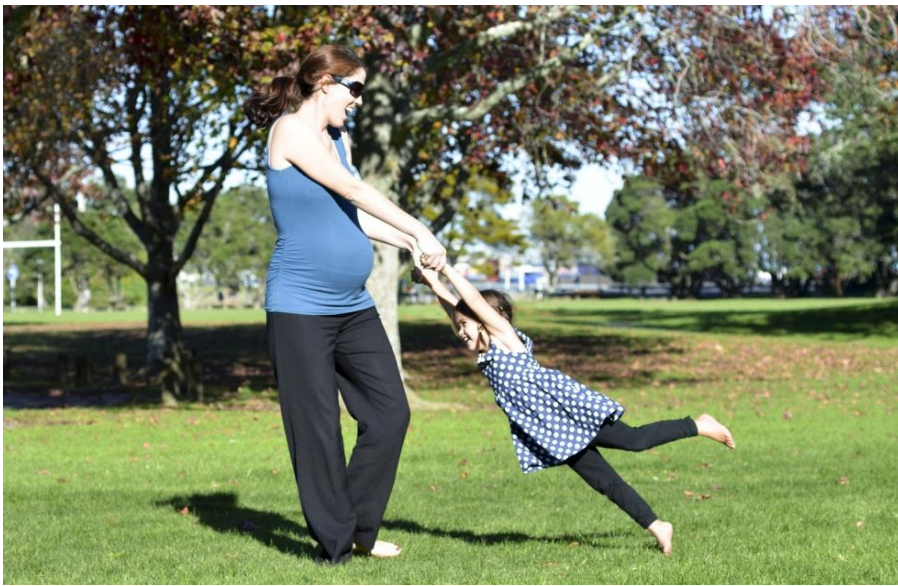
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MENOMINEE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **8.3%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **11.7%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

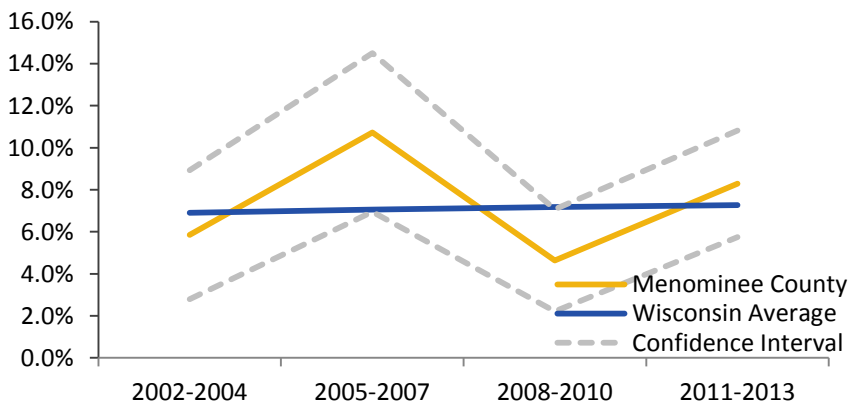
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

MENOMINEE COUNTY

PRETERM BIRTH

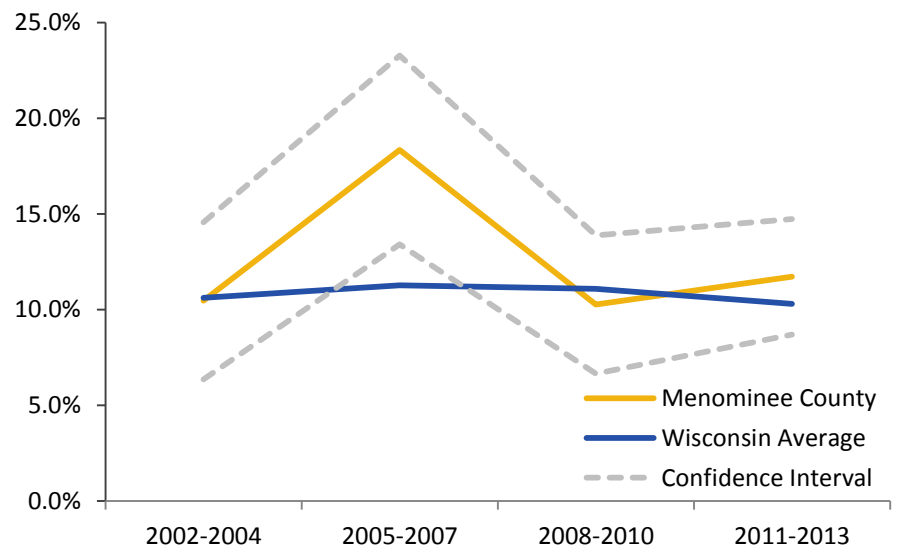
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MENOMINEE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **53.1**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

^ ^

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **94.8**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

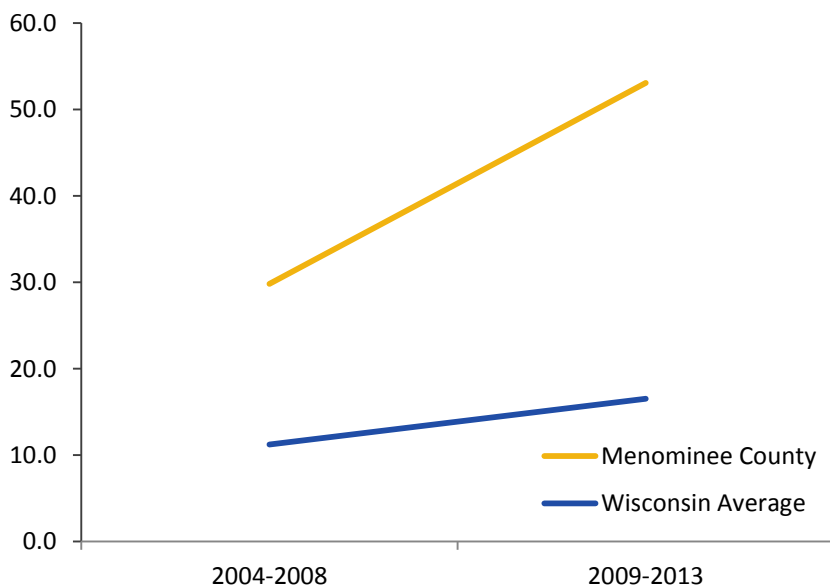
● **671.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



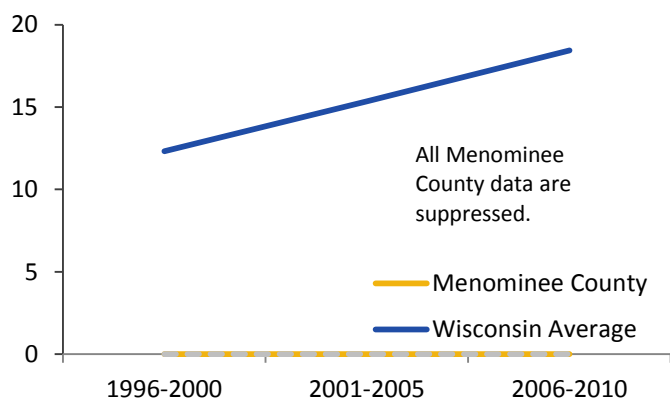


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



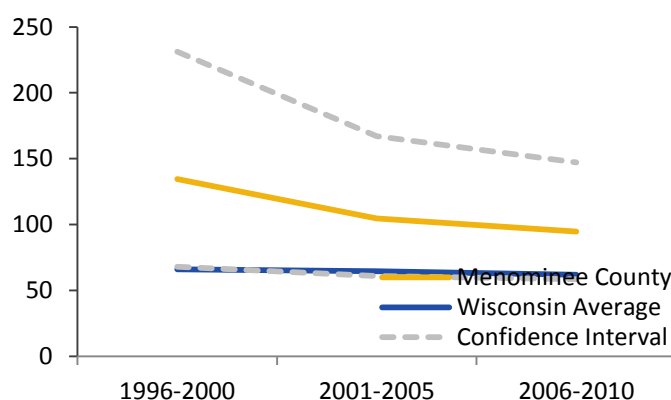
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



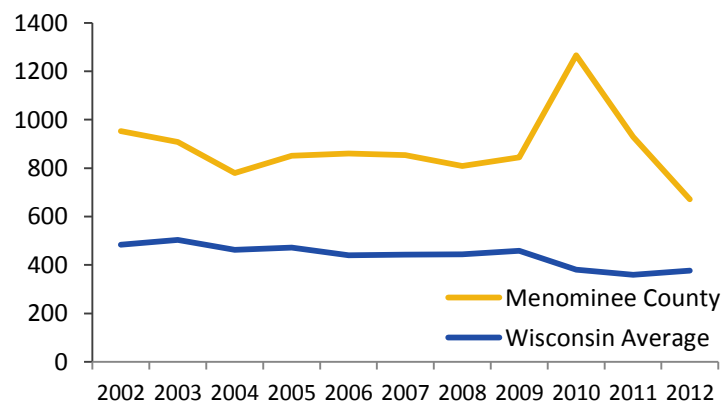
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

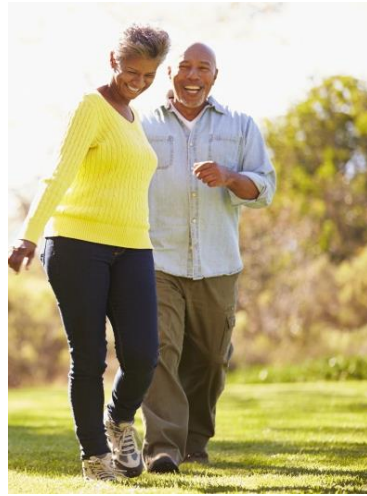
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



MILWAUKEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
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MILWAUKEE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 1.1 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.7 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.1 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 8.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 9.6% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 10.1% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 12.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 12.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 12.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 72.1 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 766.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MILWAUKEE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 2.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 1.1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

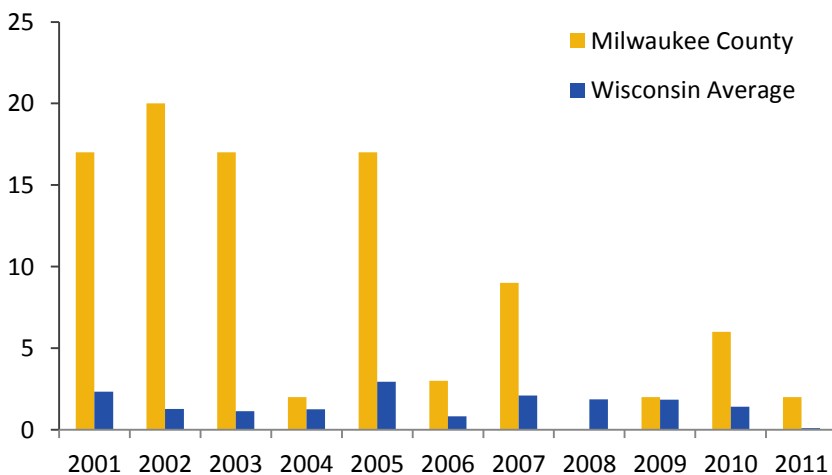
● 11.0

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

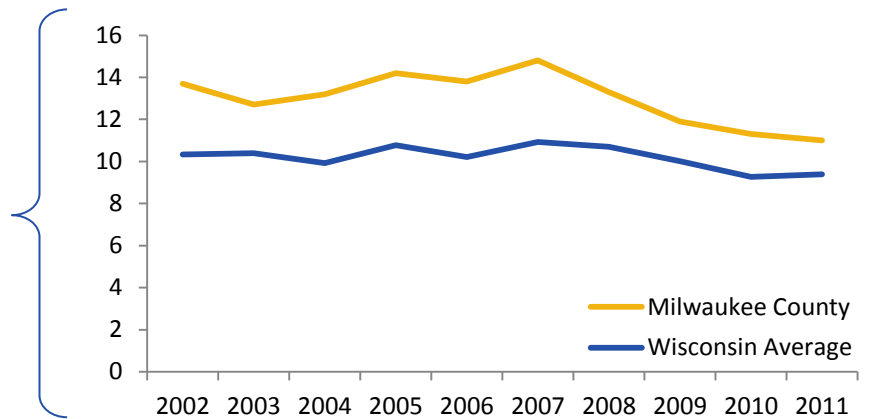
MILWAUKEE COUNTY

PARTICULATE MATTER 2.5

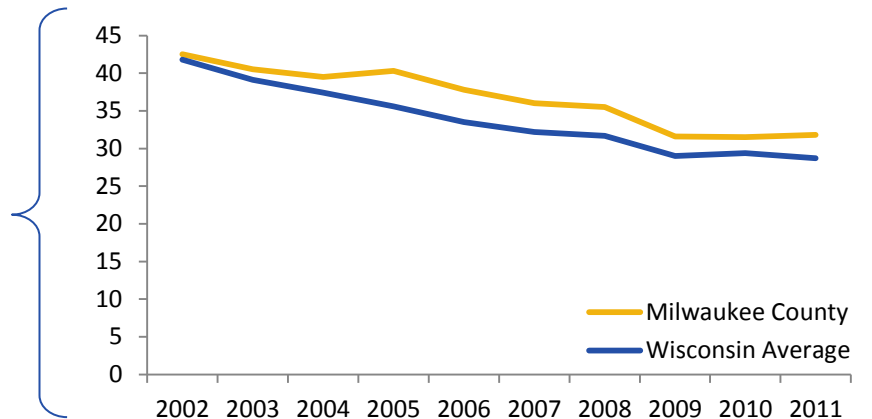
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

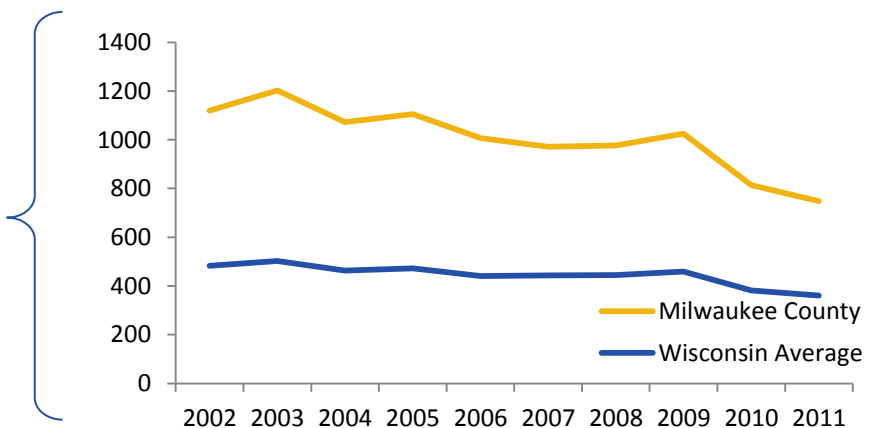
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



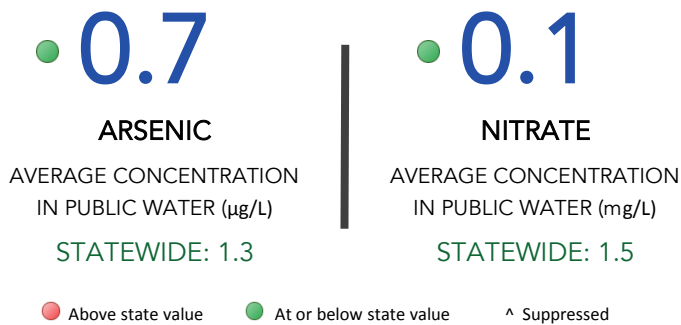
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MILWAUKEE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

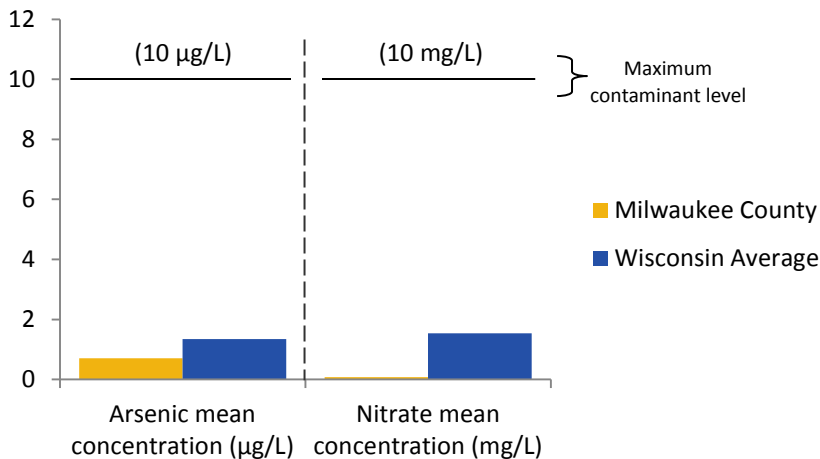
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY MILWAUKEE COUNTY

PRIVATE DRINKING WATER

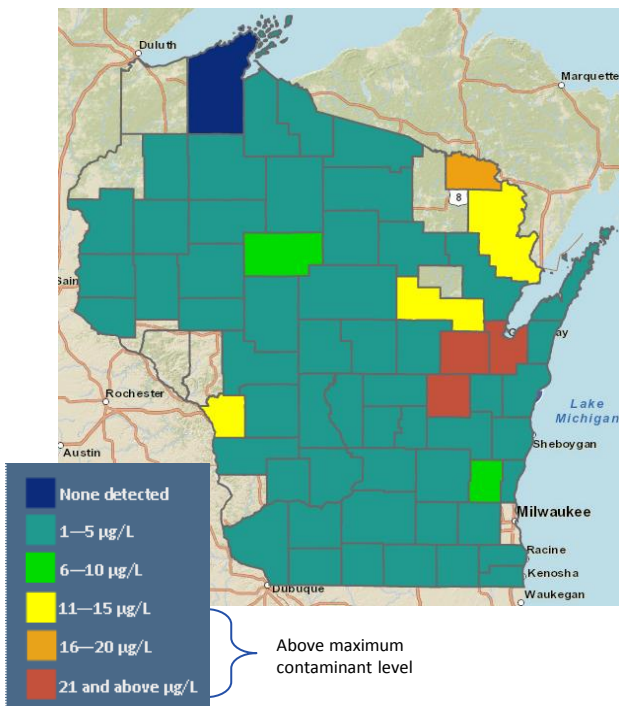
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

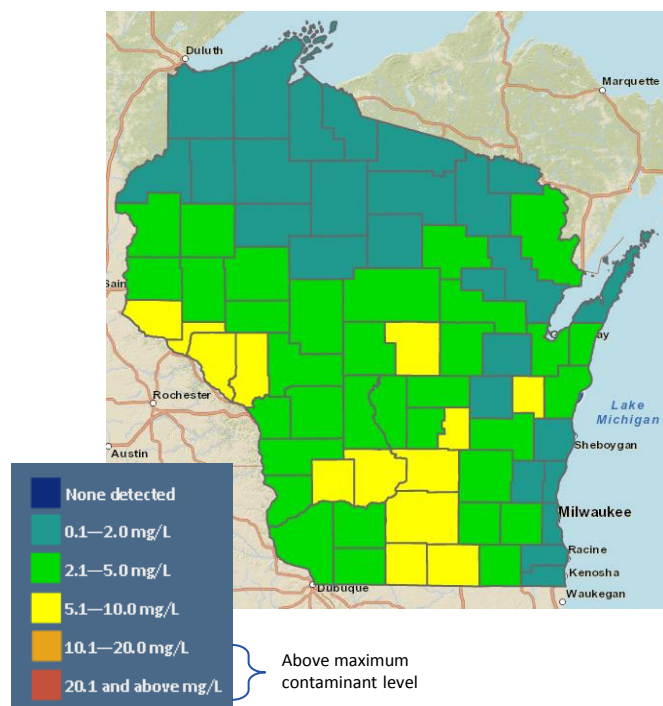
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

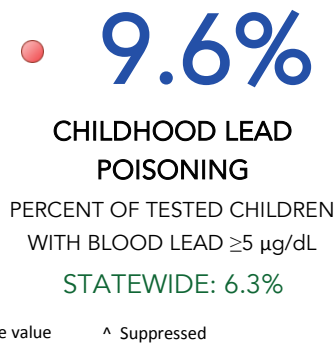
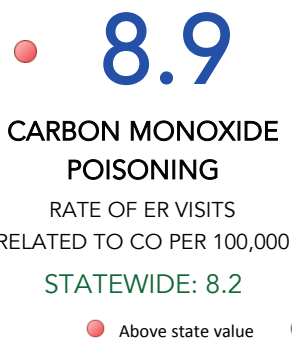


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS MILWAUKEE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

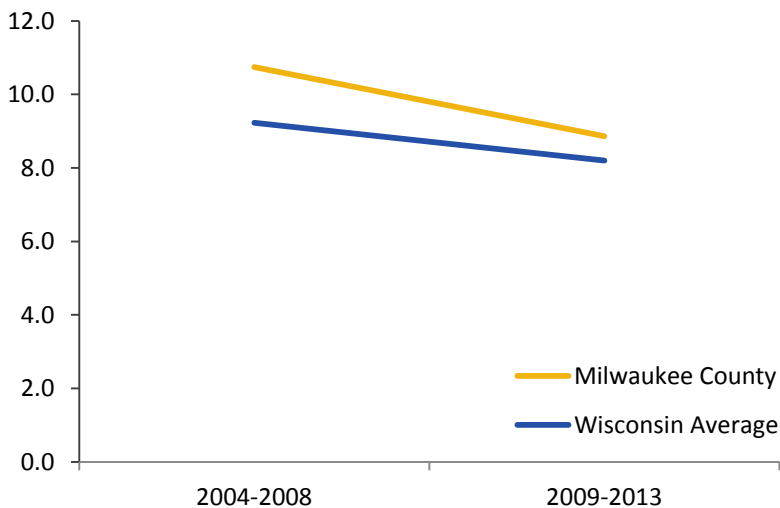


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

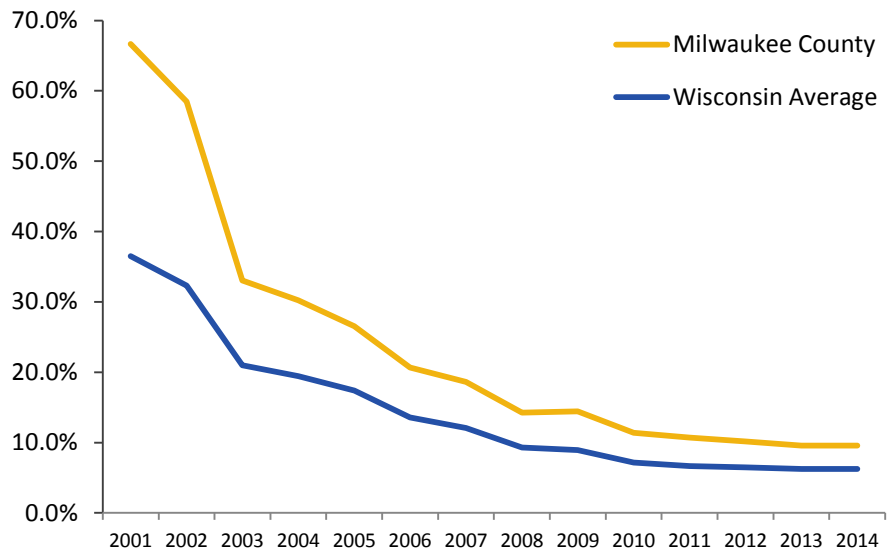
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

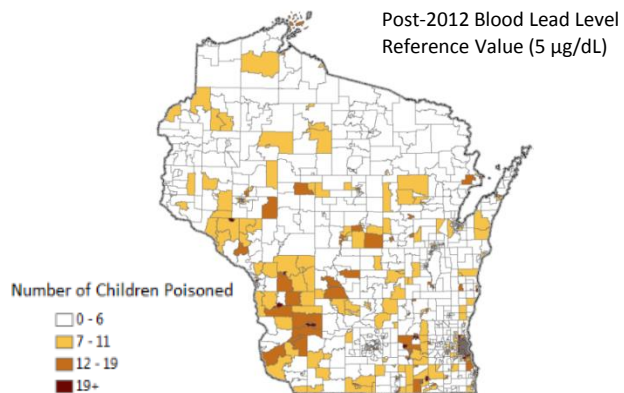
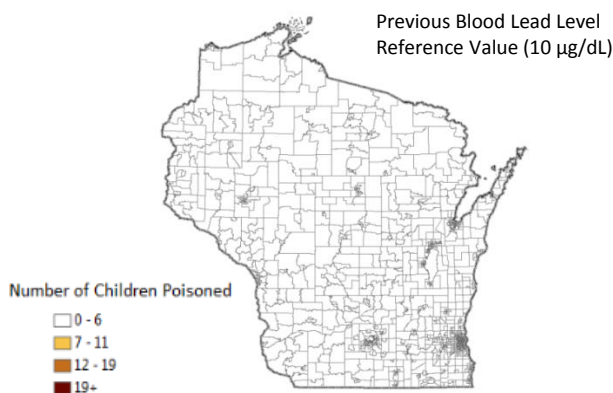
CHILDHOOD LEAD POISONING

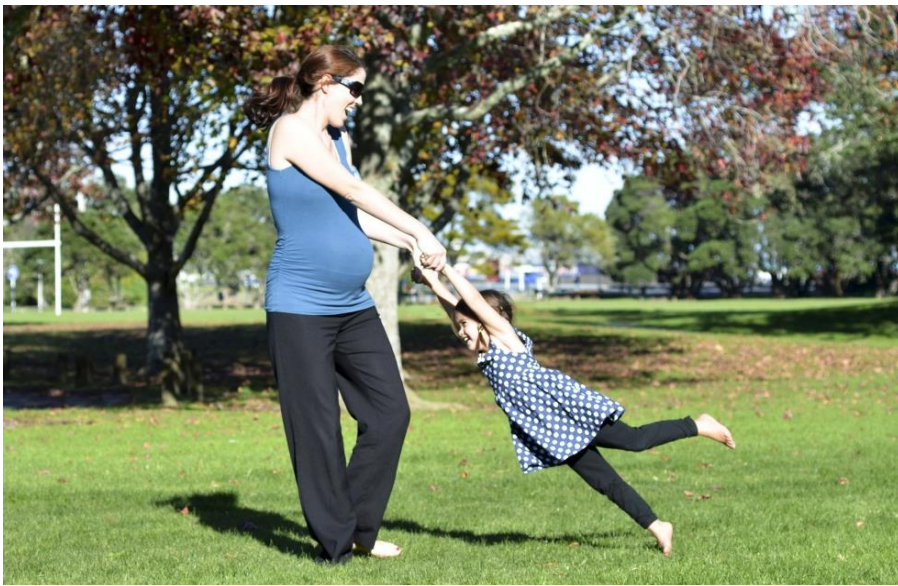
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

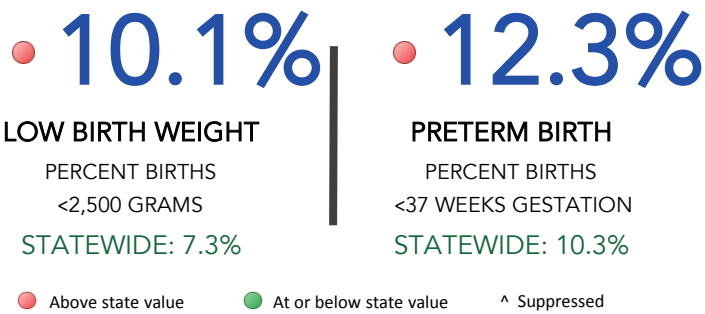
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MILWAUKEE COUNTY

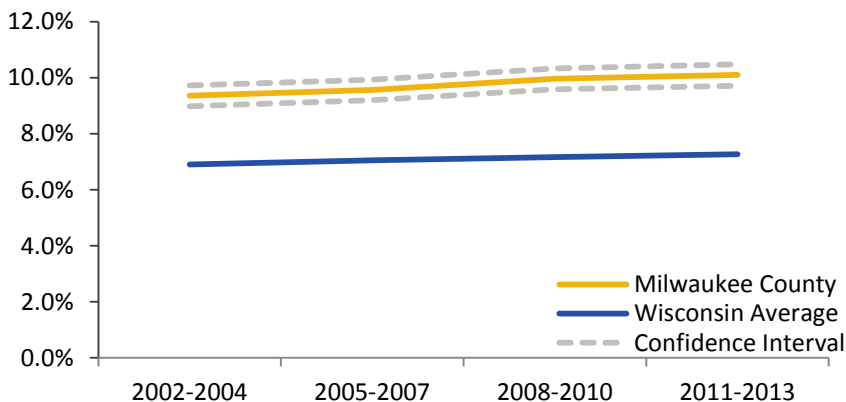
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES MILWAUKEE COUNTY

PRETERM BIRTH

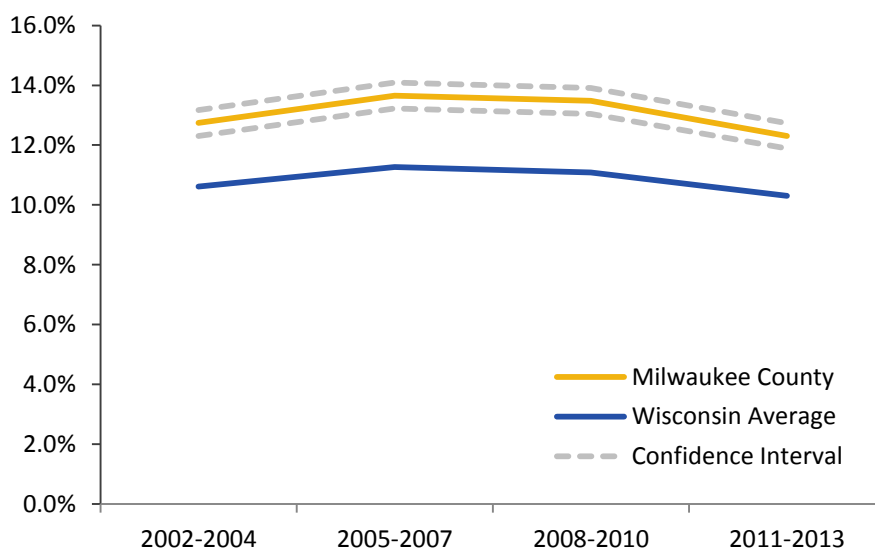
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

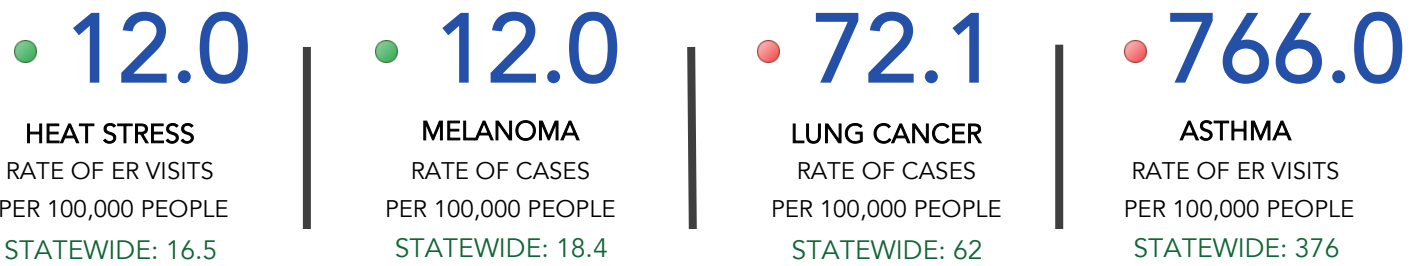
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MILWAUKEE COUNTY

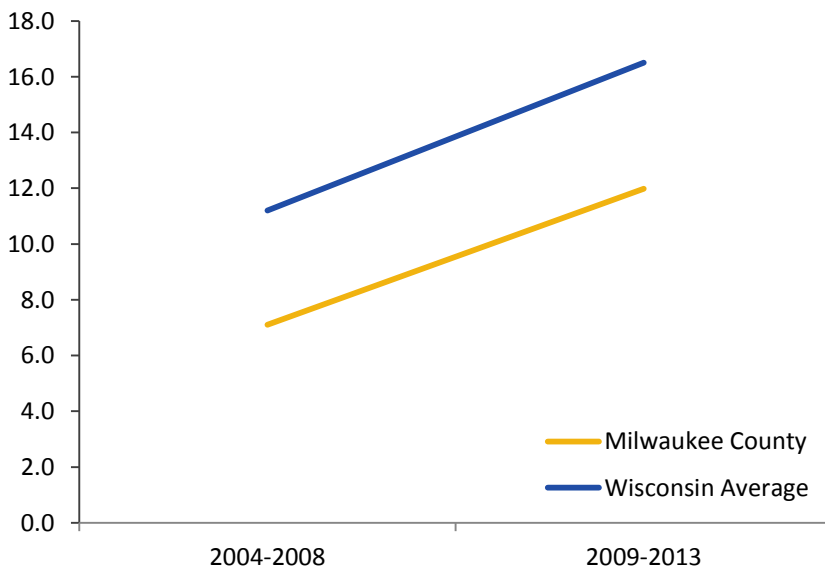
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



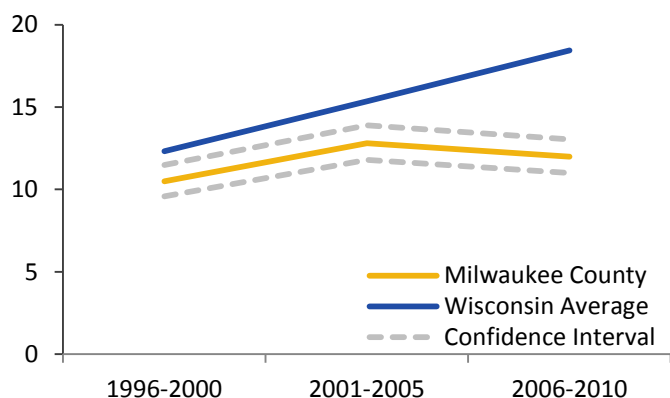


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



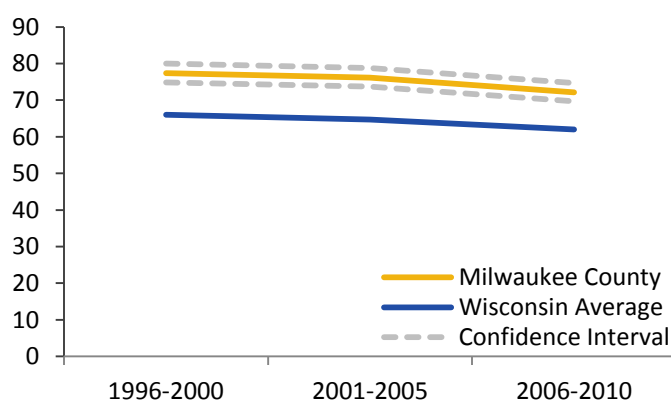
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



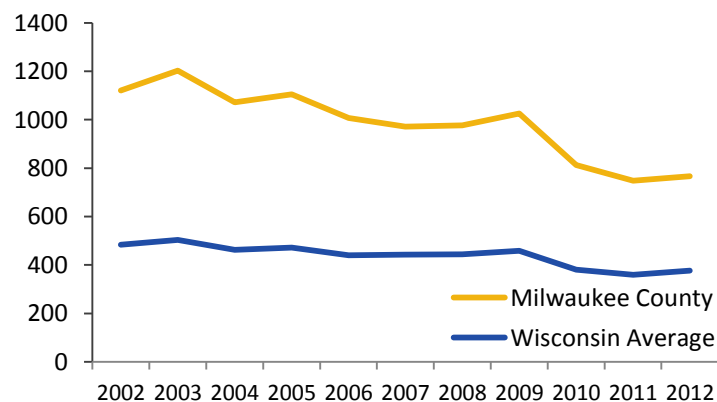
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

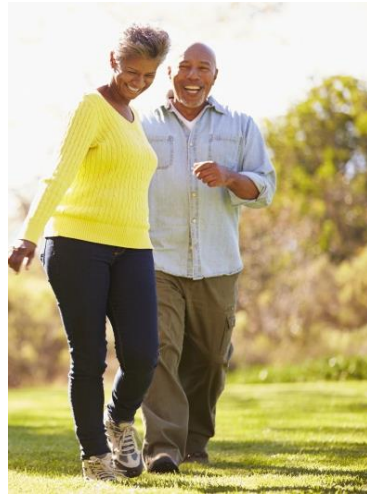
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



MONROE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MONROE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.3 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 1.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 13.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 5.4% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 33.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 22.1 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 63.6 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 344.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY MONROE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

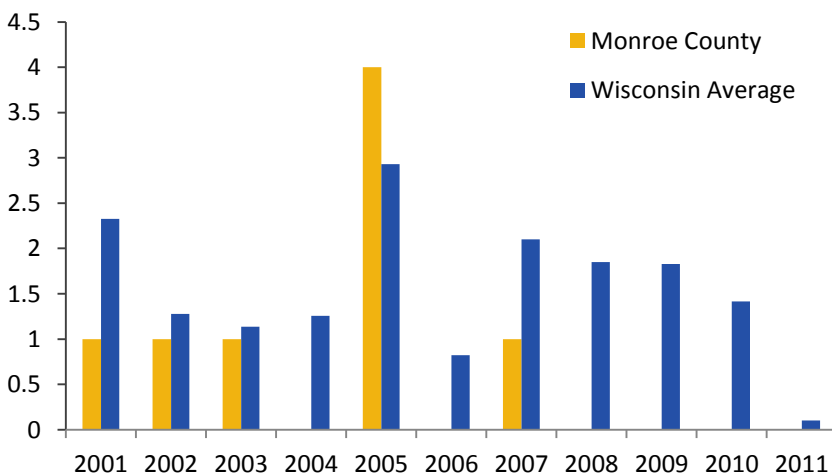
● 9.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

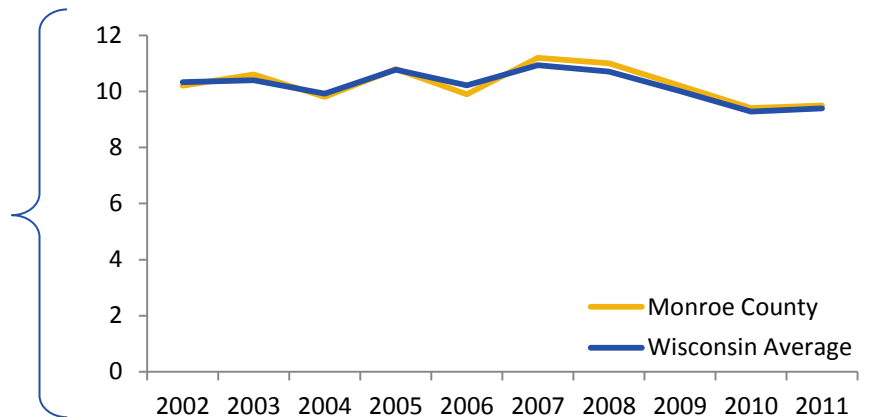
MONROE COUNTY

PARTICULATE MATTER 2.5

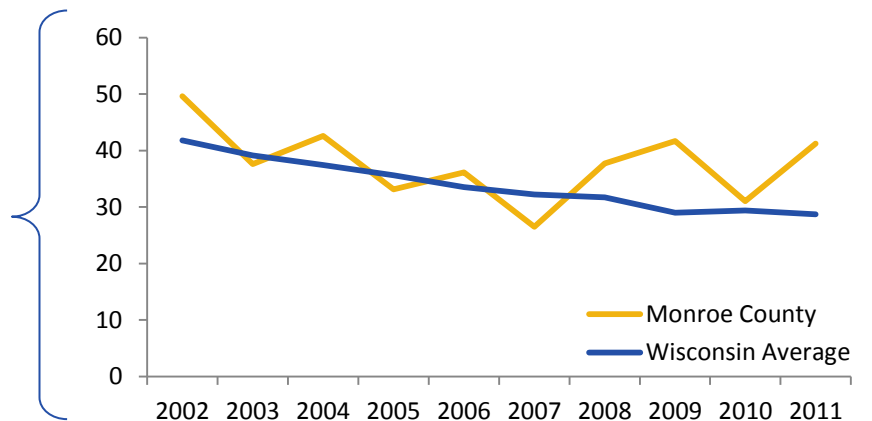
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

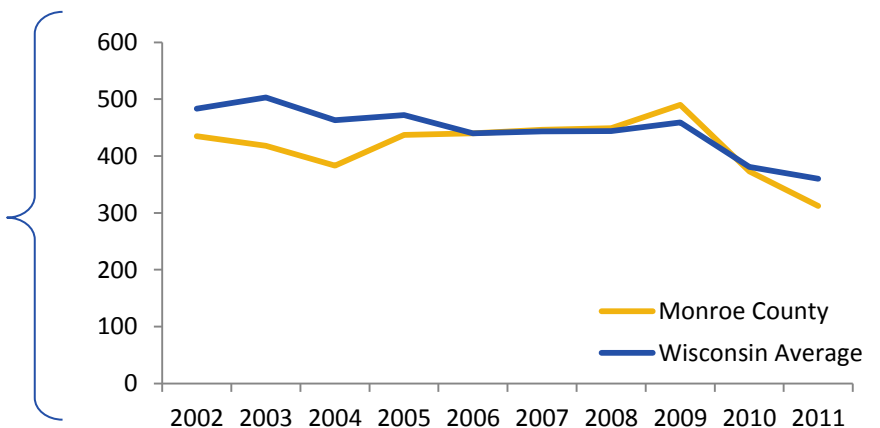
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



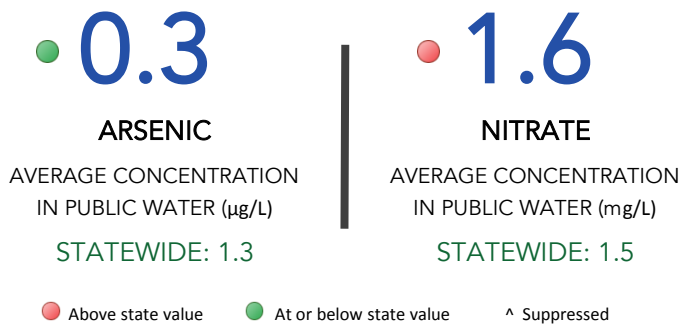
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY MONROE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

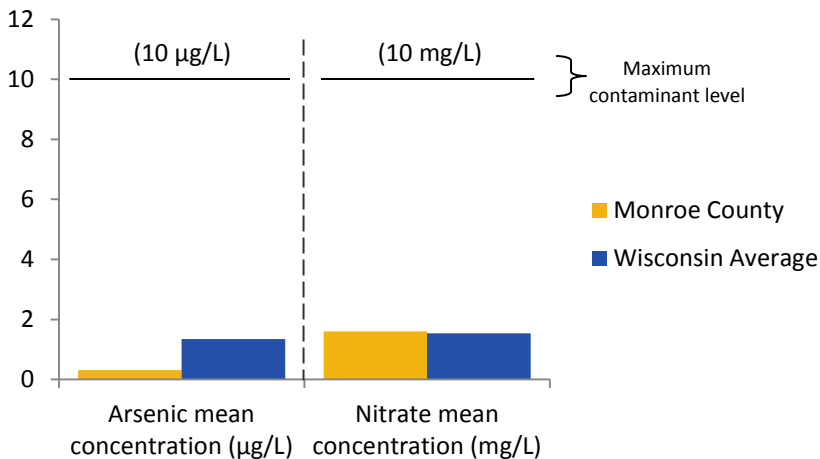
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY MONROE COUNTY

PRIVATE DRINKING WATER

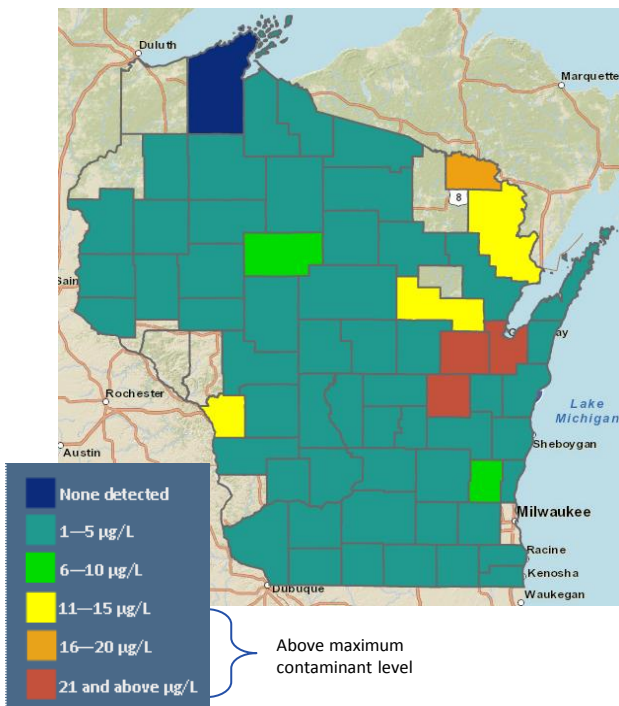
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

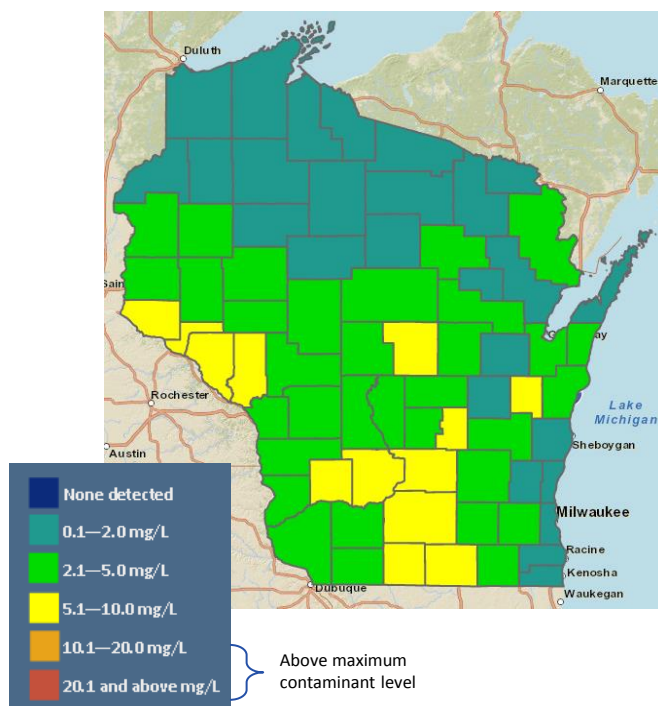
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

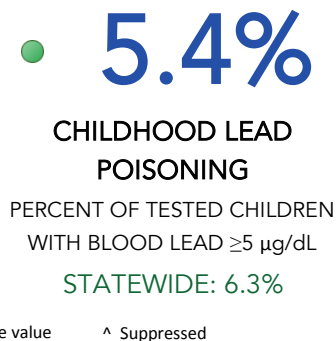
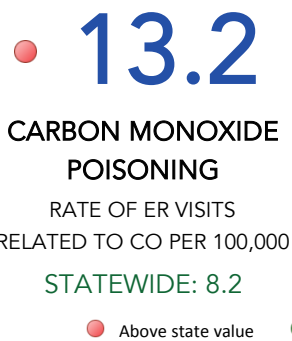


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS MONROE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

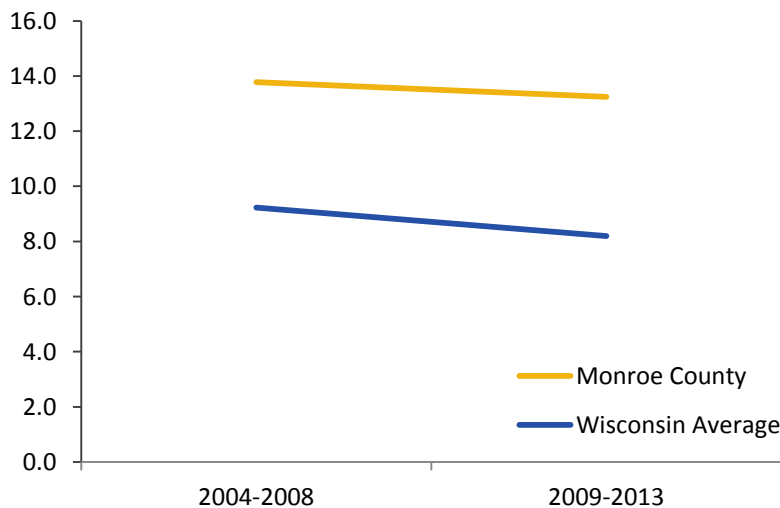


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

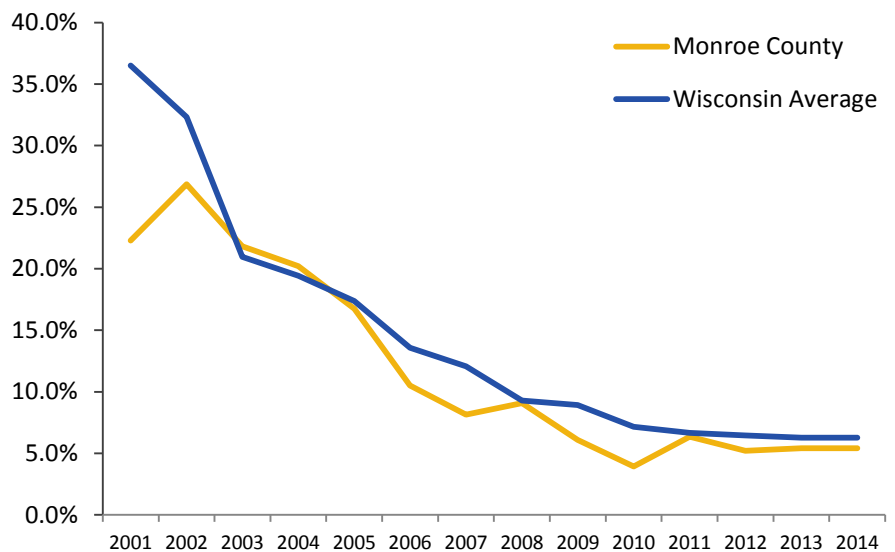
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

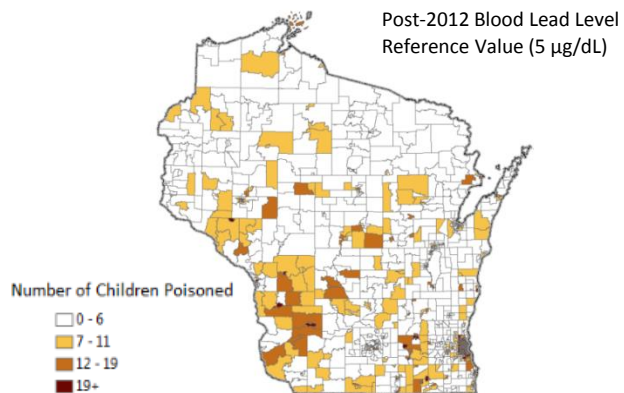
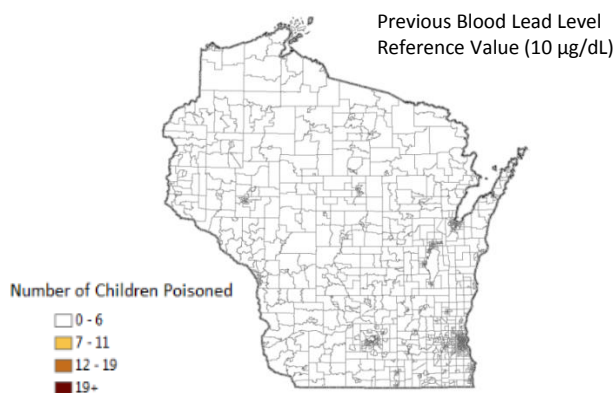
CHILDHOOD LEAD POISONING

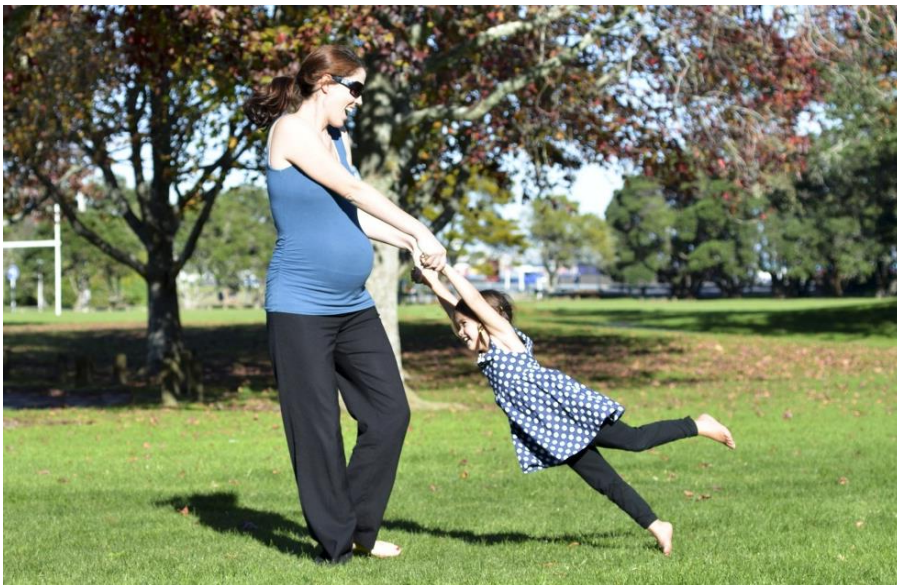
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES MONROE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.4%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.3%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

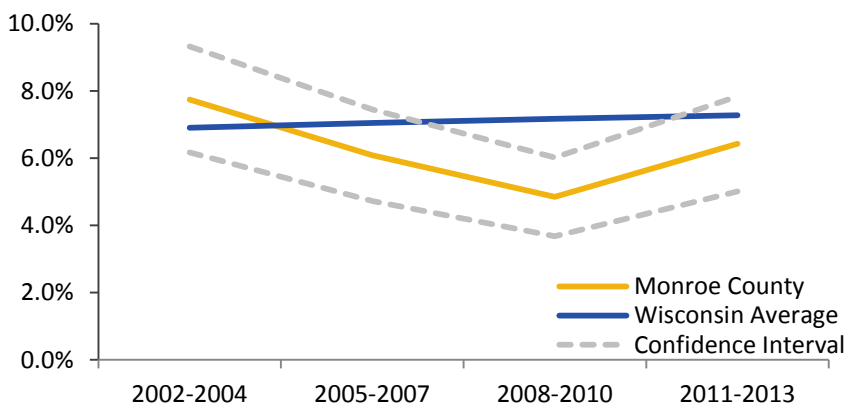
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

MONROE COUNTY

PRETERM BIRTH

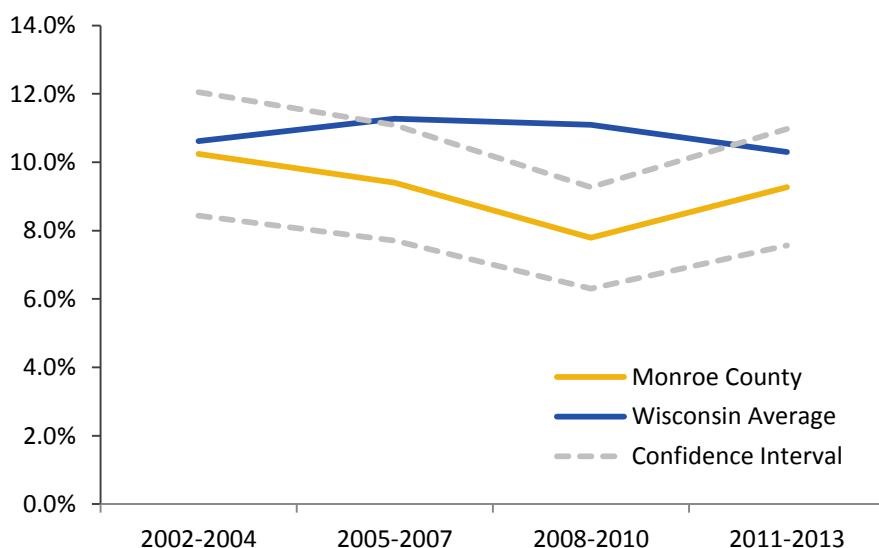
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

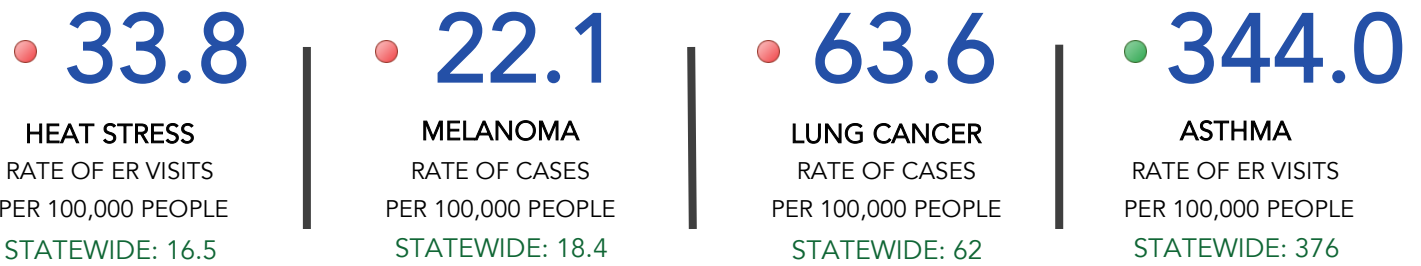
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS MONROE COUNTY

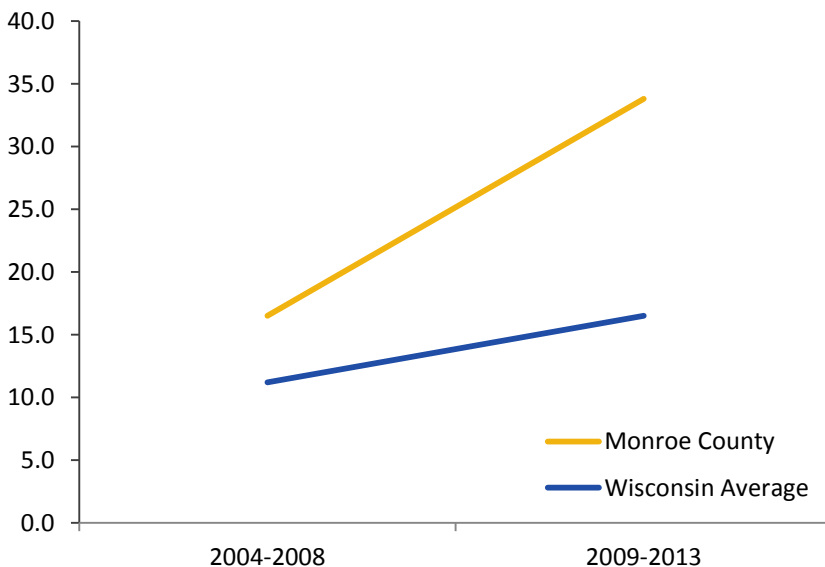
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



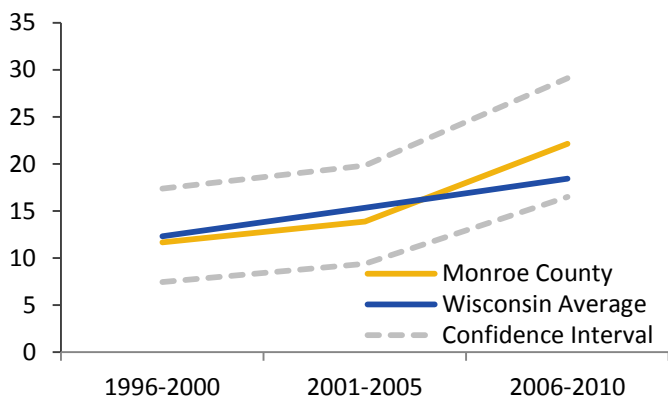


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



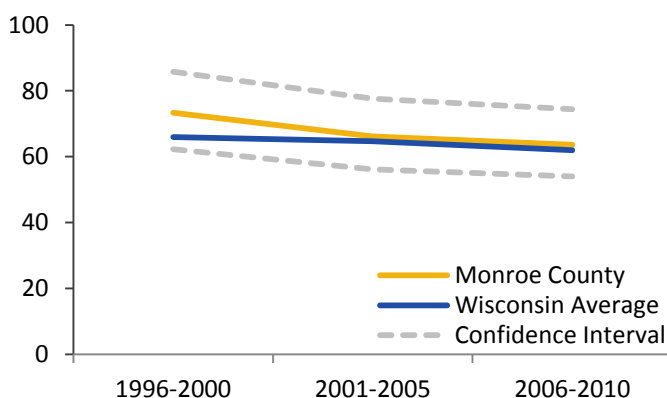
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



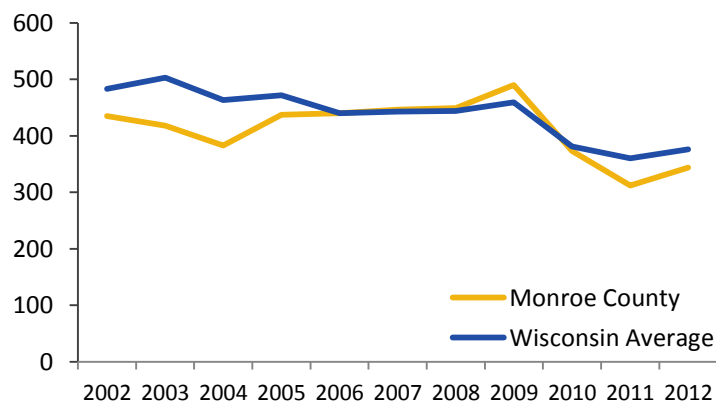
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

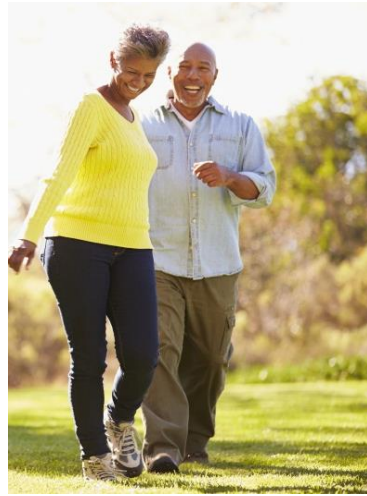
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



OCONTO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

OCONTO COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 3.8 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 0.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 6.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.0% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 12.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 22.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 71.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 238.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY OCONTO COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

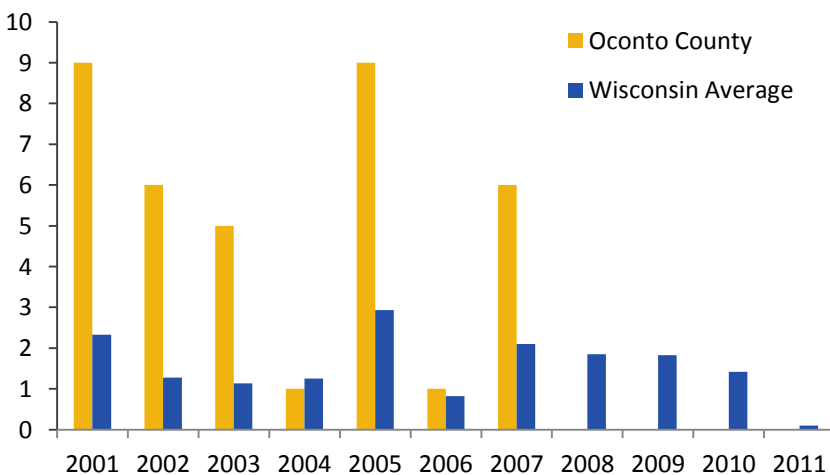
● 9.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

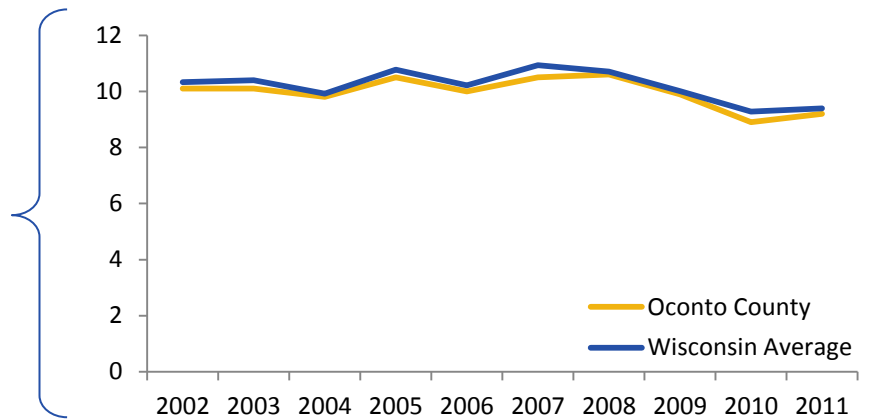
OCONTO COUNTY

PARTICULATE MATTER 2.5

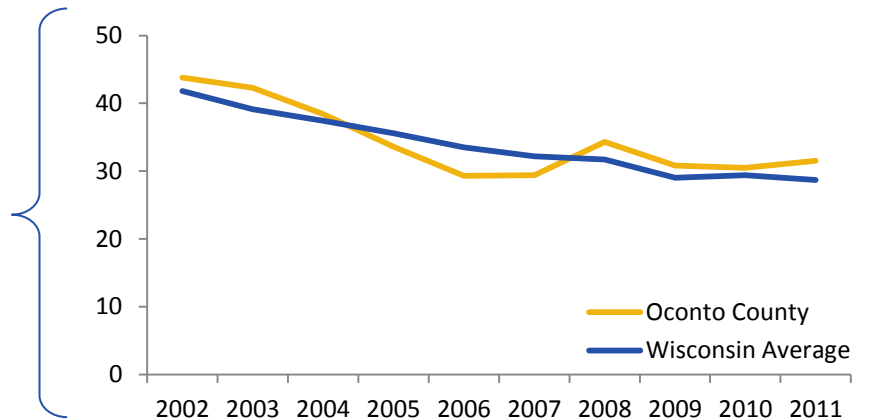
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

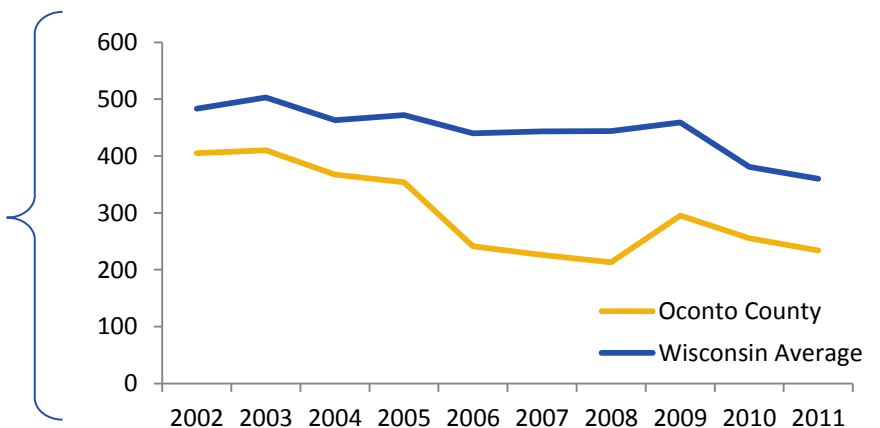
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



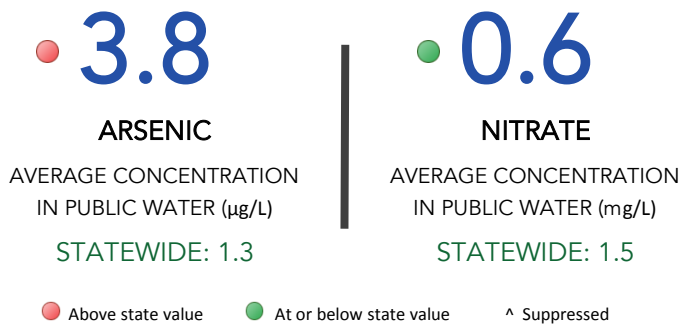
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY OCONTO COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

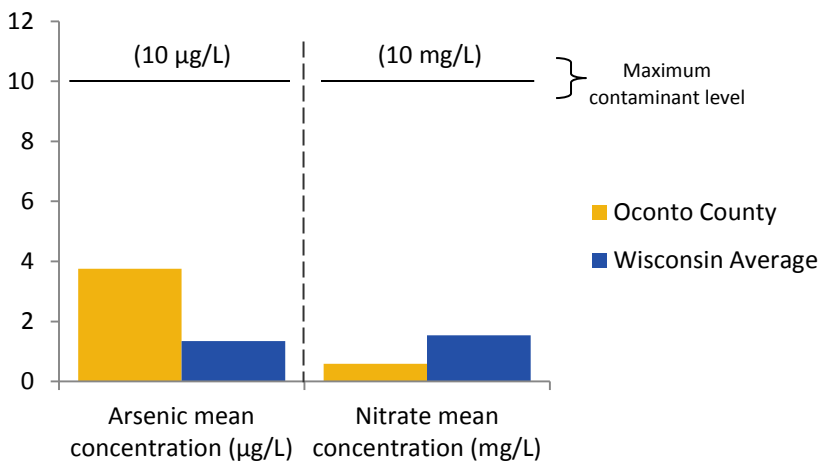
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY OCONTO COUNTY

PRIVATE DRINKING WATER

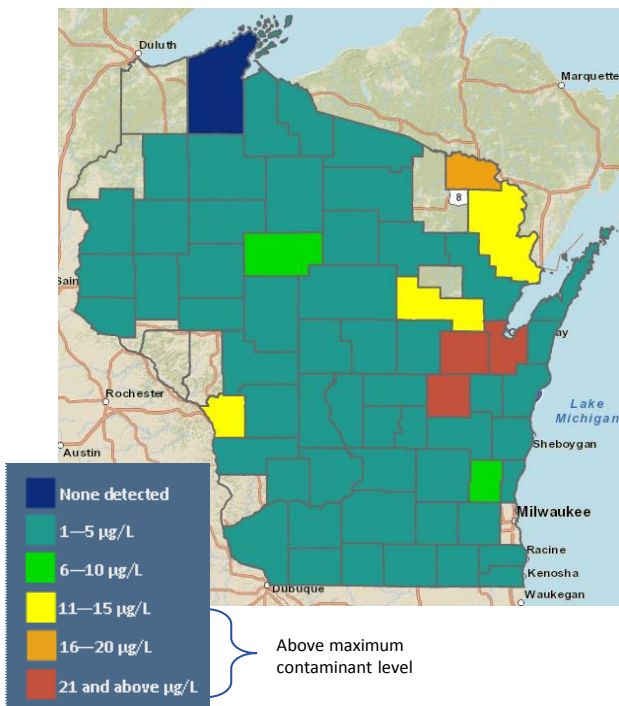
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

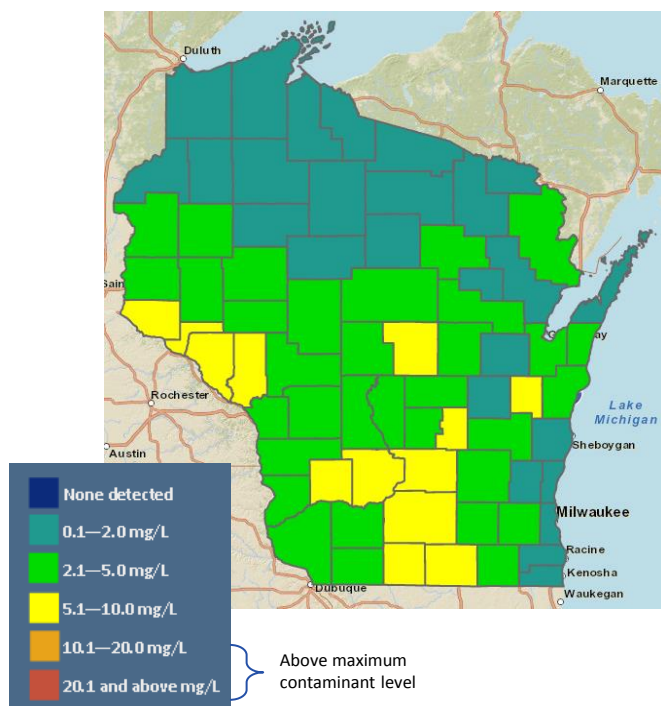
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS OCONTO COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.6**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2

● **3.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

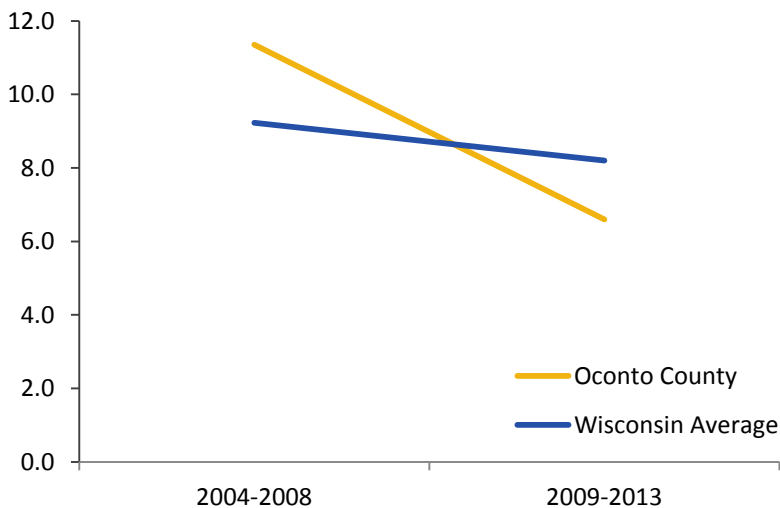
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

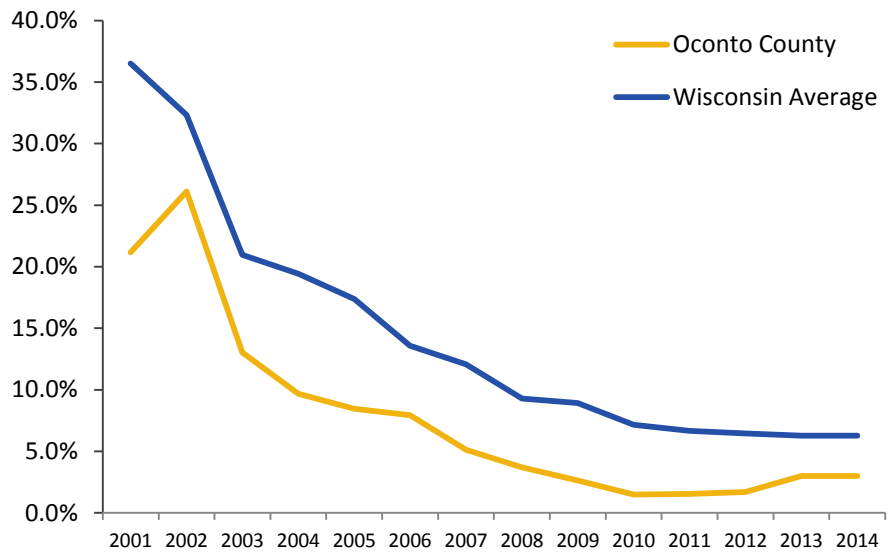
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

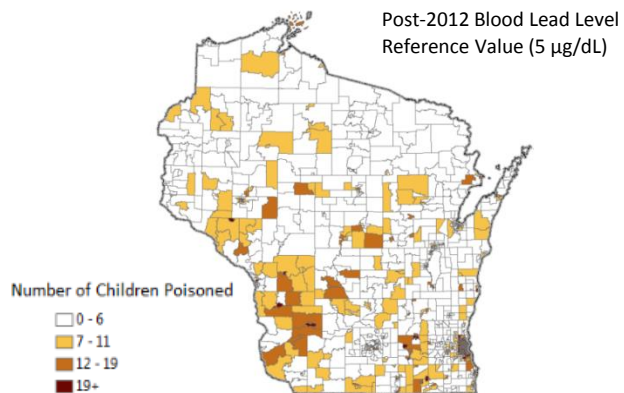
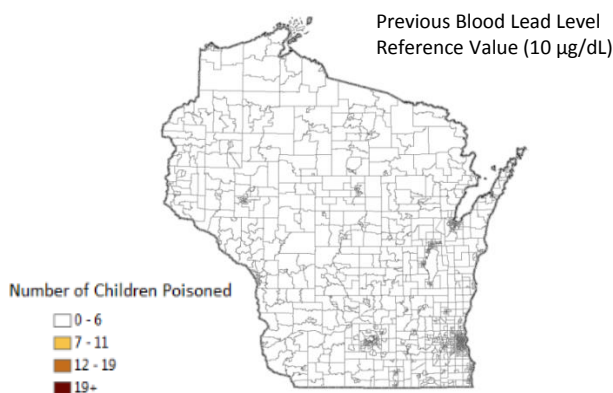
CHILDHOOD LEAD POISONING

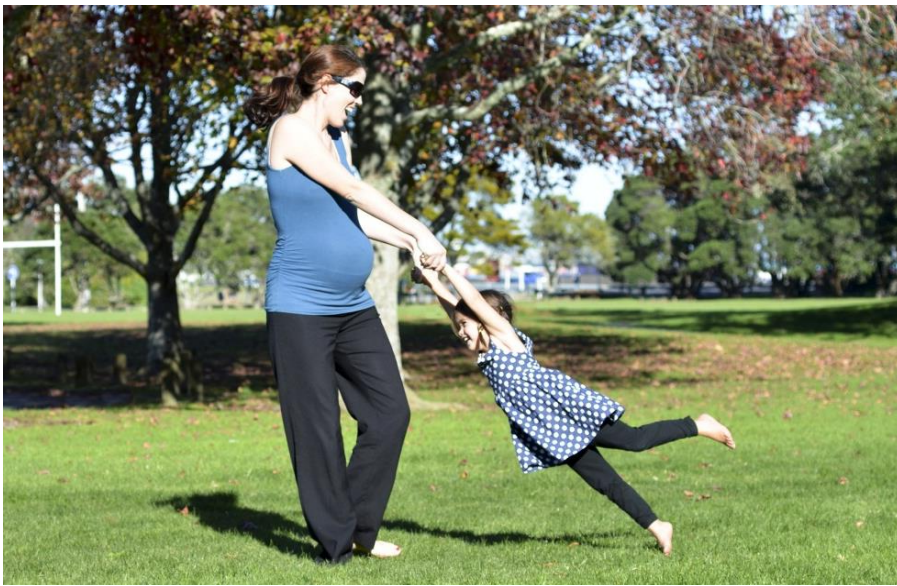
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

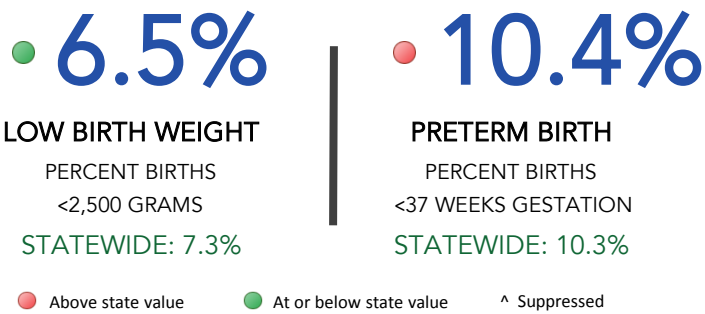
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES OCONTO COUNTY

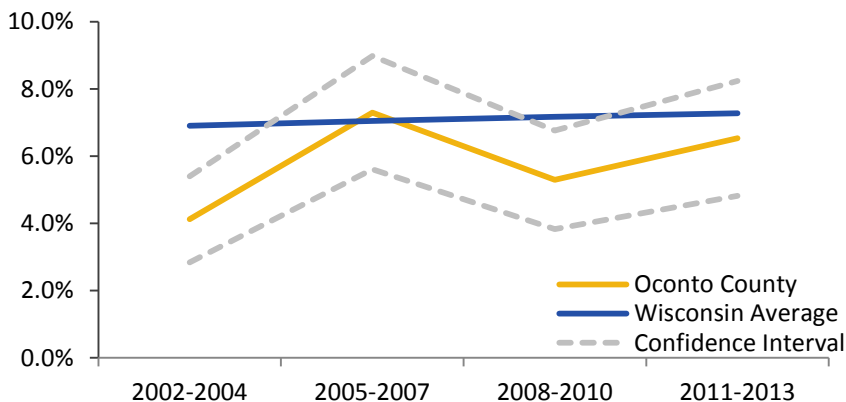
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

OCONTO COUNTY

PRETERM BIRTH

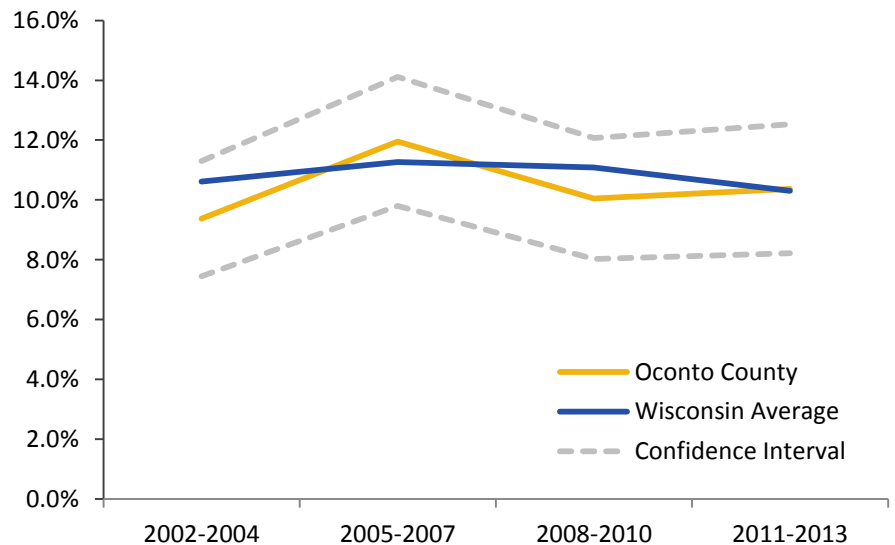
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS OCONTO COUNTY

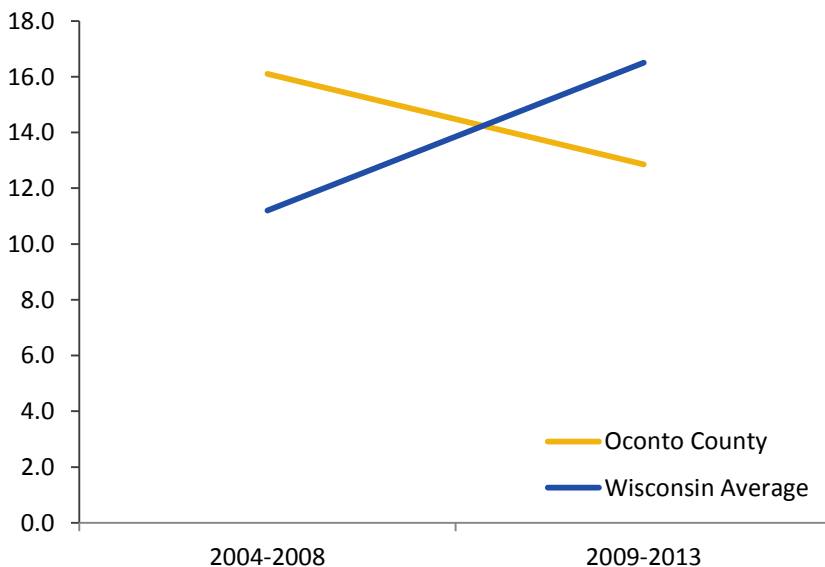
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 12.8</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 22.6</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 71.4</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 238.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



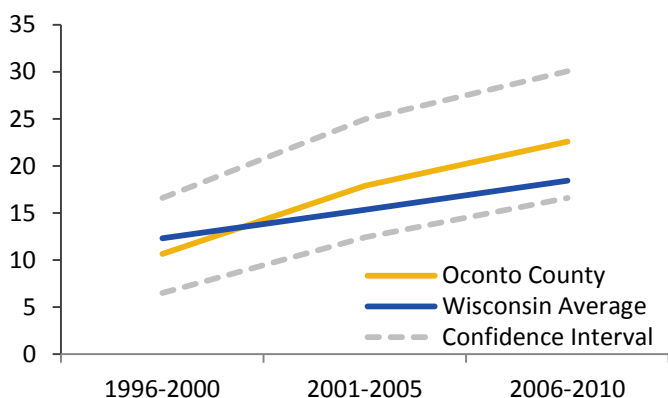


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



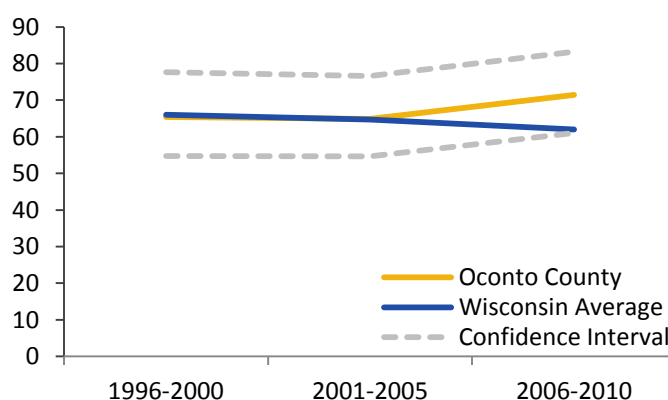
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



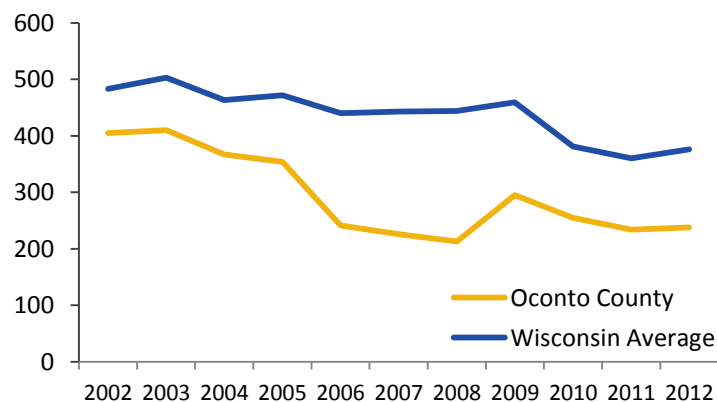
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

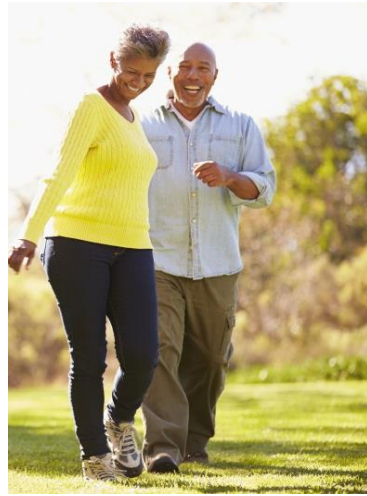
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



ONEIDA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

ONEIDA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.4 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 1.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 5.0 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.5% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.1% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 12.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 17.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 74.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 385.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY ONEIDA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

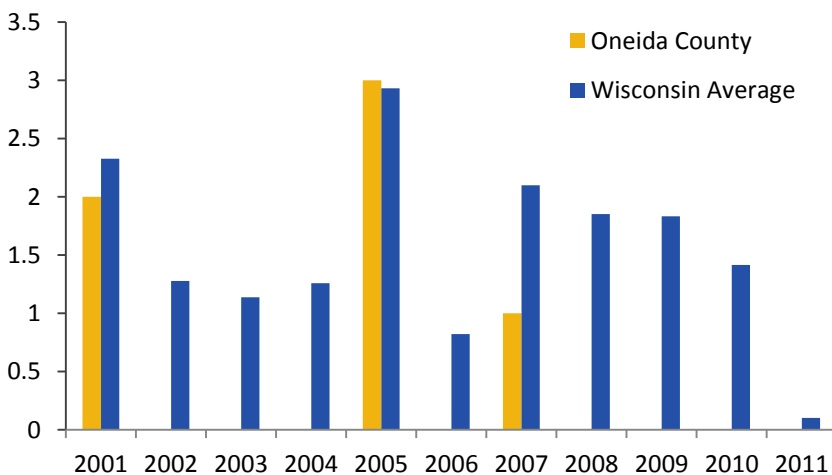
● 7.8

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

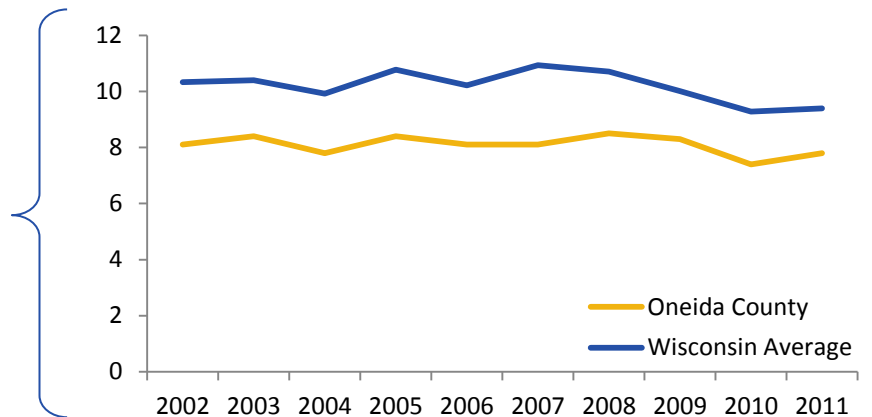
ONEIDA COUNTY

PARTICULATE MATTER 2.5

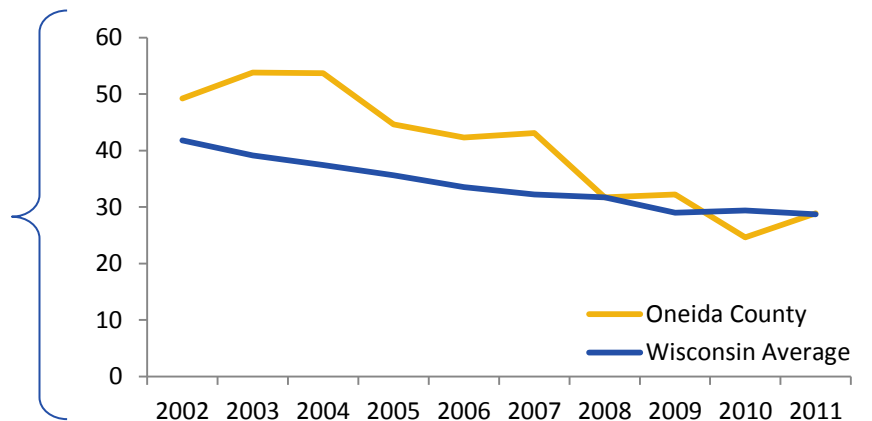
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

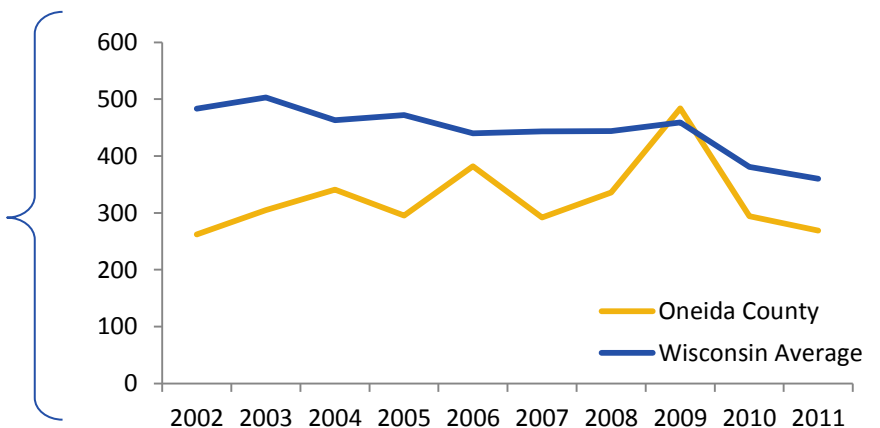
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



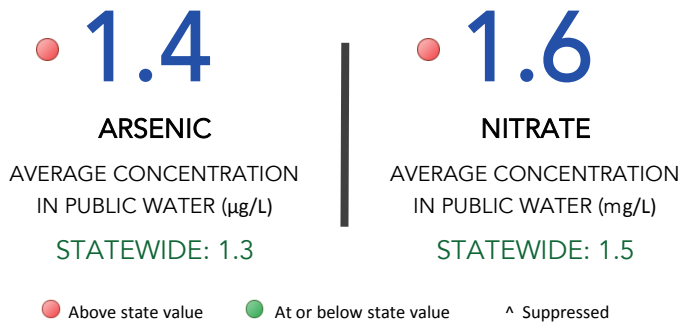
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY ONEIDA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

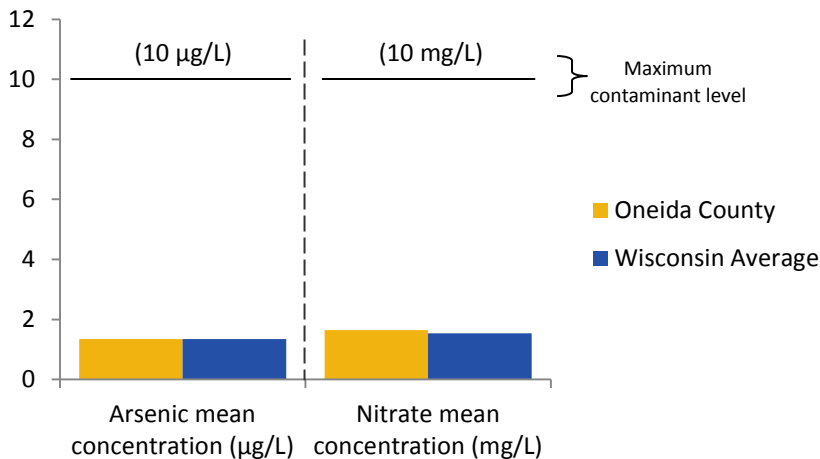
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY ONEIDA COUNTY

PRIVATE DRINKING WATER

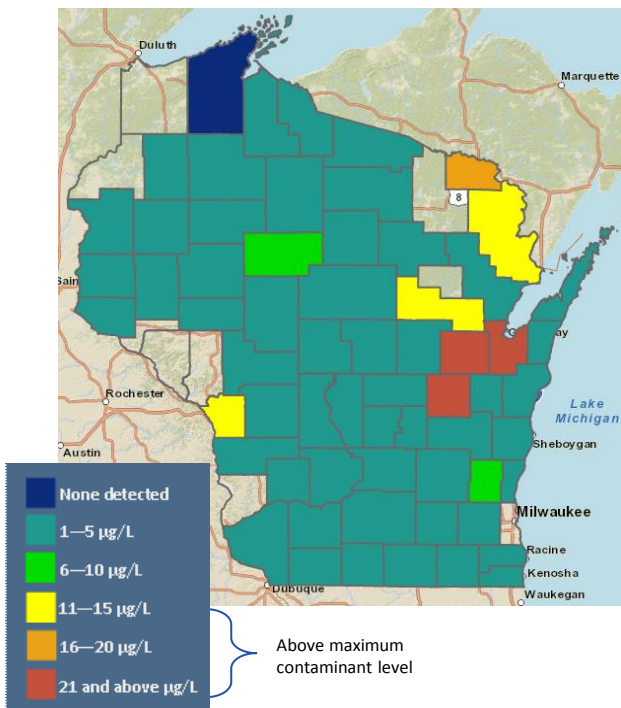
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

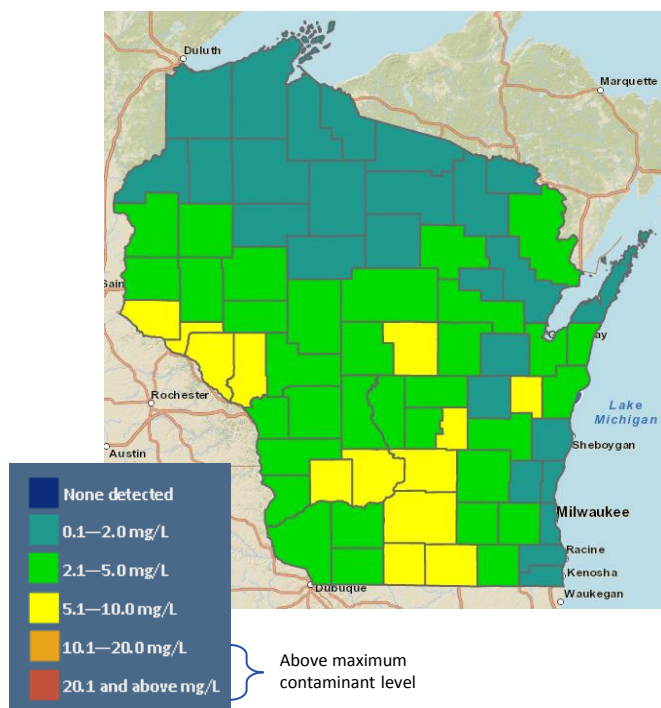
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS ONEIDA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **5.0**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **0.5%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

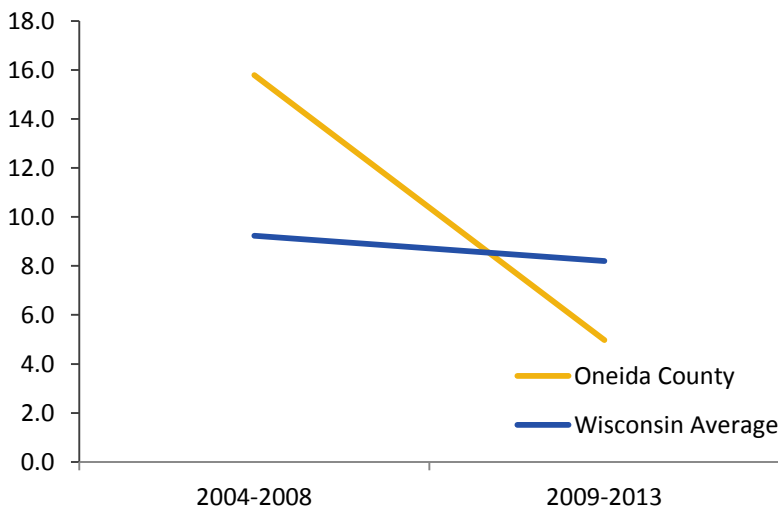
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

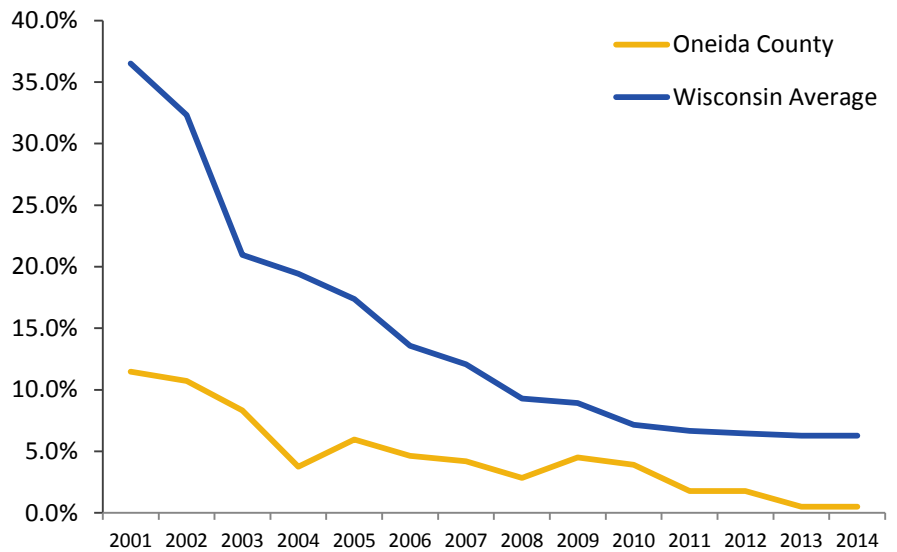
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

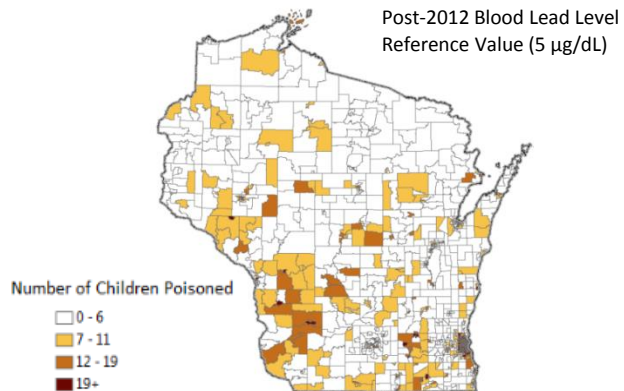
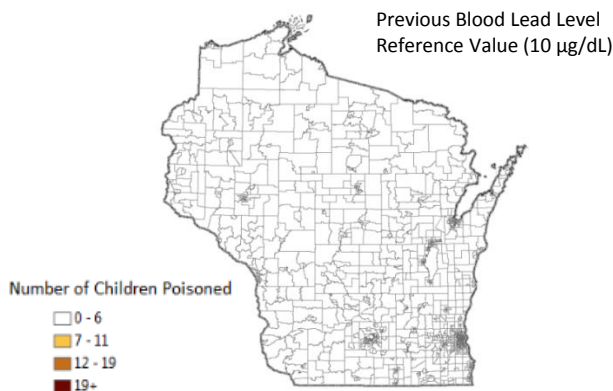
CHILDHOOD LEAD POISONING

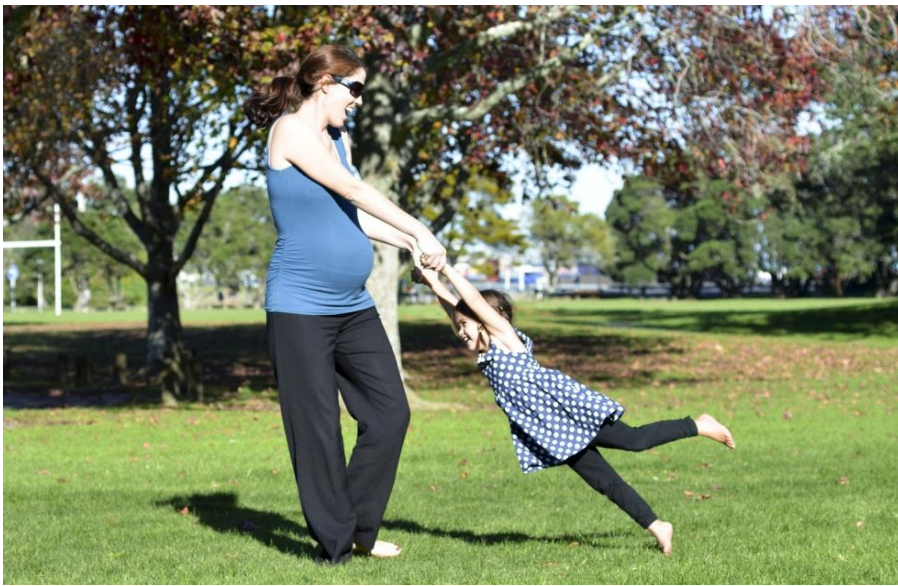
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

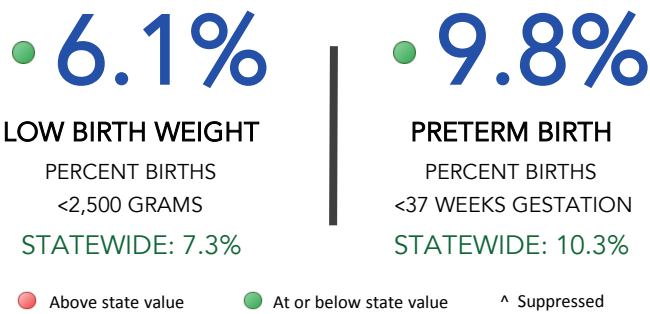
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES ONEIDA COUNTY

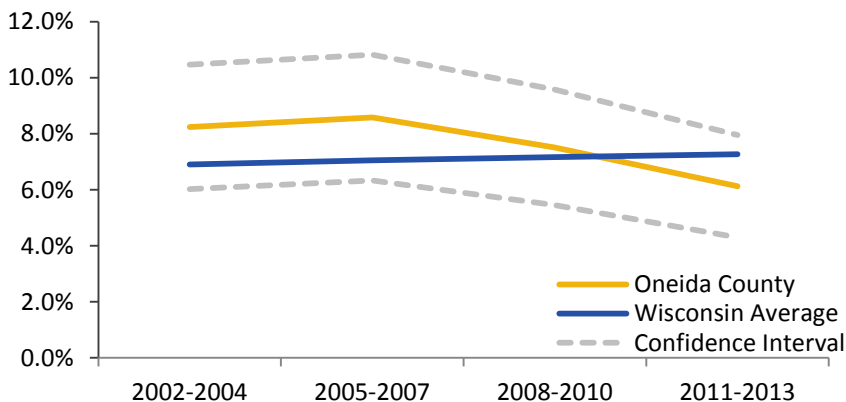
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES ONEIDA COUNTY

PRETERM BIRTH

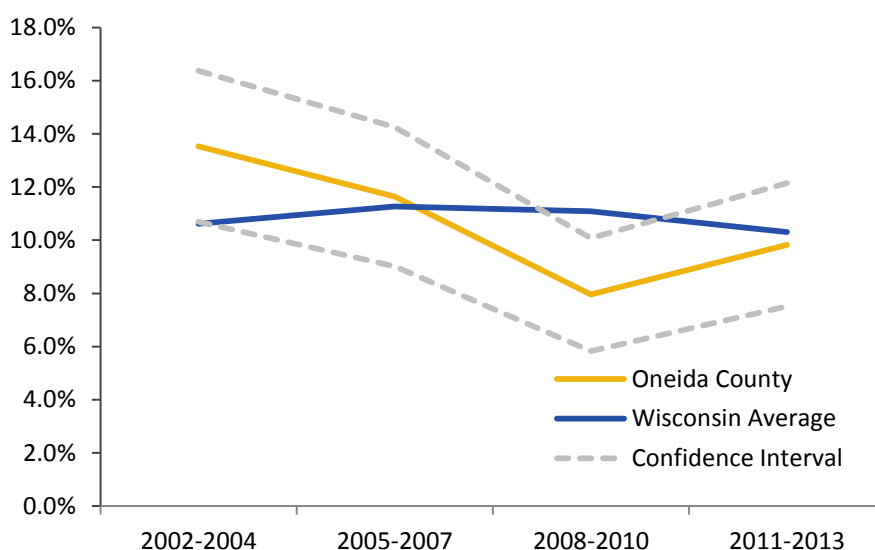
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

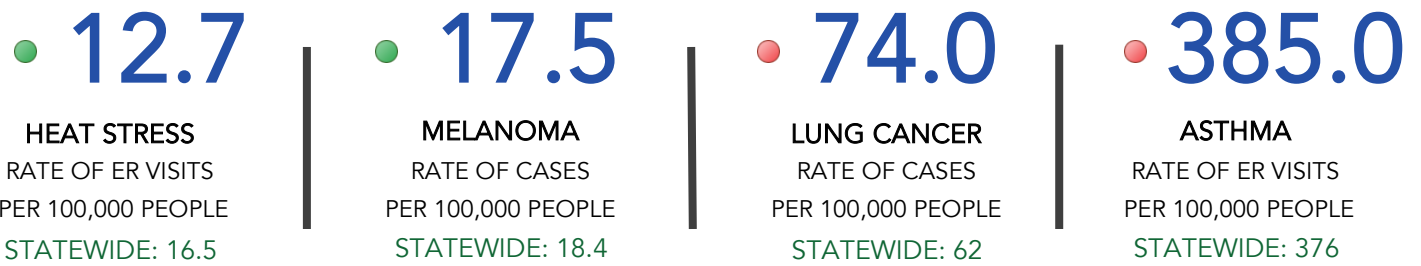
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS ONEIDA COUNTY

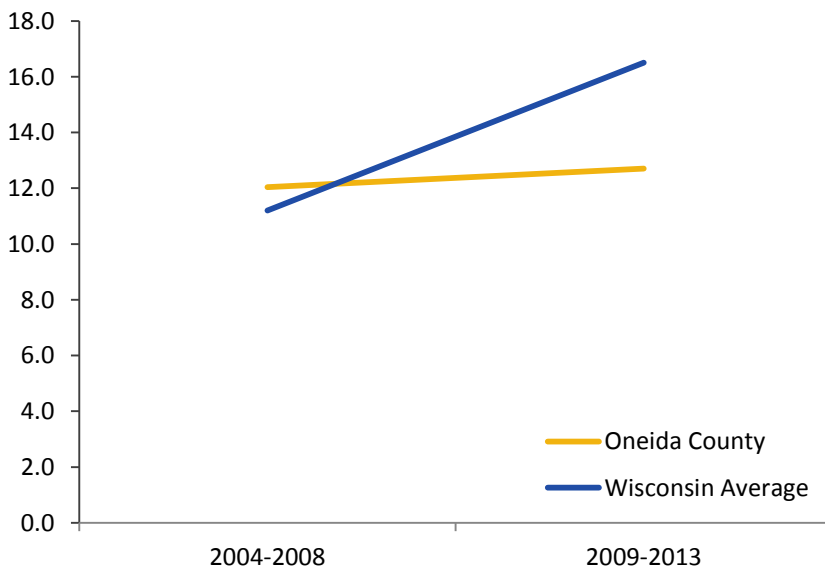
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



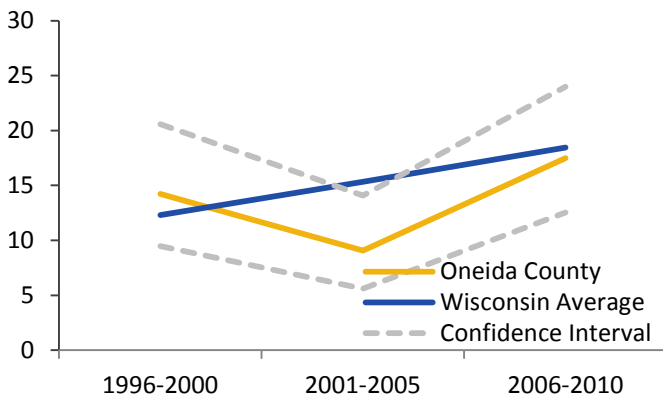


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



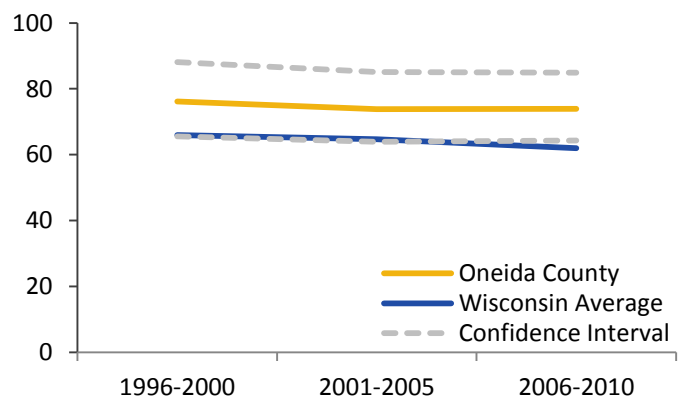
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



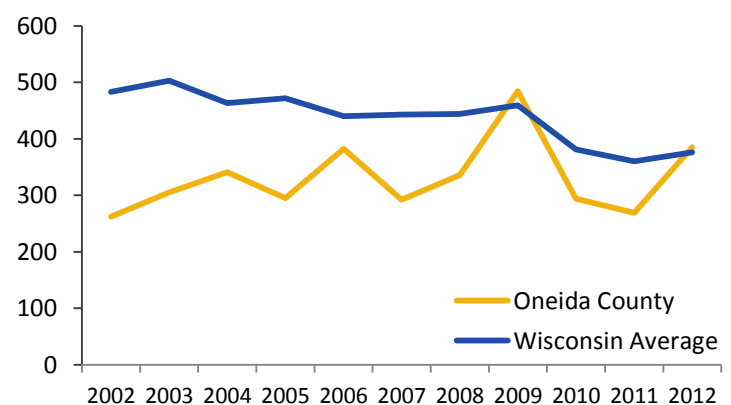
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

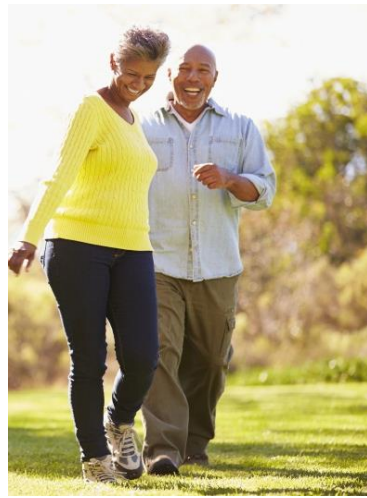
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



OUTAGAMIE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

OUTAGAMIE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

1.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

1.1 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

1.1 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.1 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

6.0 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

3.1% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

7.3% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

10.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

14.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

25.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

52.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

244.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY OUTAGAMIE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

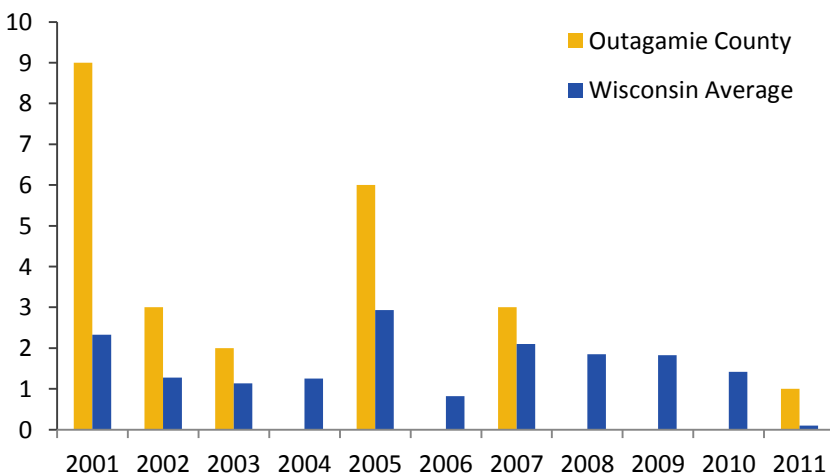
● **1.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **1.1**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **10.5**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

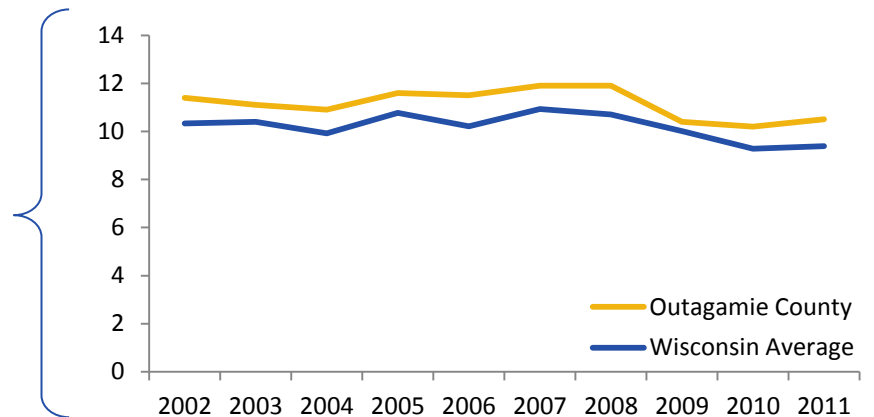
OUTAGAMIE COUNTY

PARTICULATE MATTER 2.5

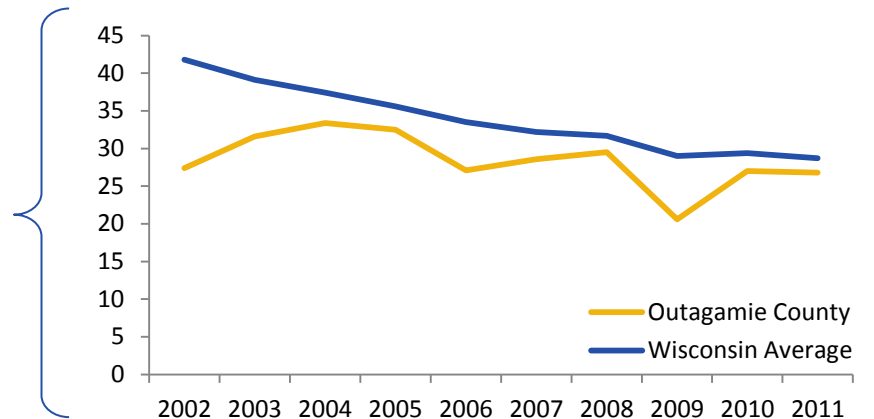
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

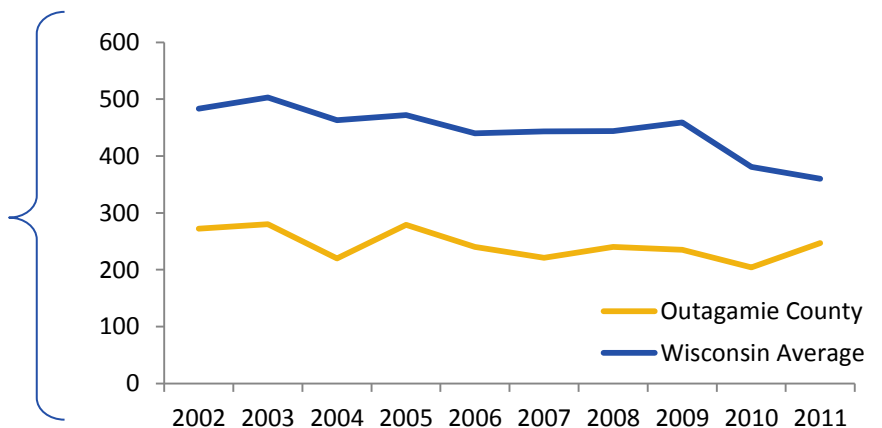
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



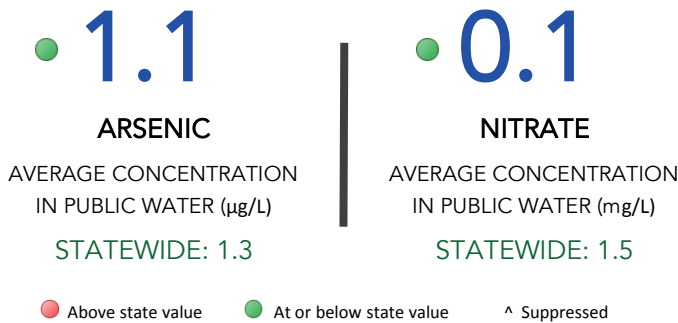
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY OUTAGAMIE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

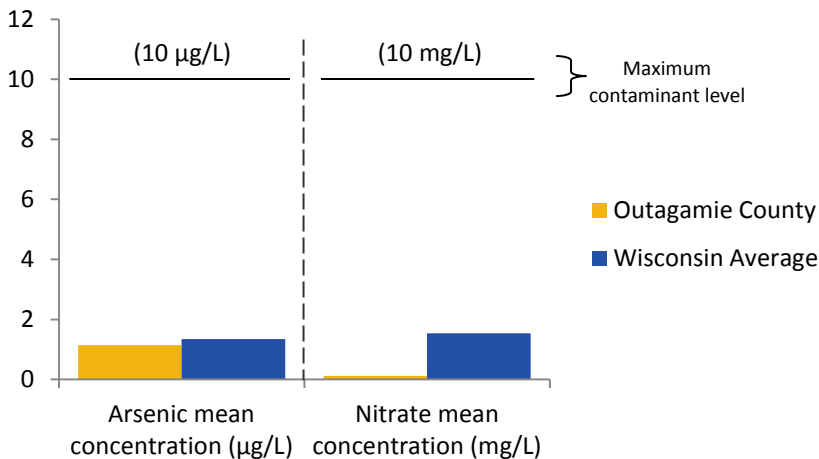
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY OUTAGAMIE COUNTY

PRIVATE DRINKING WATER

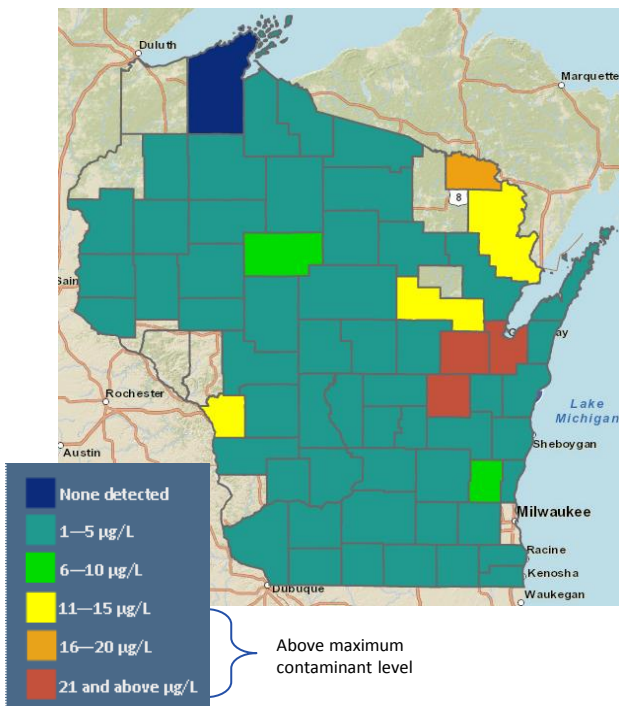
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 $\mu\text{g/L}$ maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

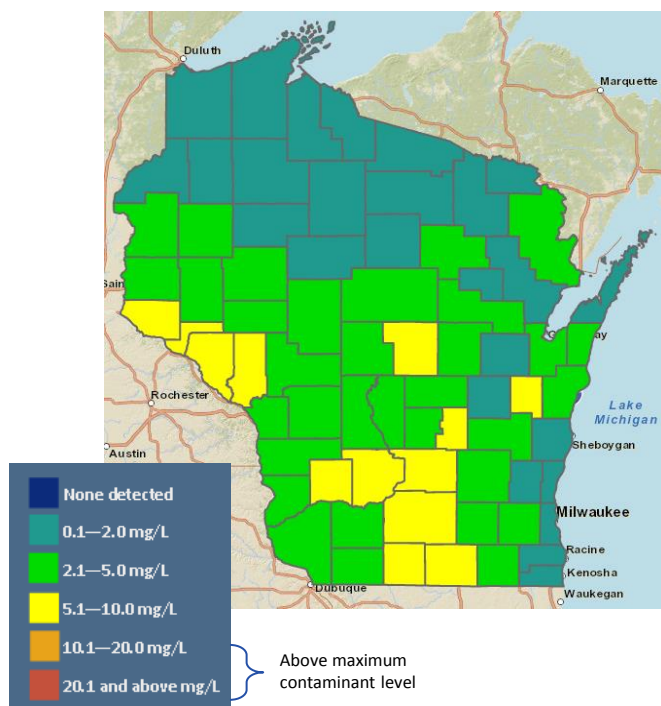
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION ($\mu\text{g/L}$)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS OUTAGAMIE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.0**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **3.1%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

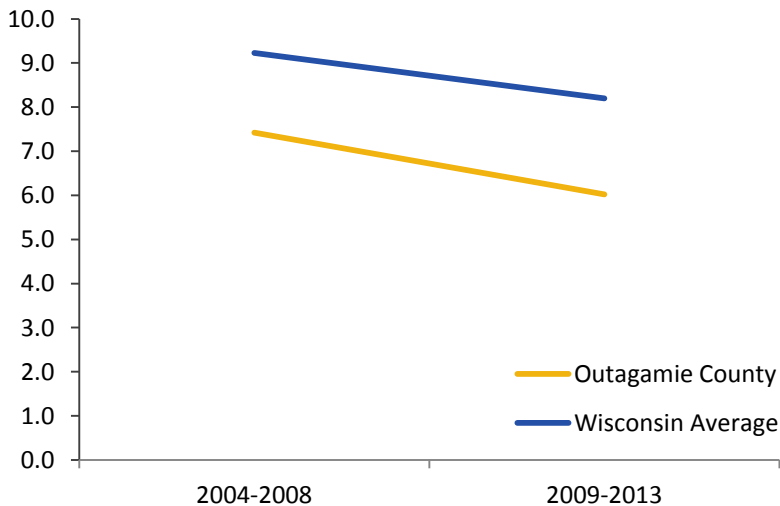
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

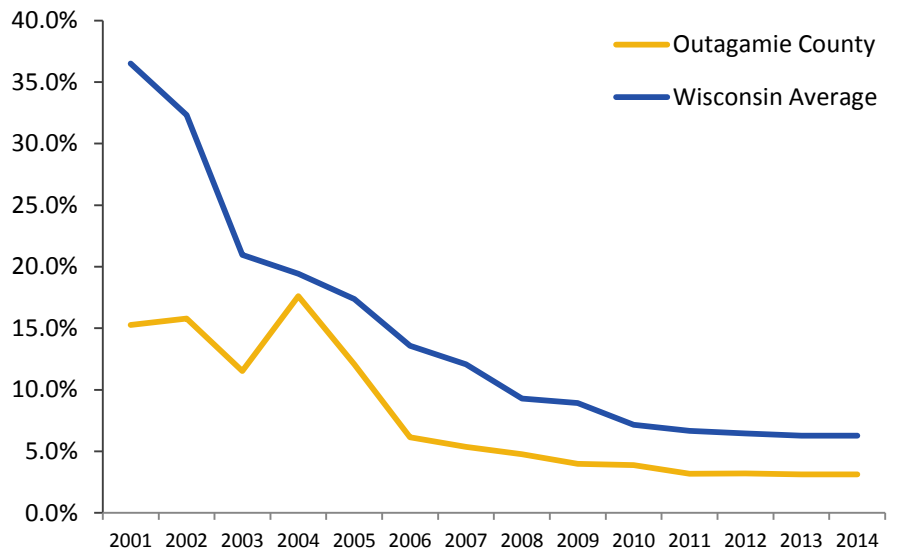
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

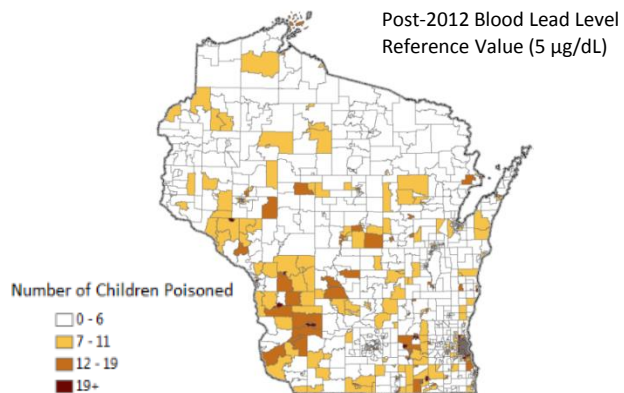
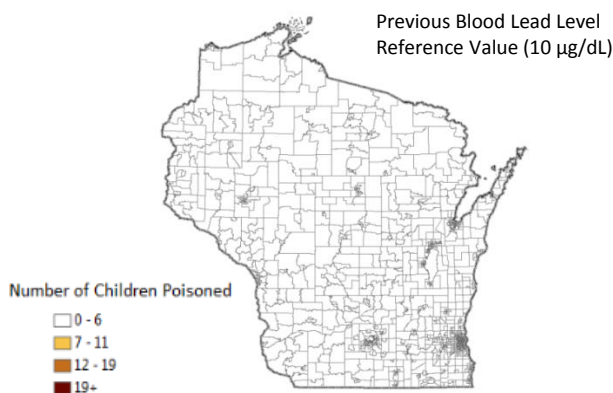
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

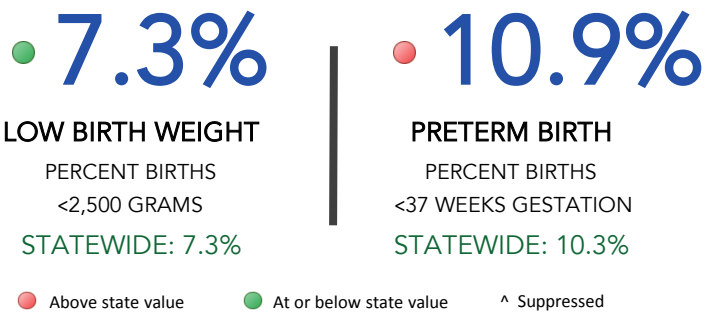
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES OUTAGAMIE COUNTY

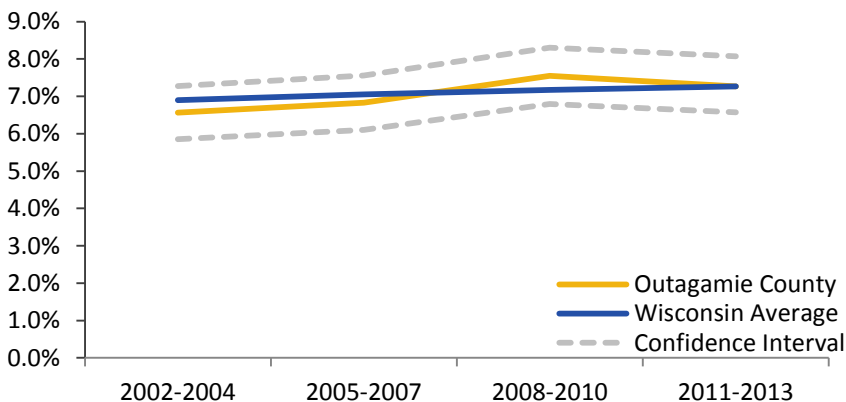
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

OUTAGAMIE COUNTY

PRETERM BIRTH

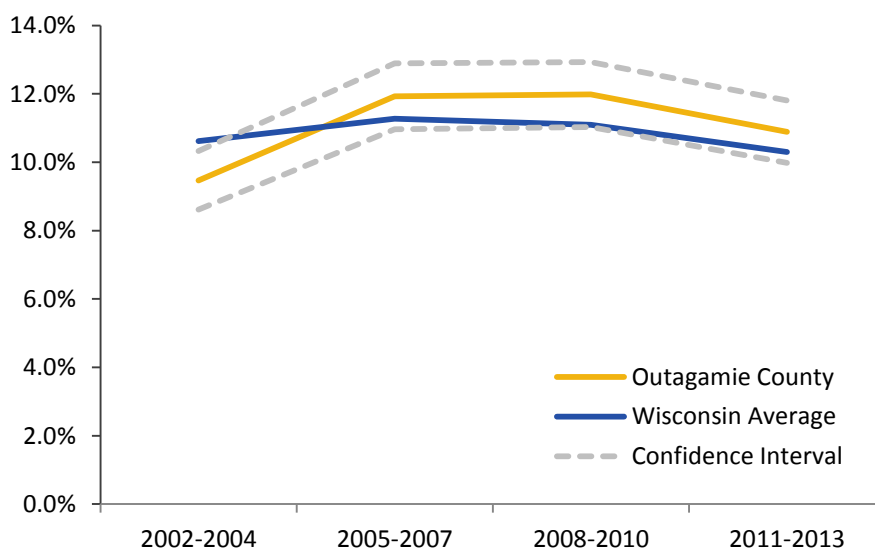
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS OUTAGAMIE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **14.5**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

● **25.3**
MELANOMA
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 18.4

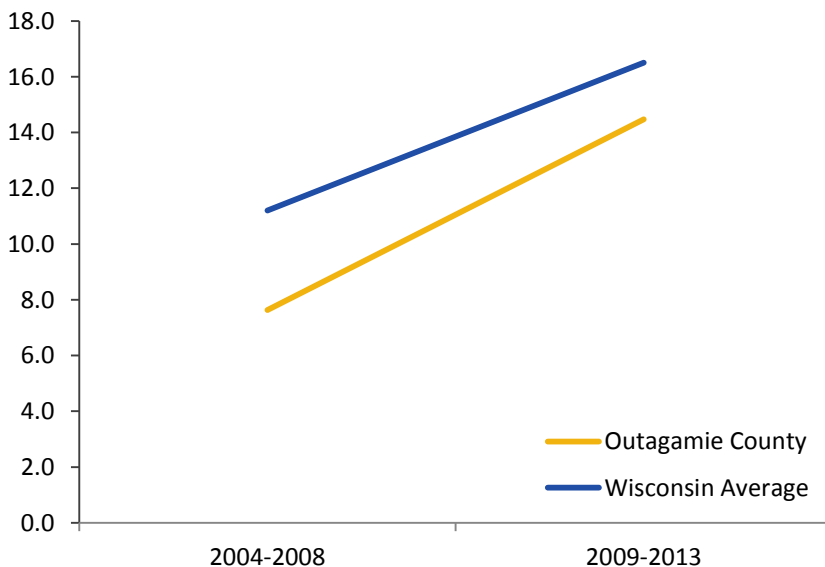
● **52.5**
LUNG CANCER
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 62

● **244.0**
ASTHMA
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



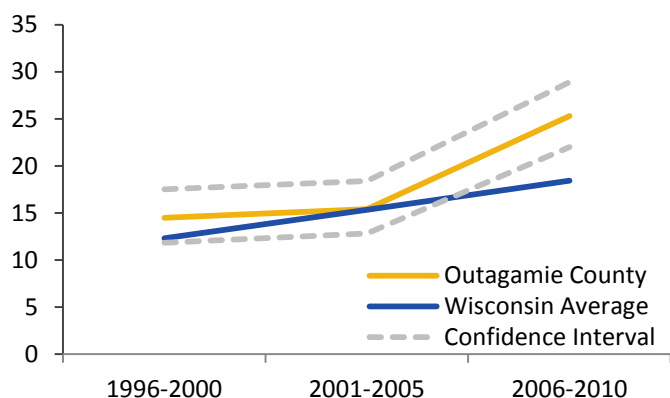


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



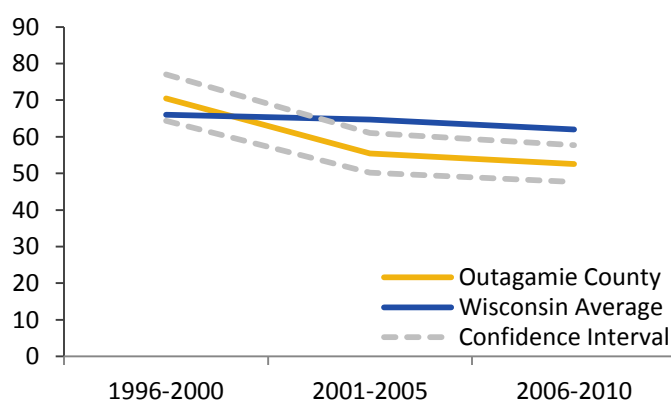
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



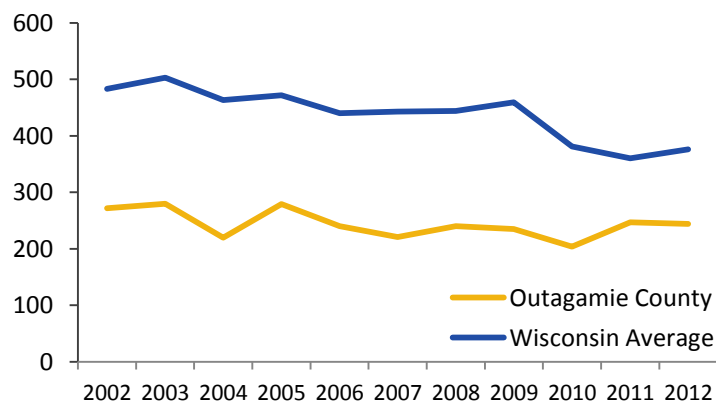
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



OZAUKEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

OZAUKEE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

4.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

3.7 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.1 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

3.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

2.1% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

5.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

8.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

10.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

24.8 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

49.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

133.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY OZAUKEE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

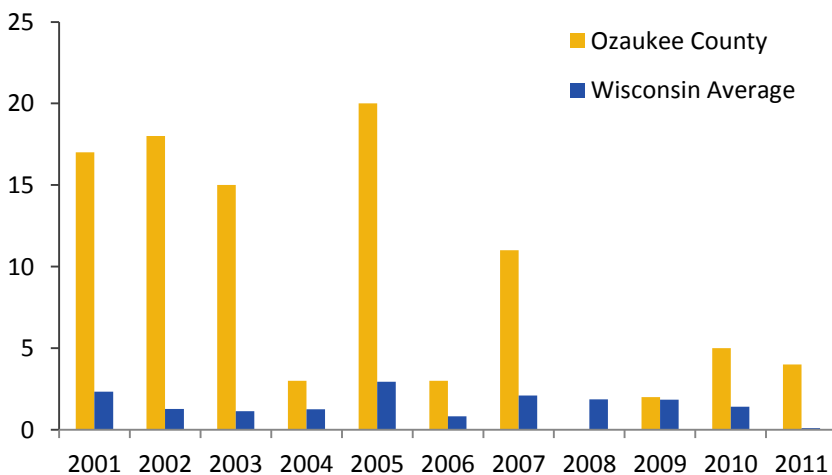
● **4.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **10.3**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m3)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

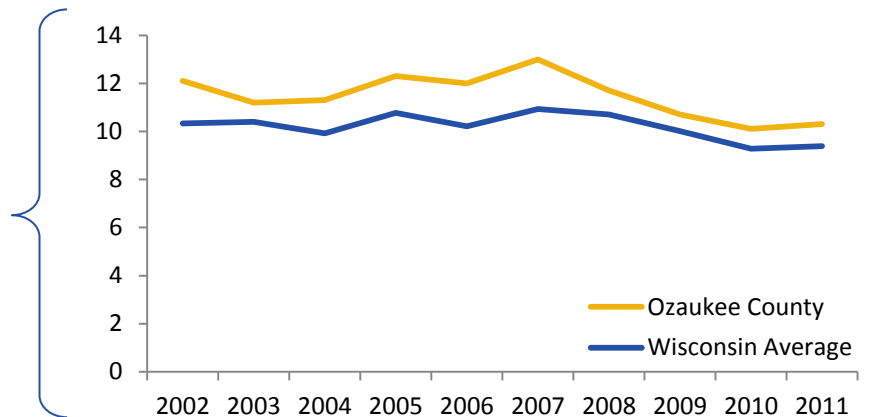
OZAUKEE COUNTY

PARTICULATE MATTER 2.5

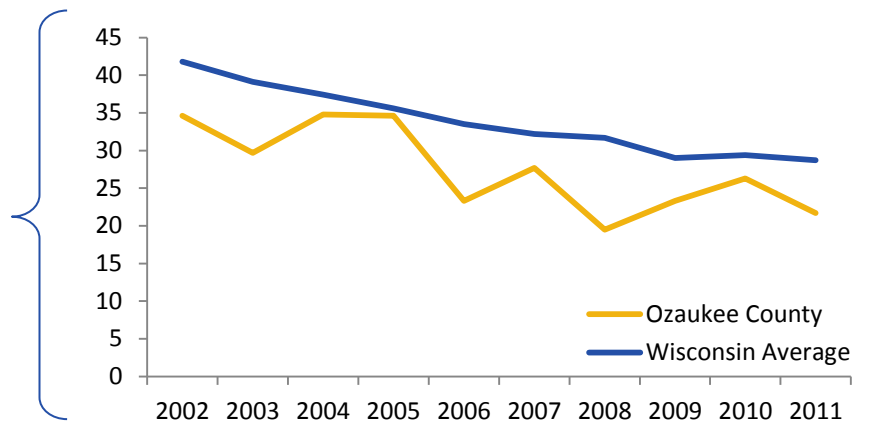
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

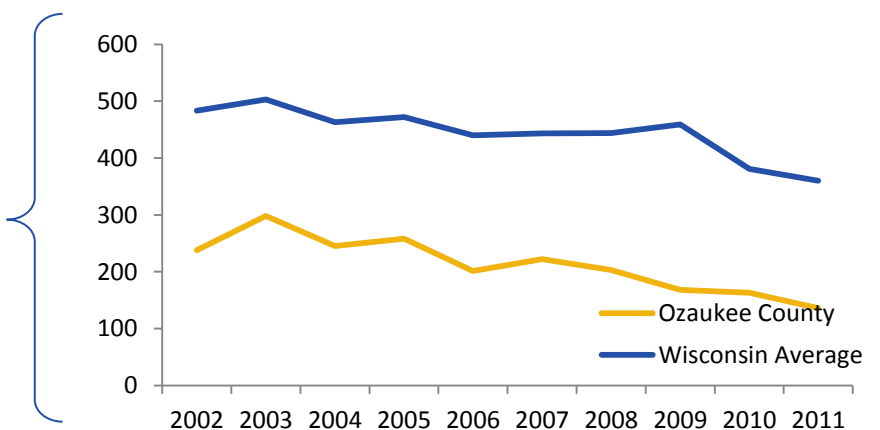
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



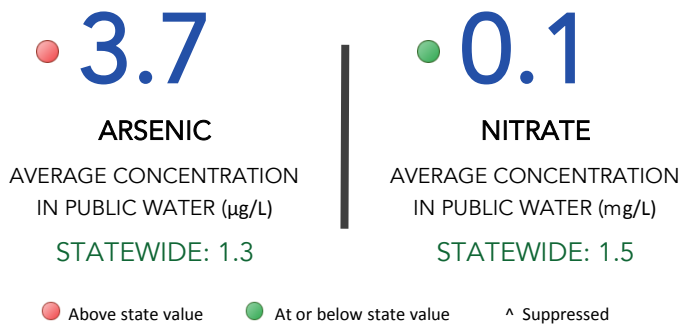
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY OZAUKEE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

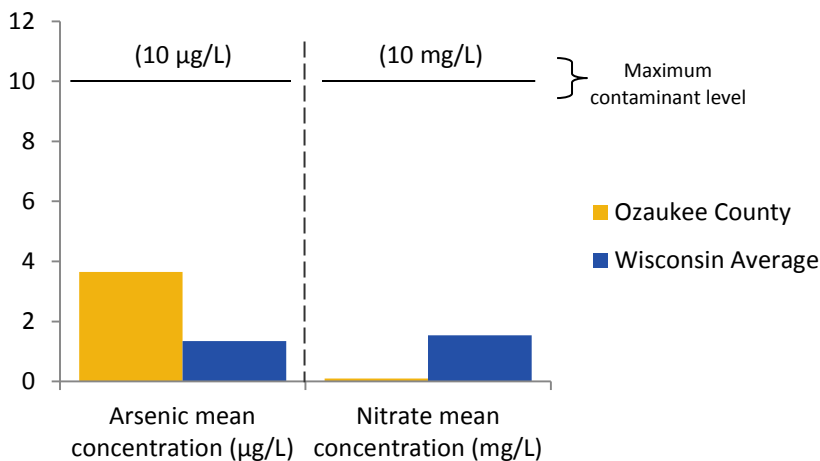
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY OZAUKEE COUNTY

PRIVATE DRINKING WATER

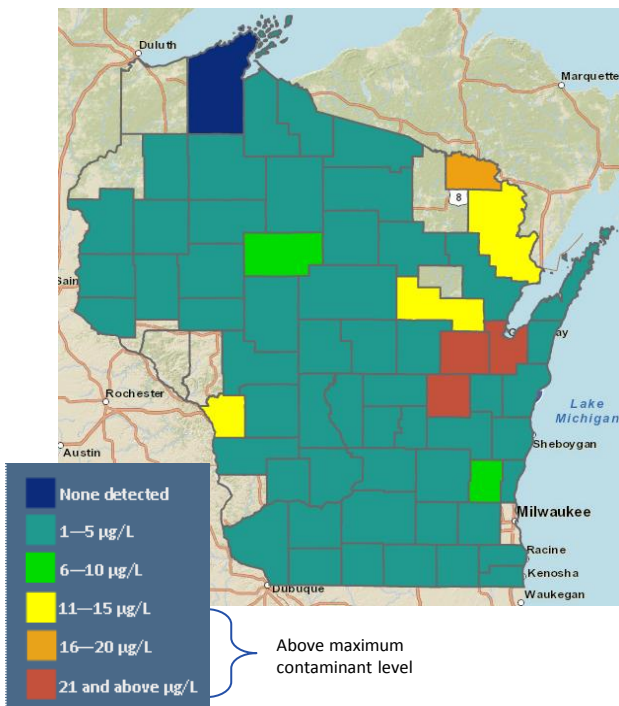
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

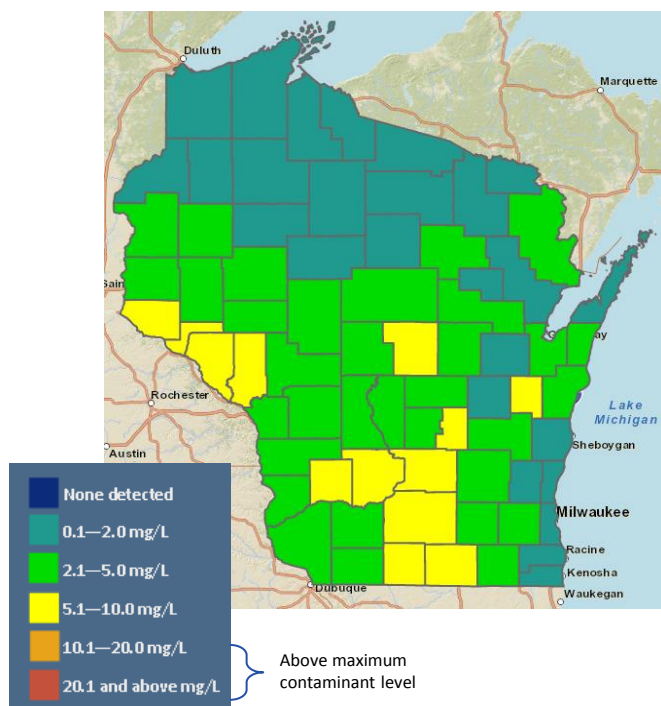
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS OZAUKEE COUNTY

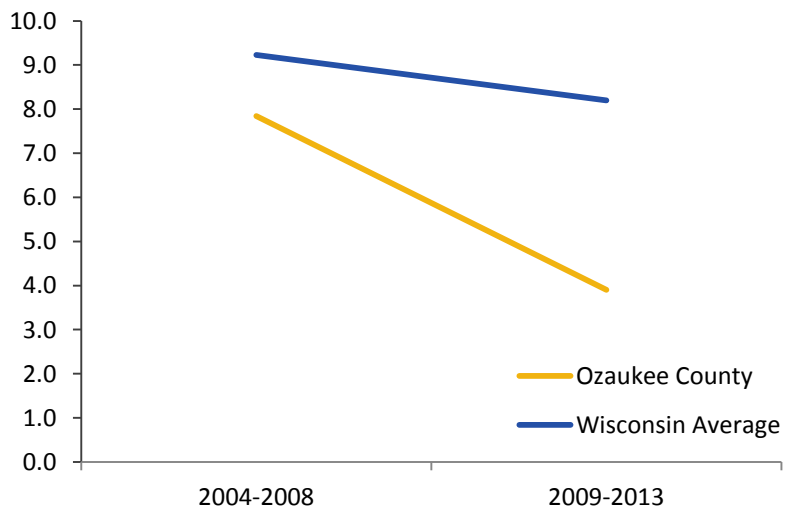
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

- **3.9**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2

- **2.1%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

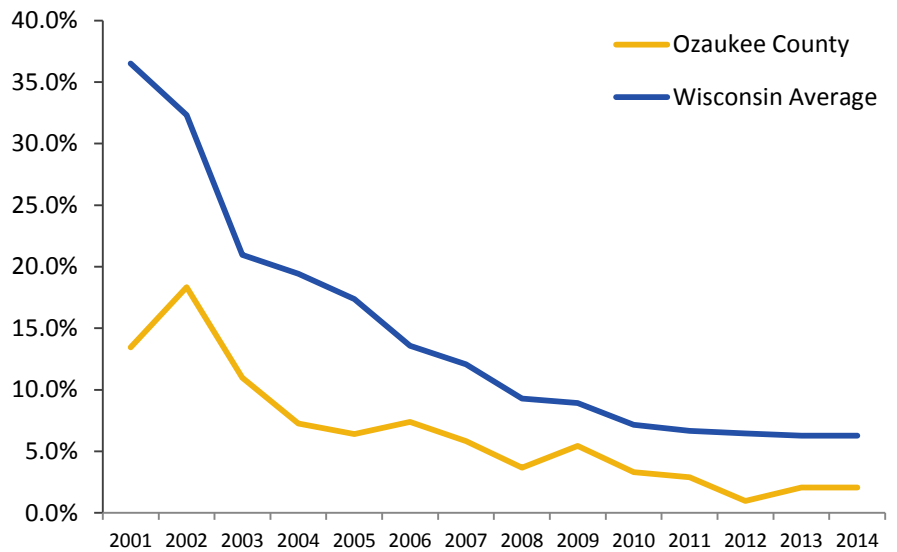
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

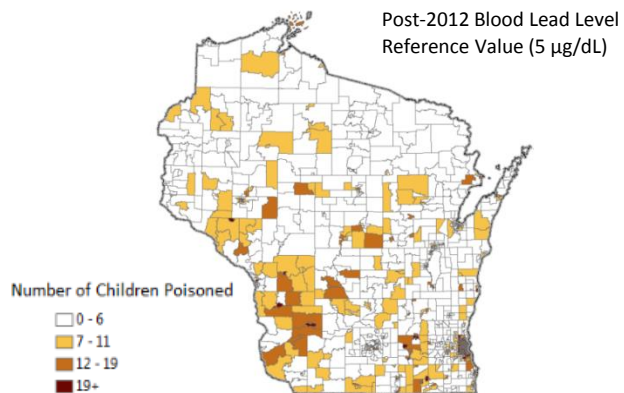
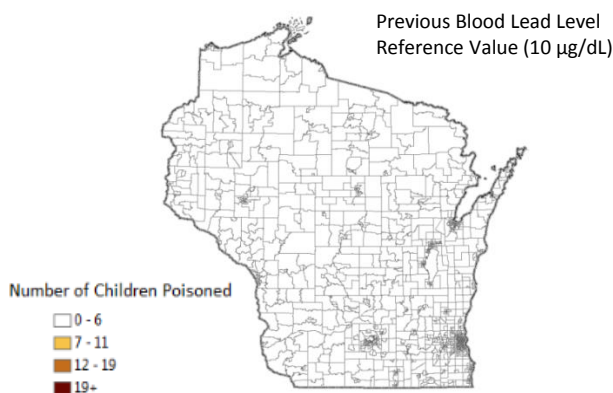
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES OZAUKEE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **5.9%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.4%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

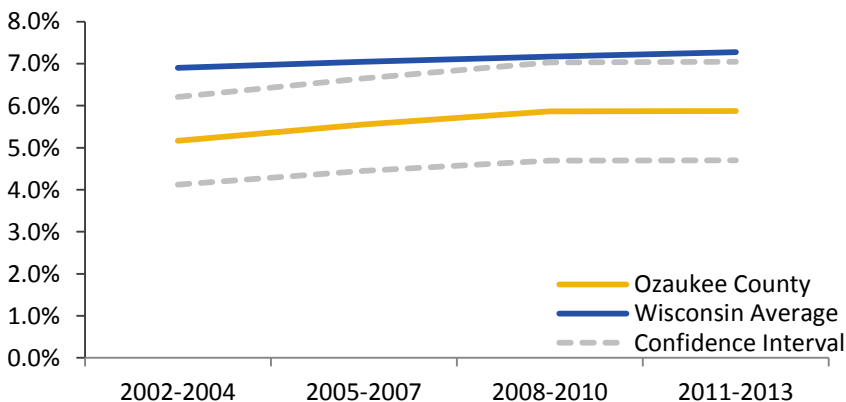
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

OZAUKEE COUNTY

PRETERM BIRTH

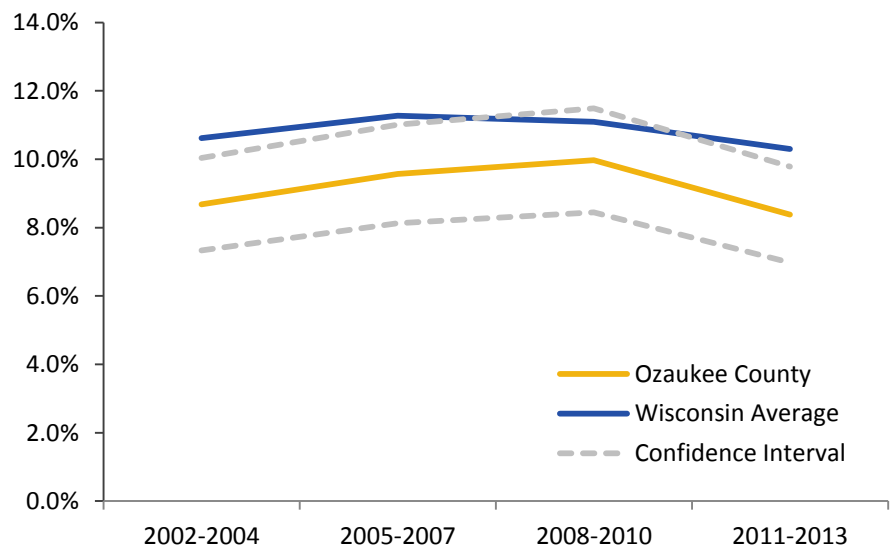
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS OZAUKEE COUNTY

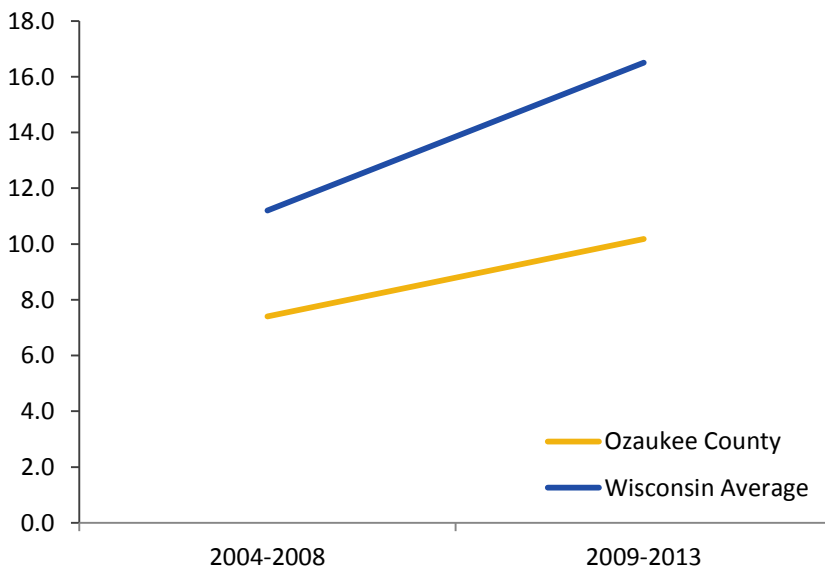
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 10.2</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 24.8</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 49.7</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 133.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



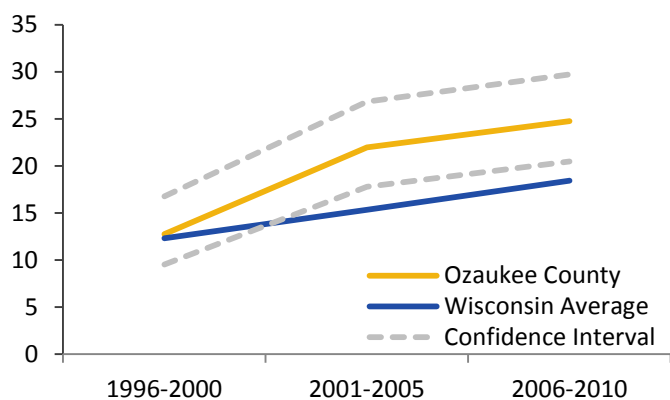


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



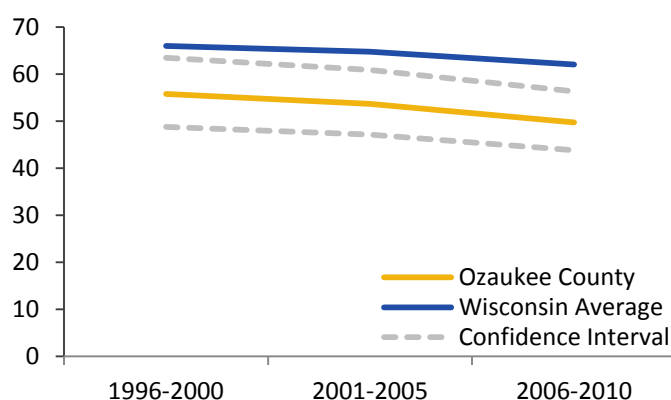
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



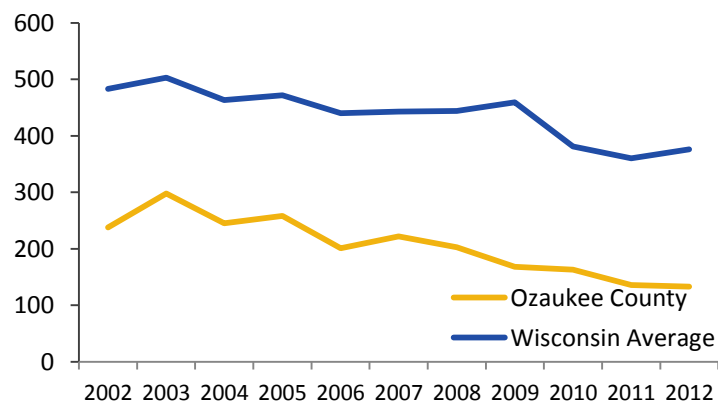
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

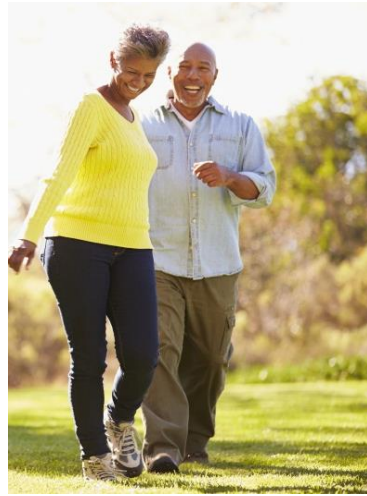
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
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dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



PEPIN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

PEPIN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.5 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 0.0 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.9% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 20.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

^ ^ | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 39.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 207.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY PEPIN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

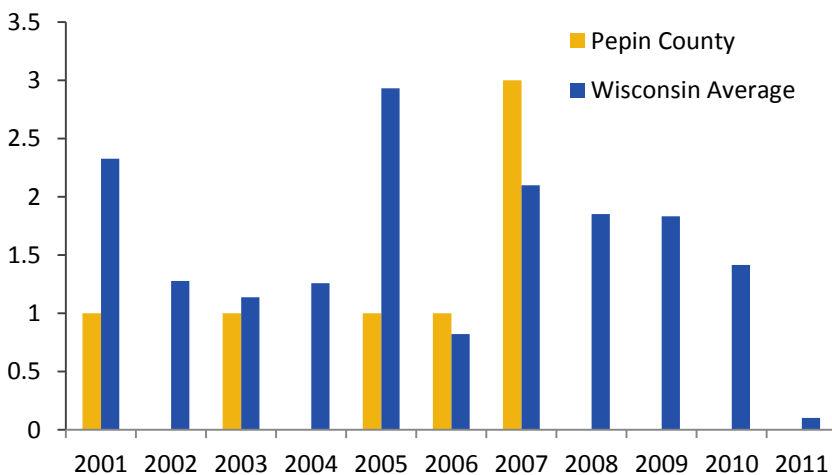
● 9.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

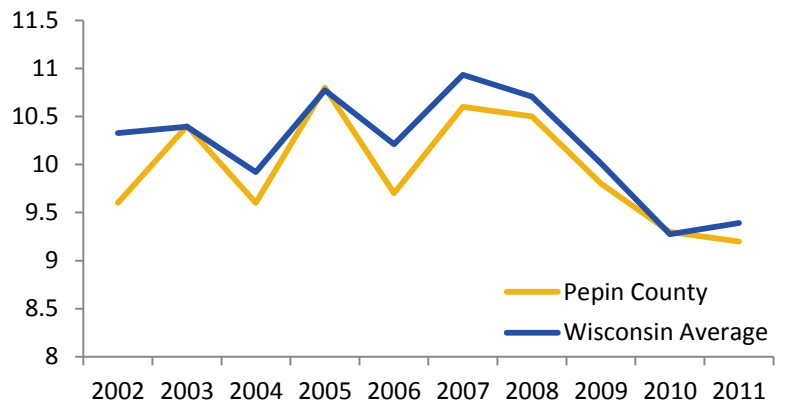
PEPIN COUNTY

PARTICULATE MATTER 2.5

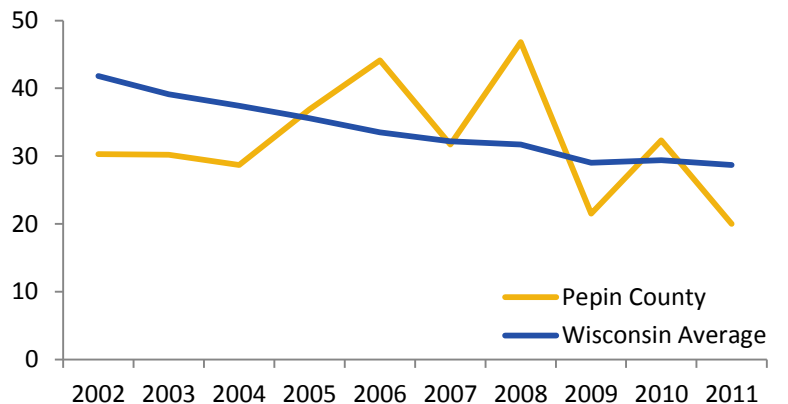
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

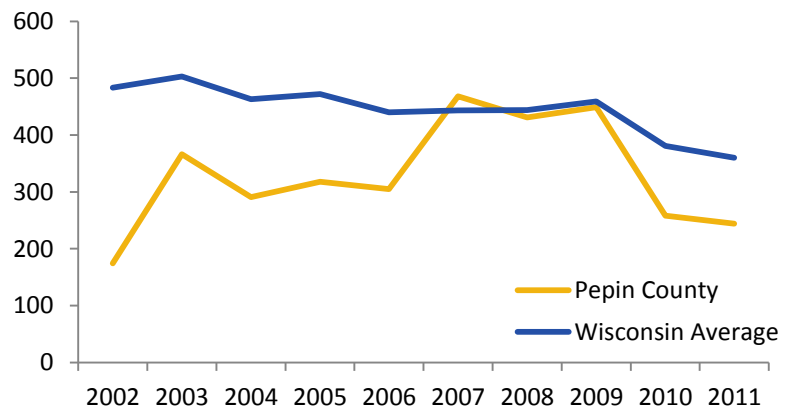
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



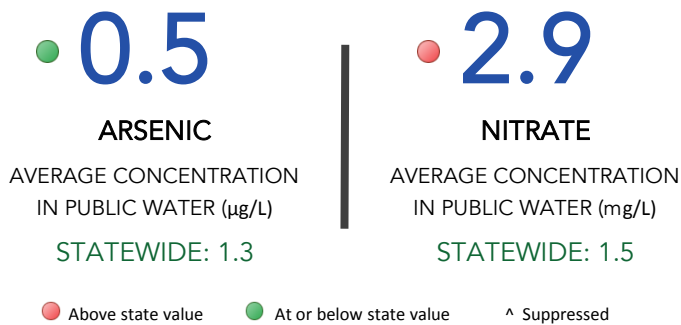
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY PEPIN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

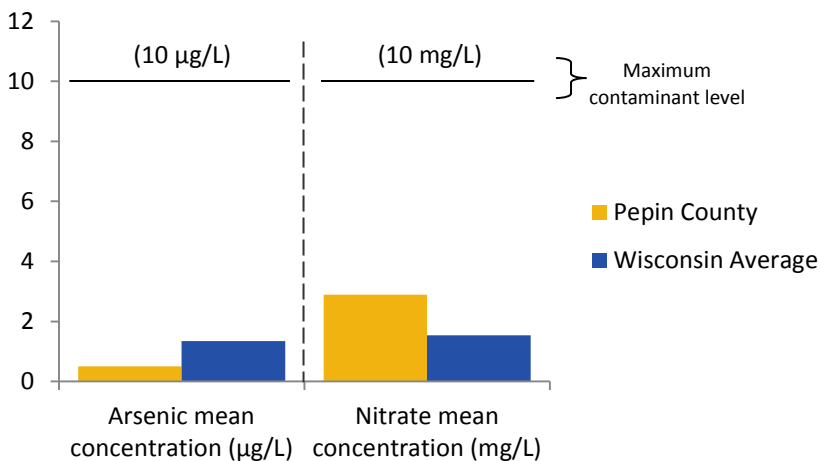
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY PEPIN COUNTY

PRIVATE DRINKING WATER

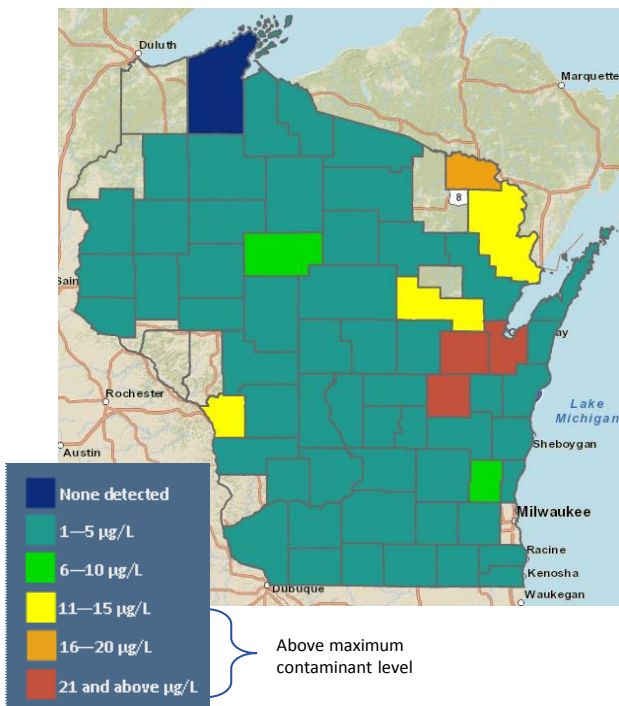
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

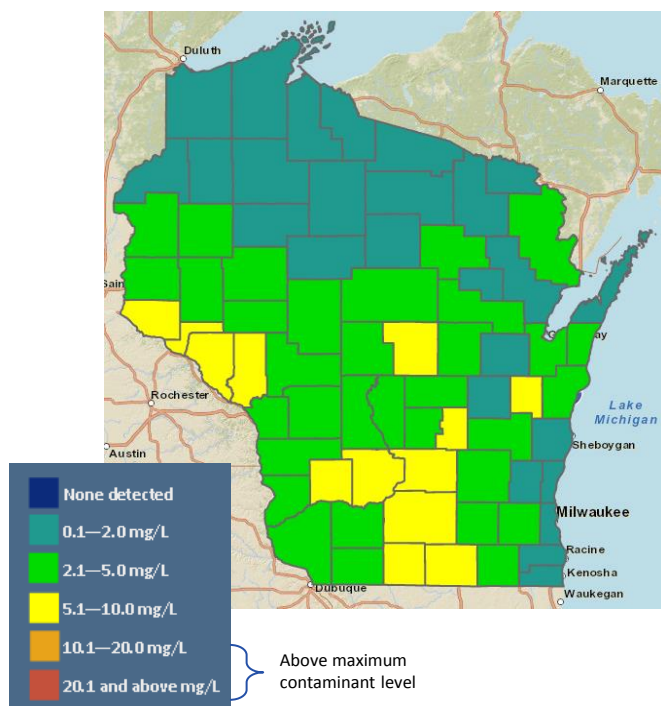
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS PEPIN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **0.0**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **3.9%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

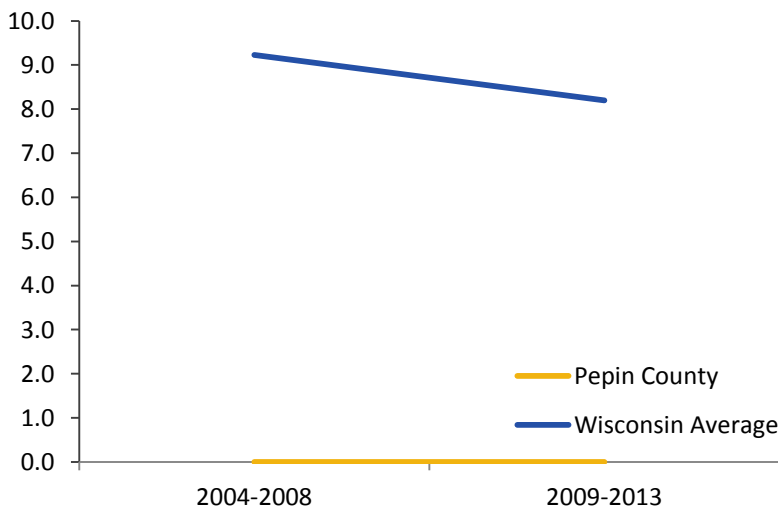
The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

STATEWIDE: 8.2

STATEWIDE: 6.3%

● Above state value ● At or below state value ▲ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

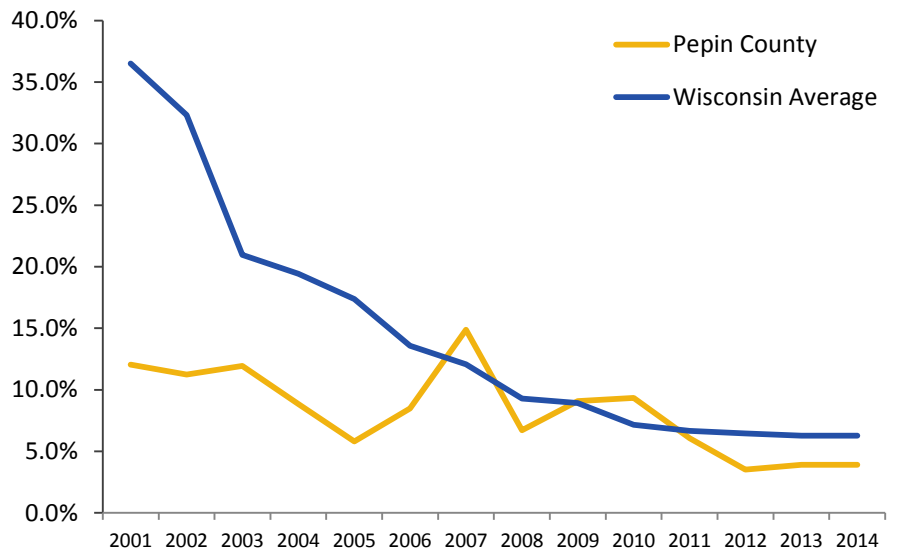
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

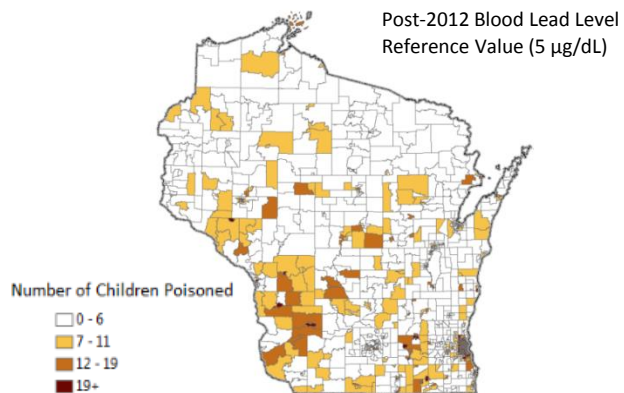
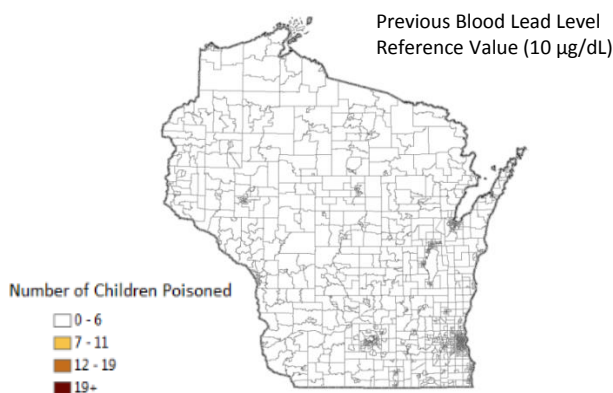
CHILDHOOD LEAD POISONING

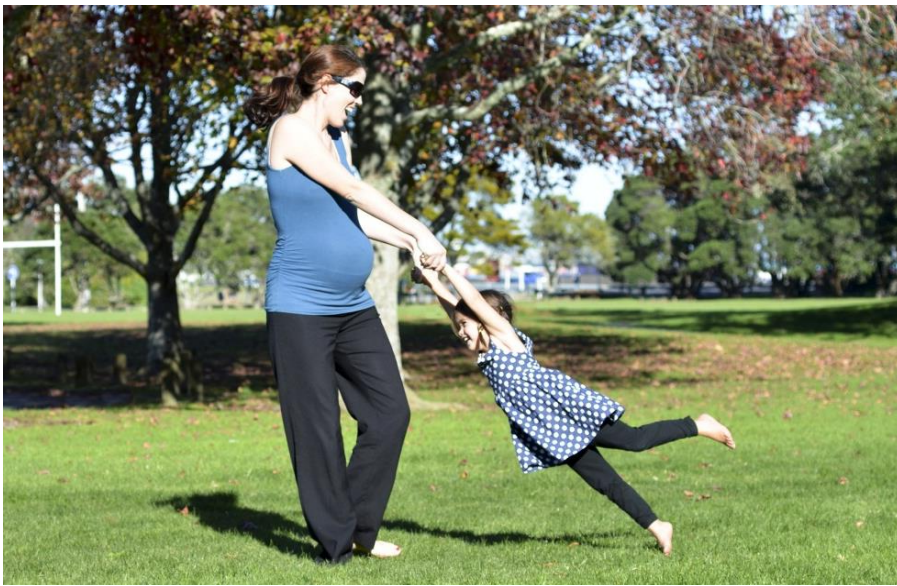
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

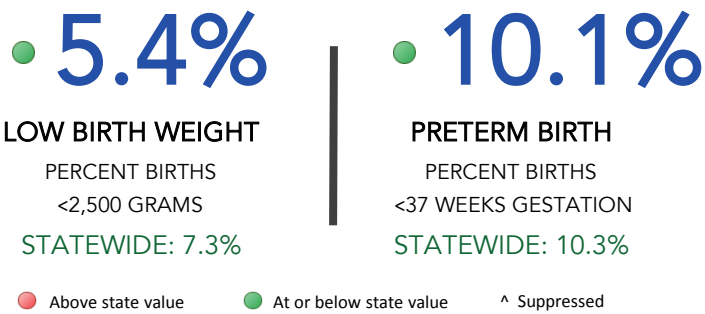
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES PEPIN COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

PEPIN COUNTY

PRETERM BIRTH

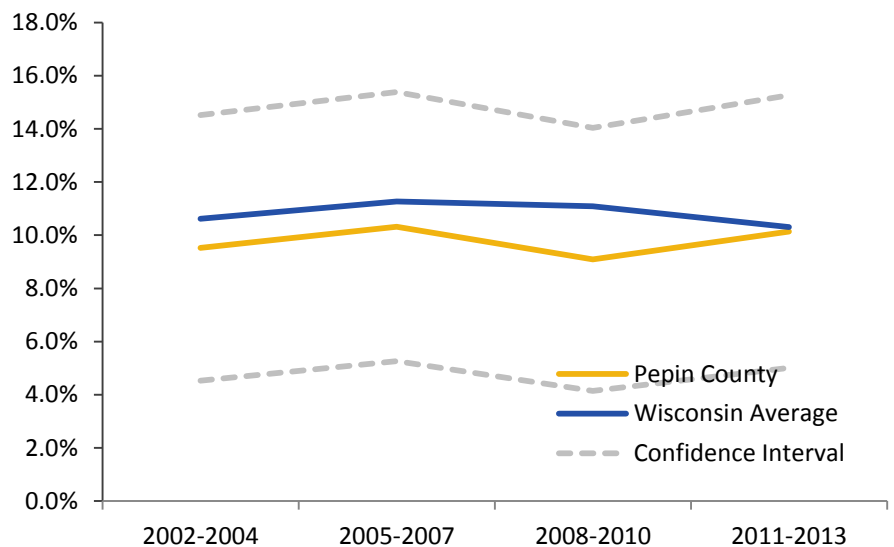
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

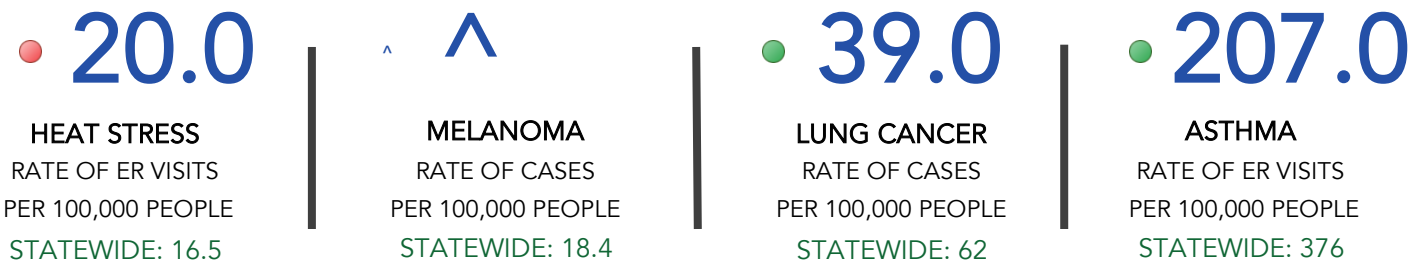
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS PEPIN COUNTY

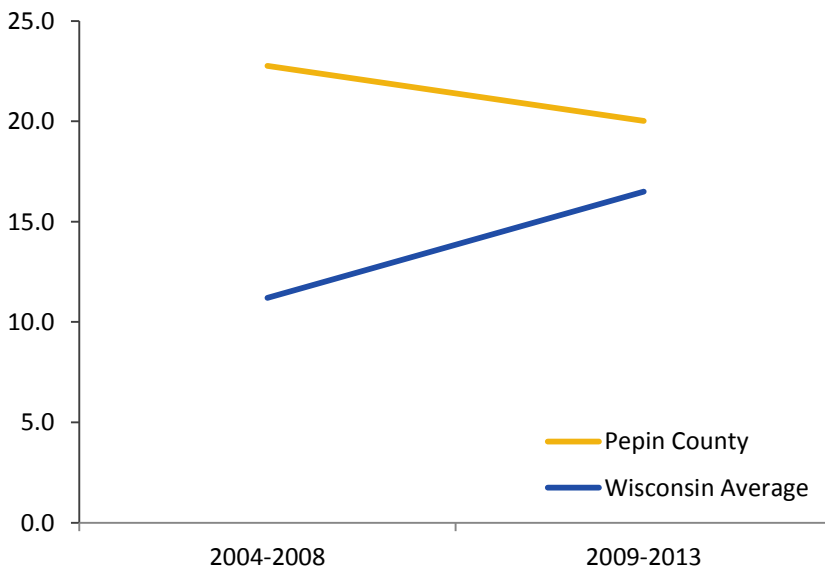
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



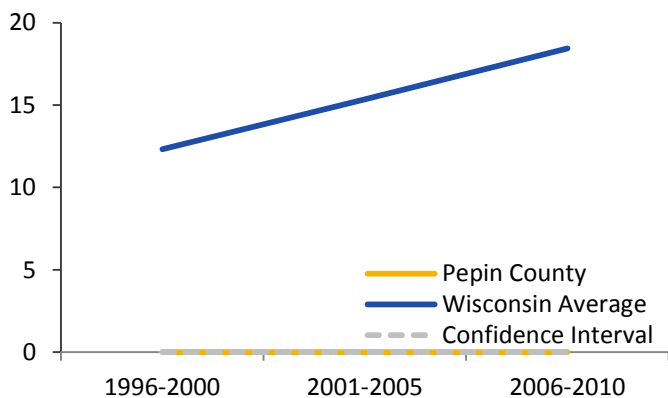


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



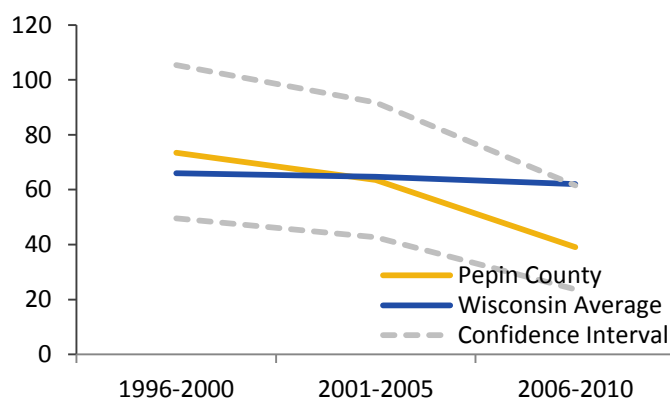
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



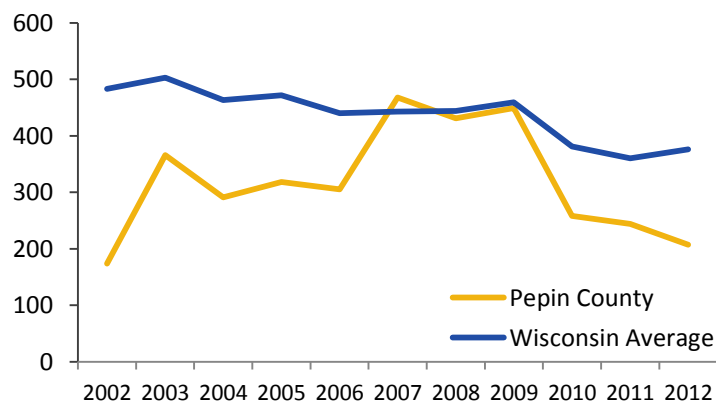
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



PIERCE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

PIERCE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 2.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.1% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 13.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 11.8 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 34.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 293.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY PIERCE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

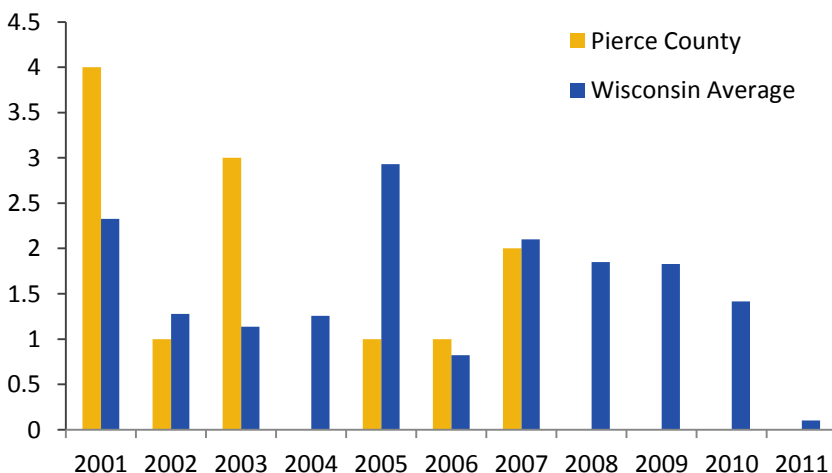
● 9.8

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

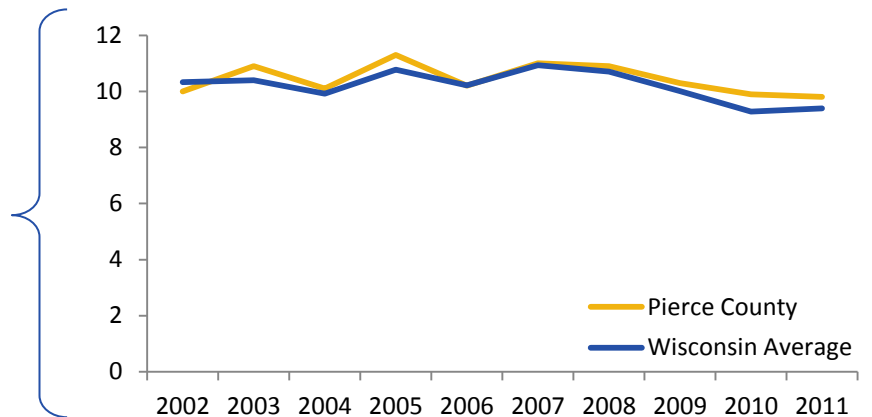
PIERCE COUNTY

PARTICULATE MATTER 2.5

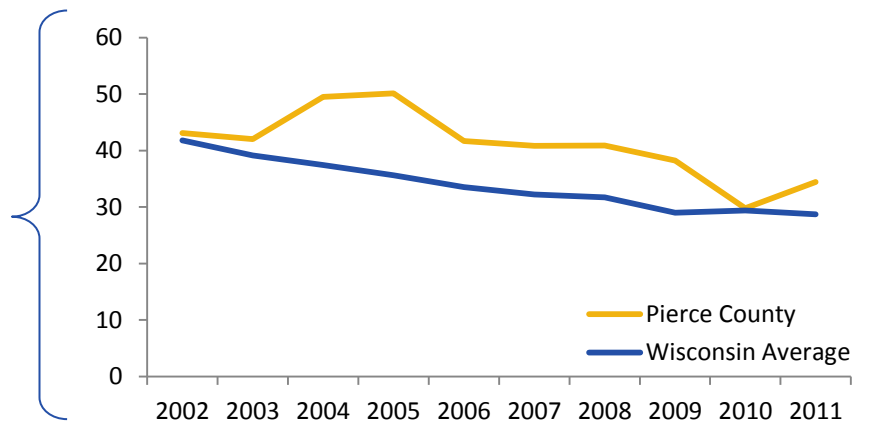
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

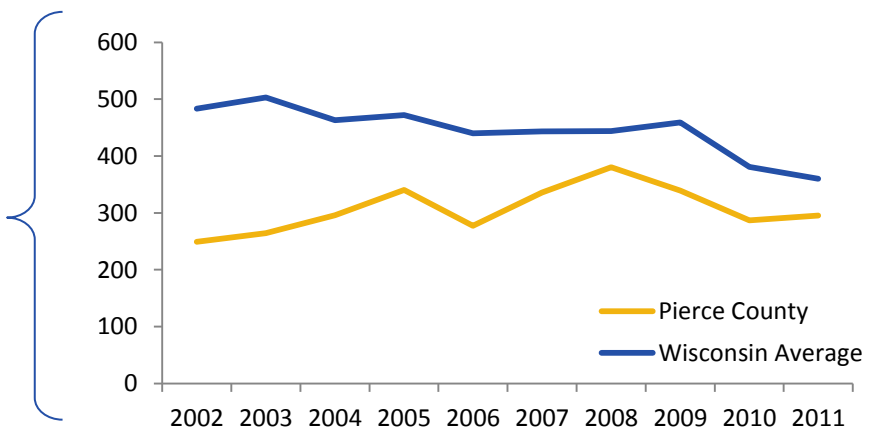
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



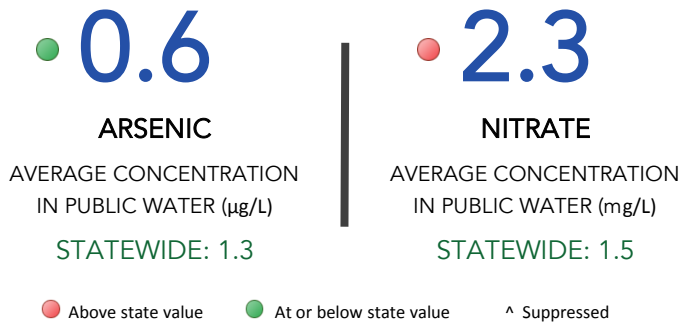
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY PIERCE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

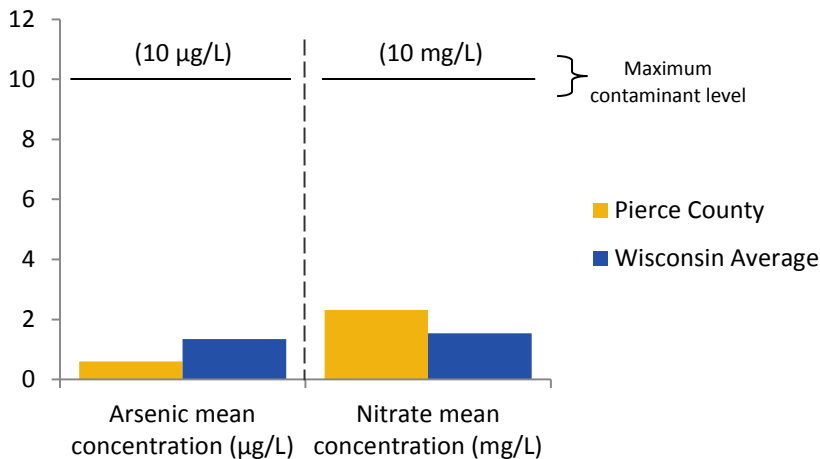
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY PIERCE COUNTY

PRIVATE DRINKING WATER

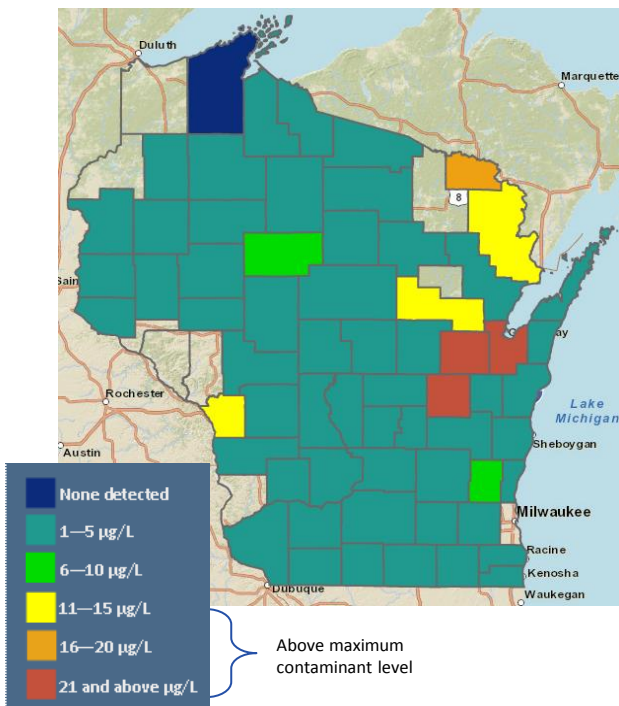
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

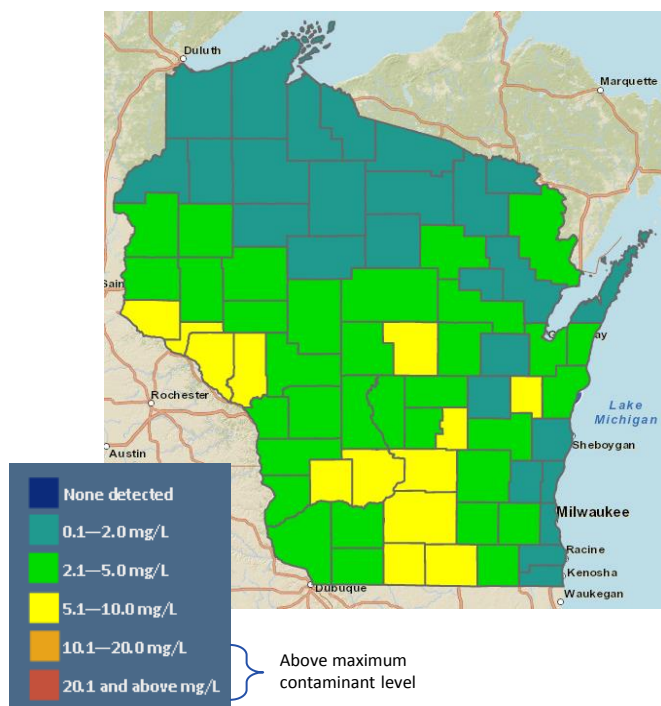
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS PIERCE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **2.6**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2
 ● Above state value ● At or below state value ^ Suppressed

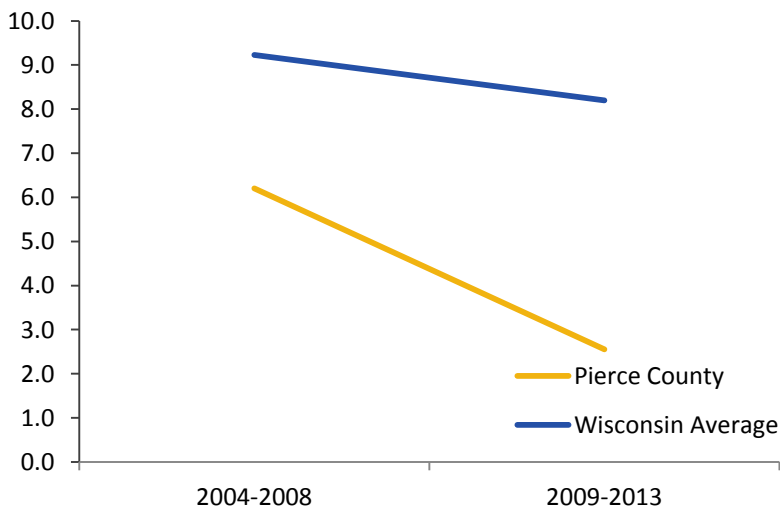
● **2.1%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

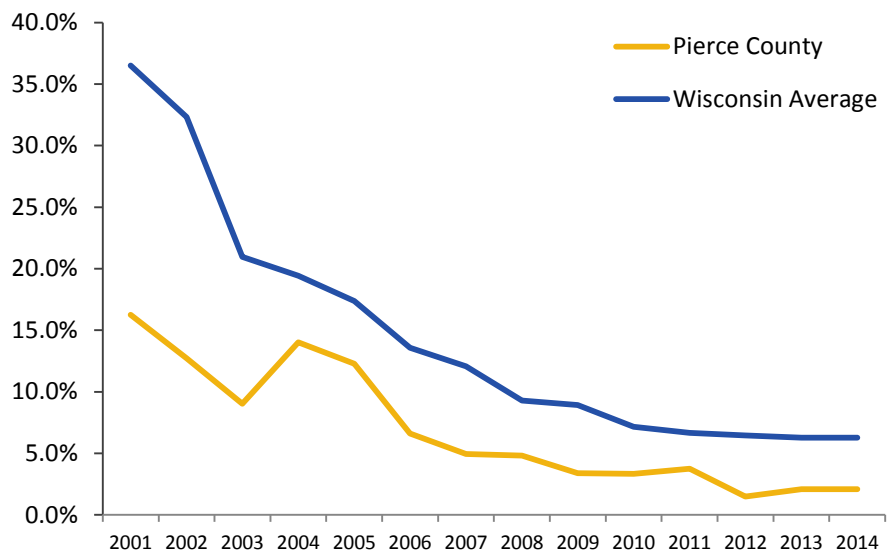
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

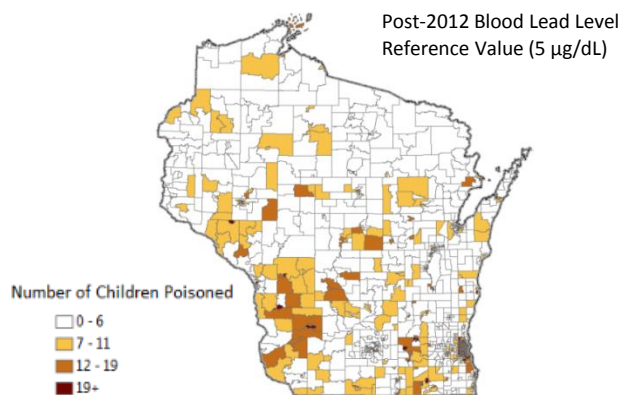
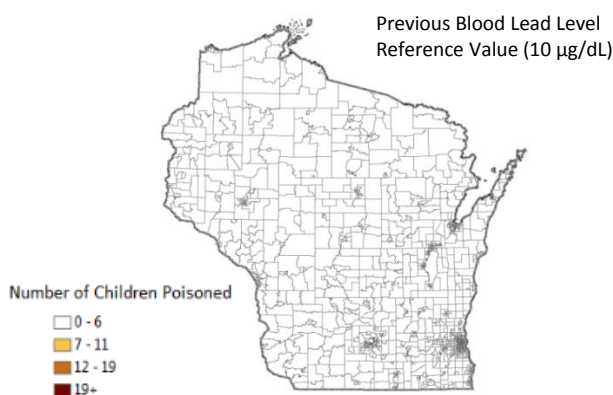
CHILDHOOD LEAD POISONING

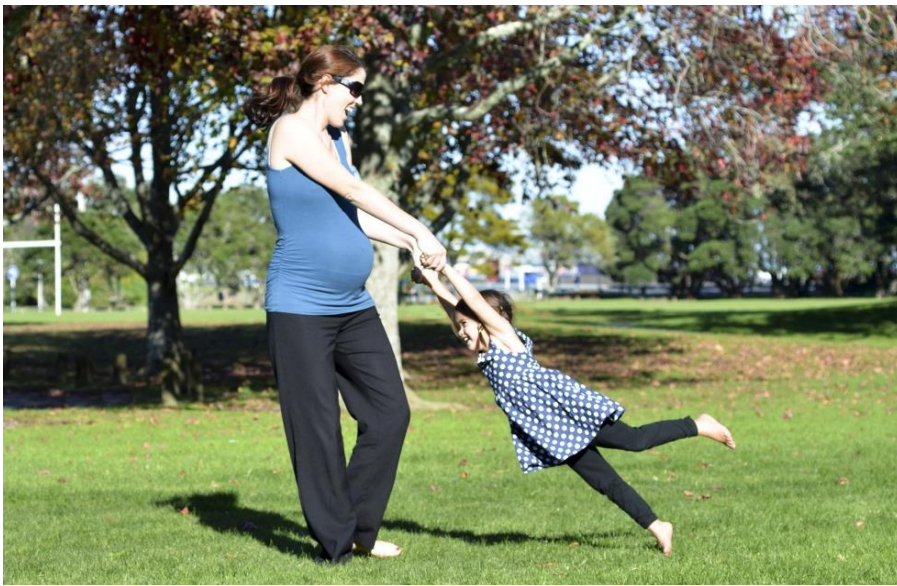
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES PIERCE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **5.2%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.7%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

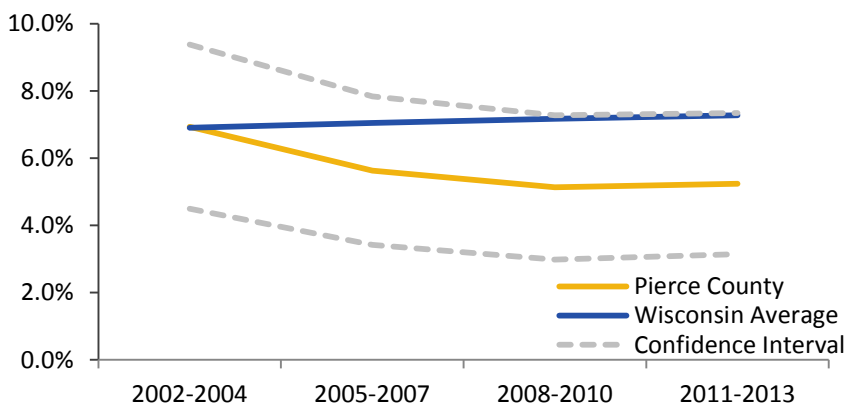
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

PIERCE COUNTY

PRETERM BIRTH

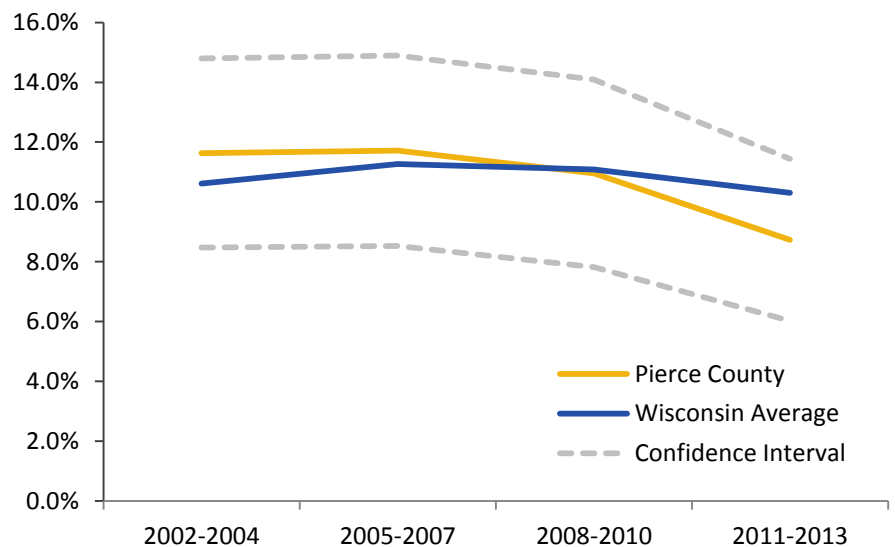
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS PIERCE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **13.8**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

● **11.8**
MELANOMA
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 18.4

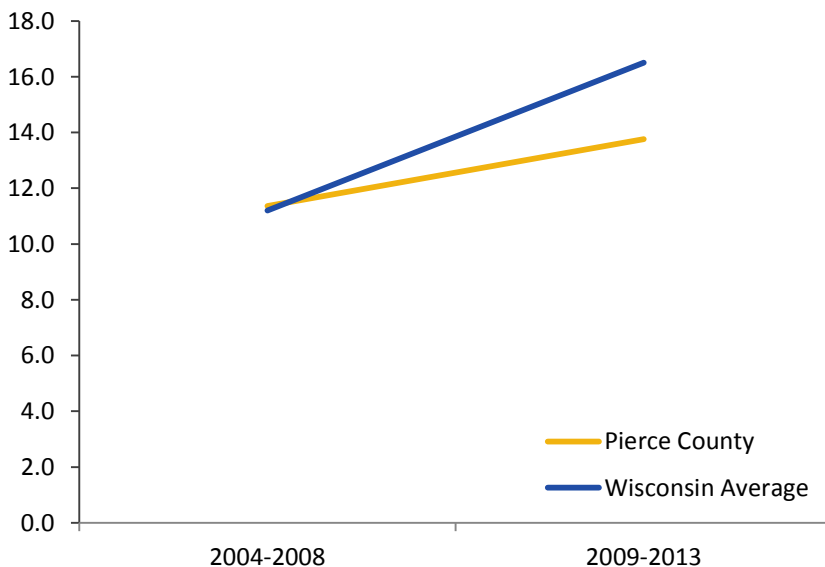
● **34.7**
LUNG CANCER
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 62

● **293.0**
ASTHMA
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht

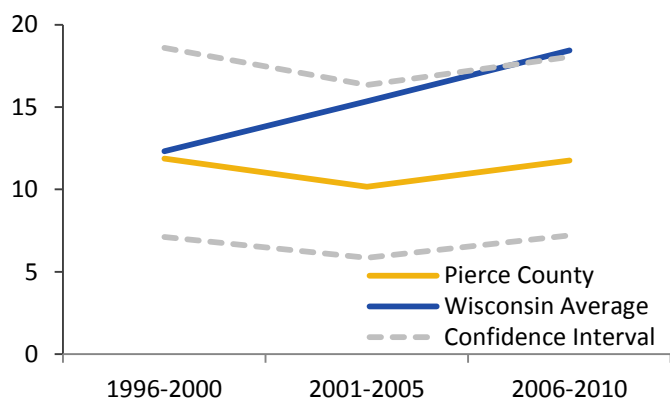


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



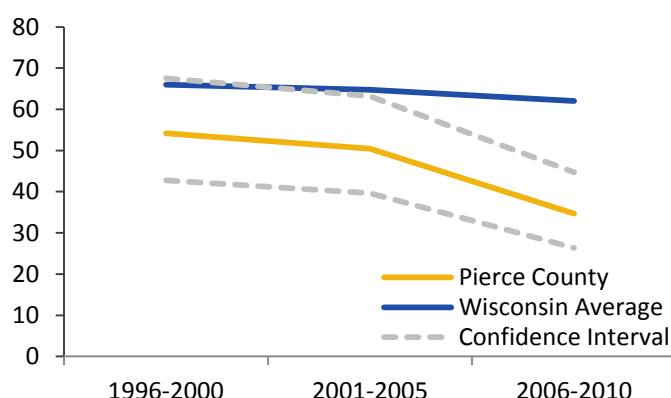
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



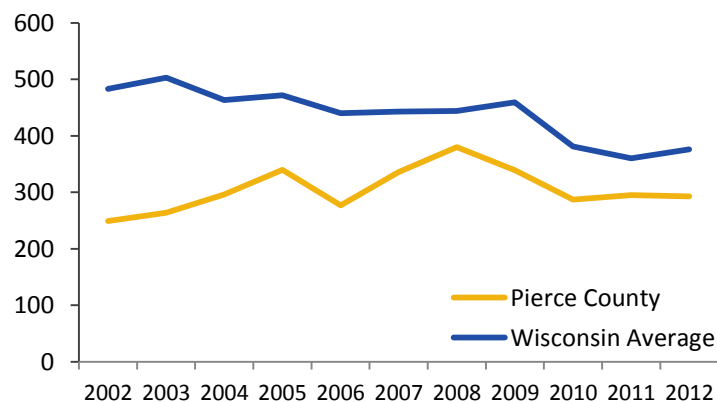
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



POLK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

POLK COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.0 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 11.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.2% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 4.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.2% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 22.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 9.4 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 41.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 332.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY POLK COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

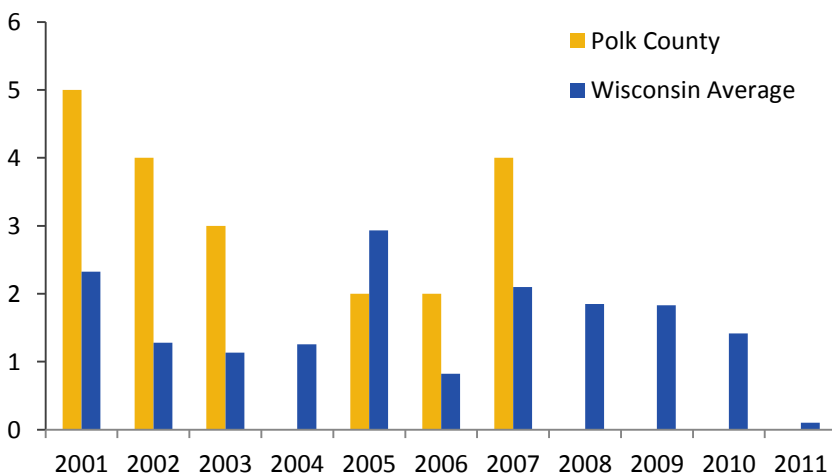
● 9.1

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

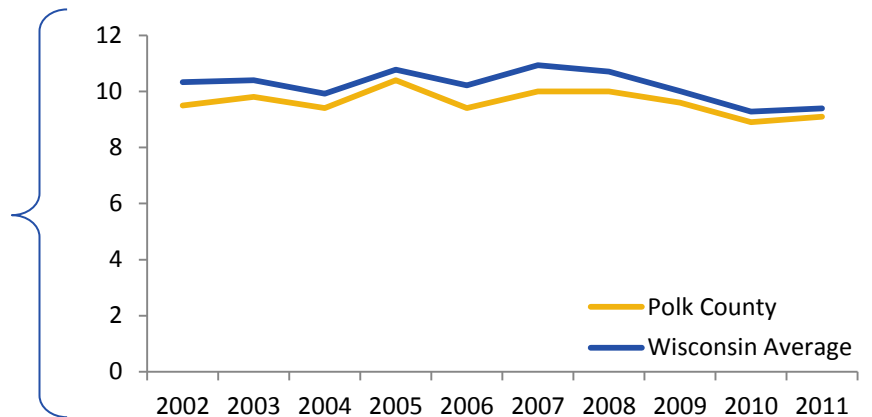
POLK COUNTY

PARTICULATE MATTER 2.5

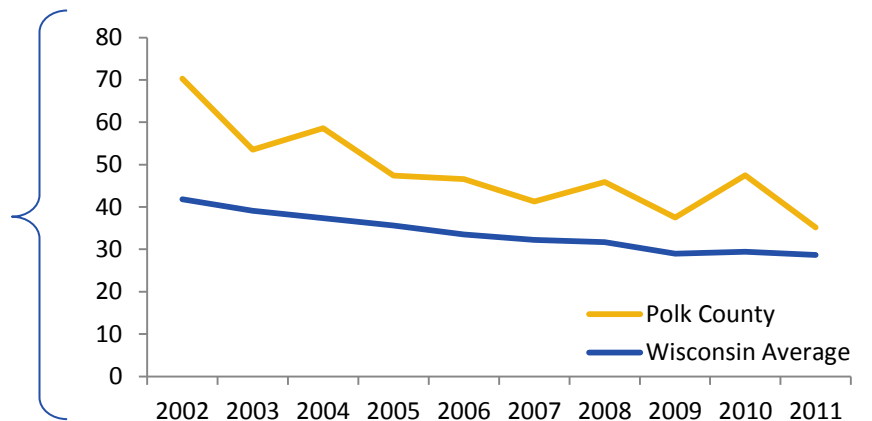
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

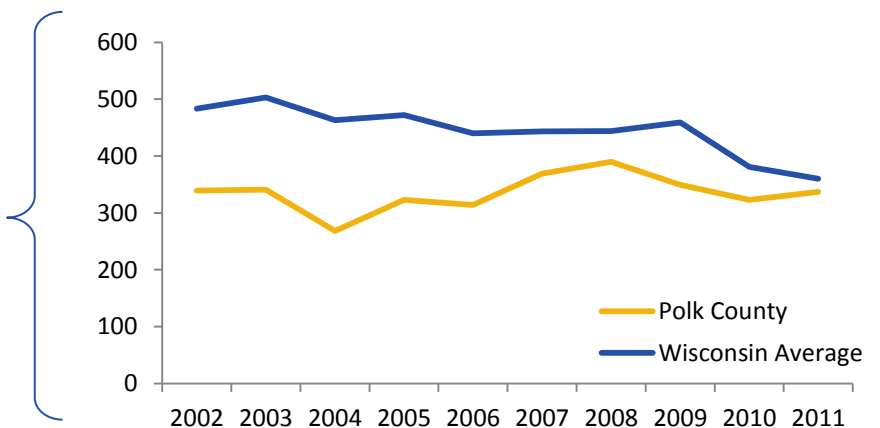
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



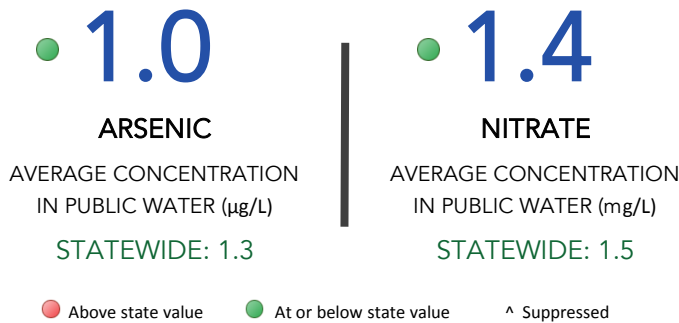
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY POLK COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

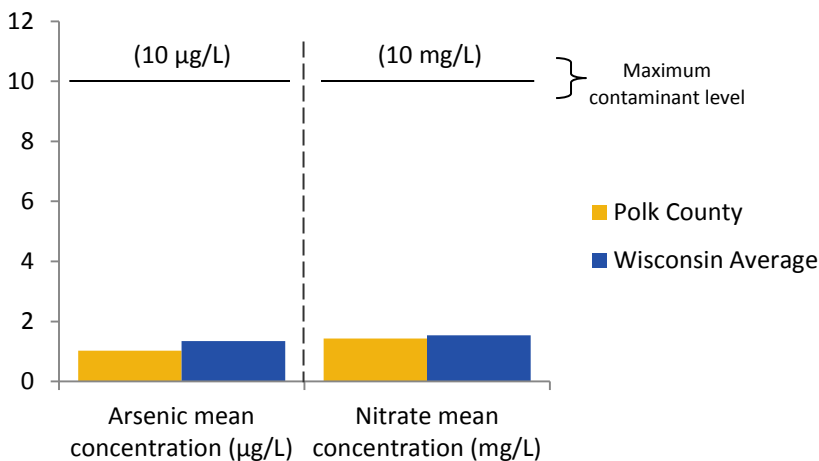
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY POLK COUNTY

PRIVATE DRINKING WATER

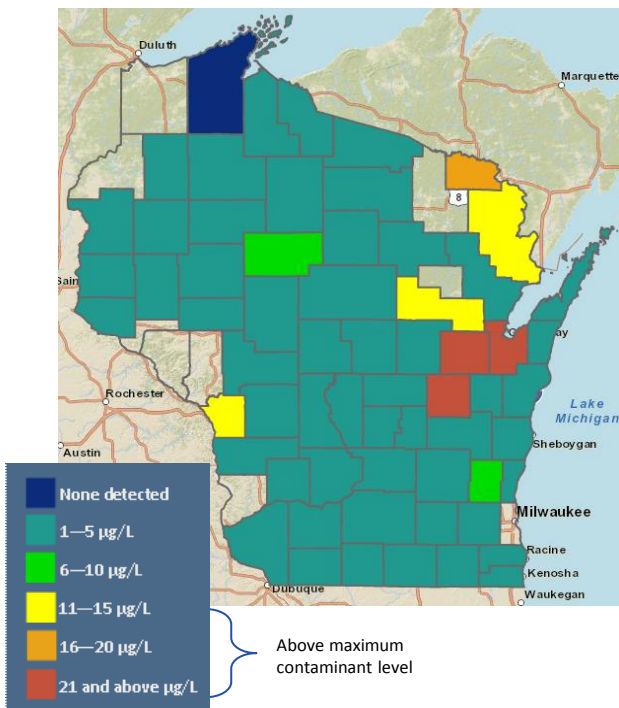
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

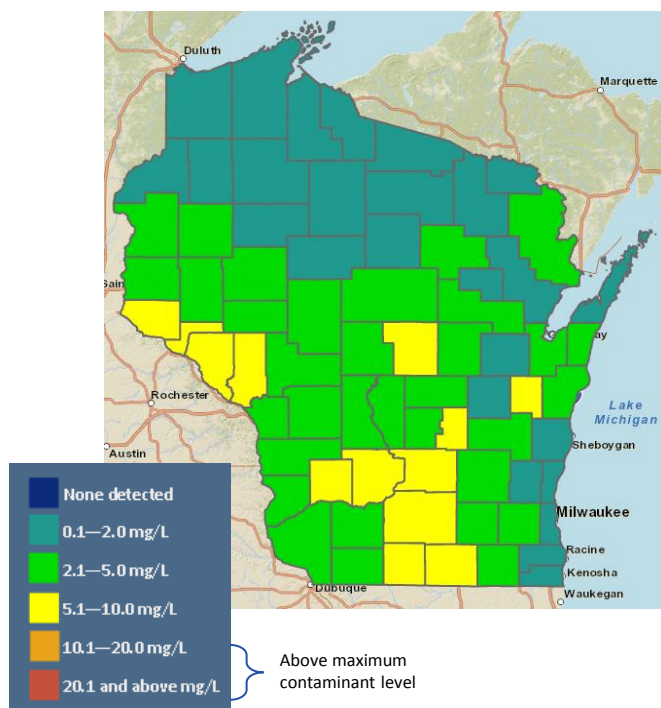
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

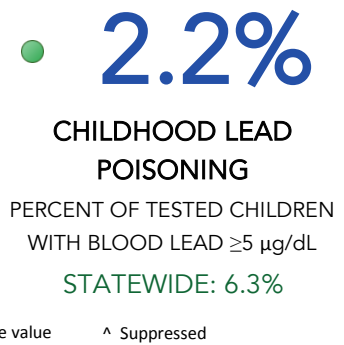
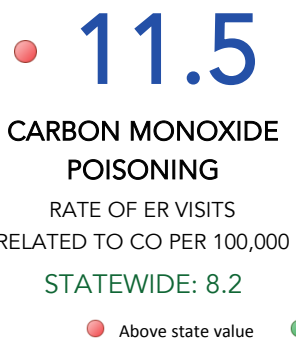


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS POLK COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

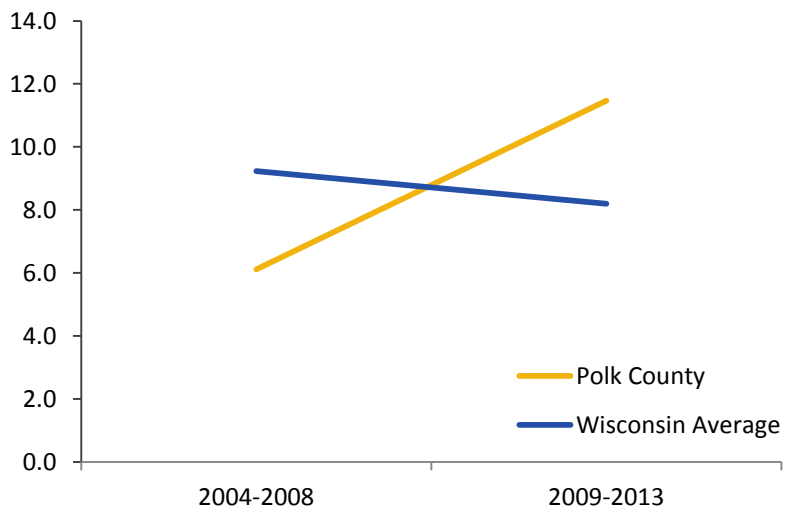


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

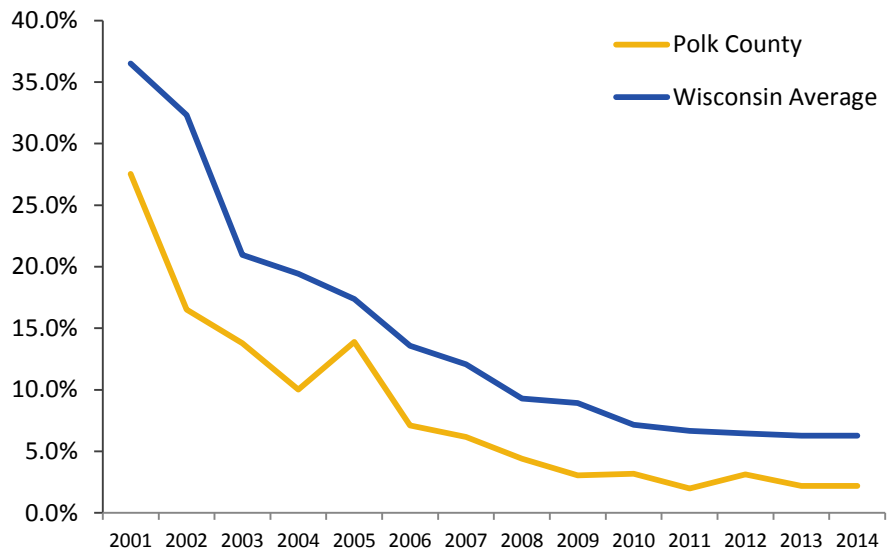
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

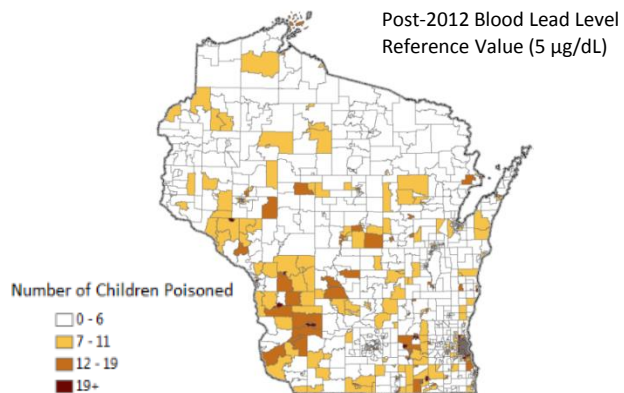
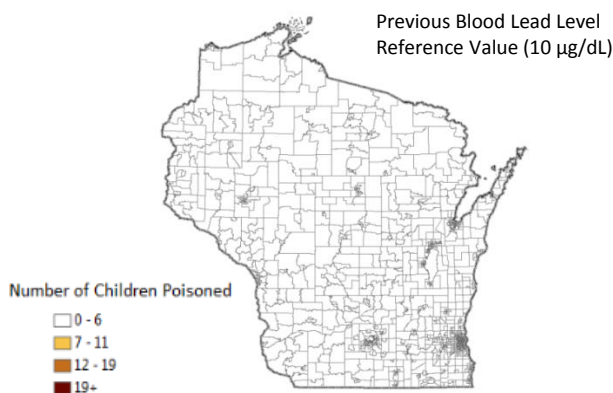
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES POLK COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **4.9%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.2%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

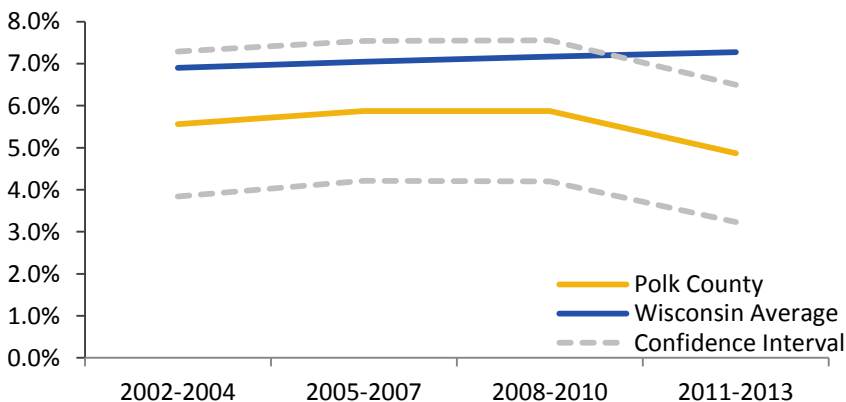
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES POLK COUNTY

PRETERM BIRTH

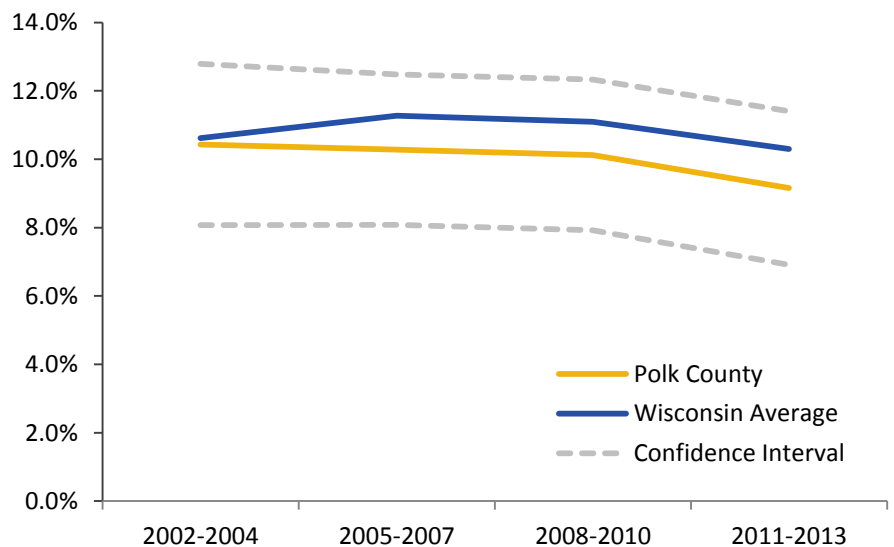
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS POLK COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **22.2**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **9.4**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **41.0**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

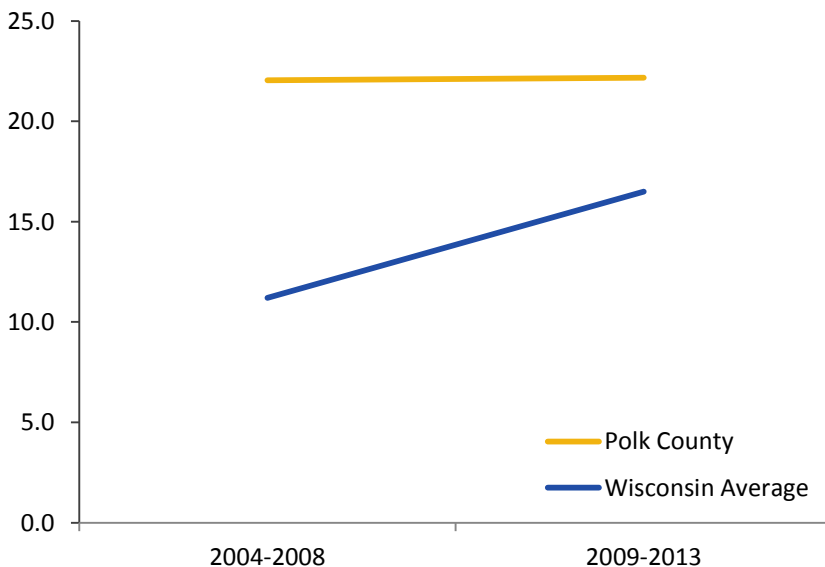
● **332.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



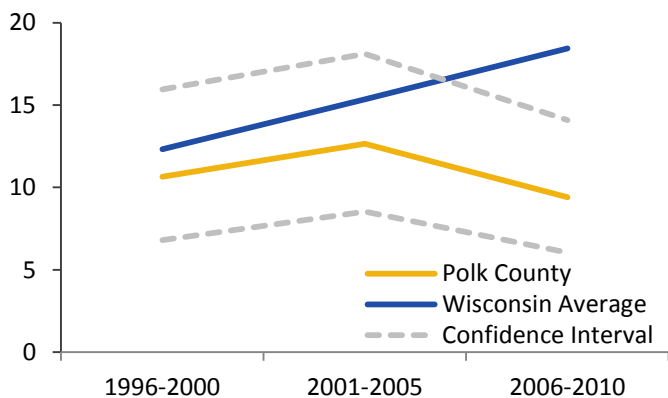


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



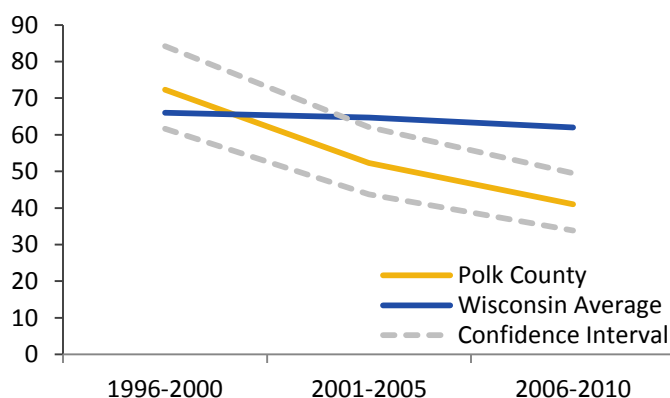
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



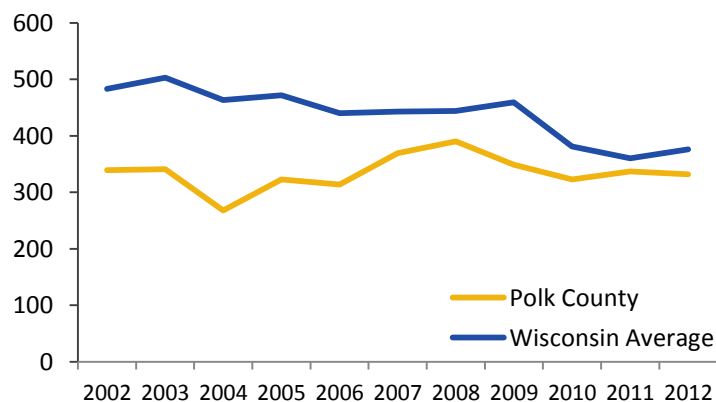
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



PORTAGE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

PORTAGE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 4.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.3% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.0% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 20.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 21.7 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 59.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 237.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY PORTAGE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

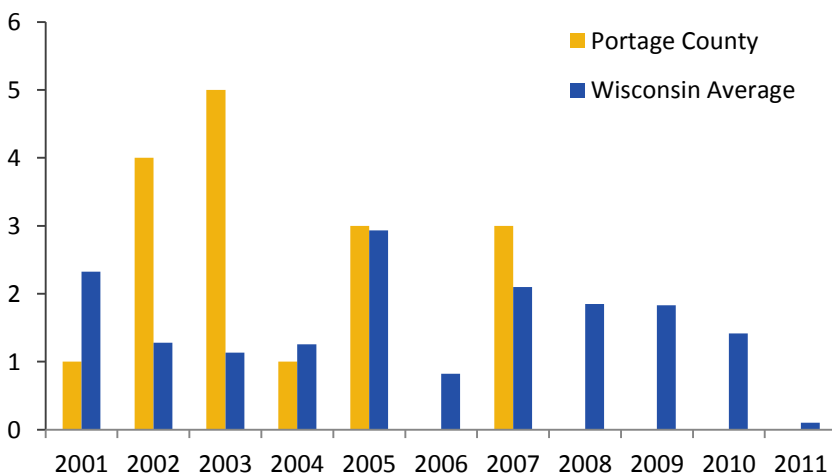
● 9.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

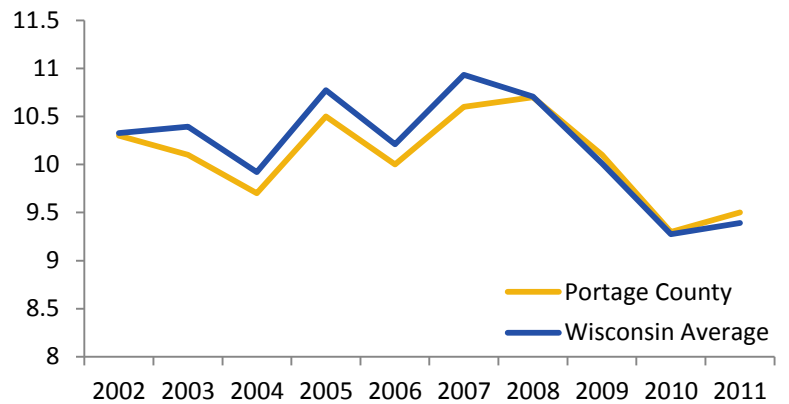
PORTAGE COUNTY

PARTICULATE MATTER 2.5

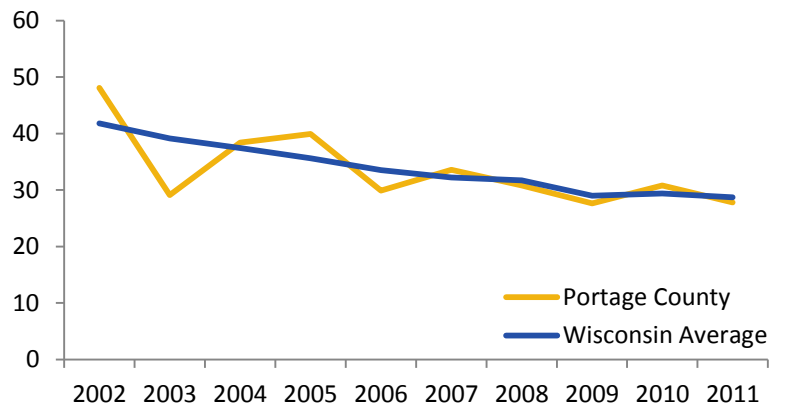
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

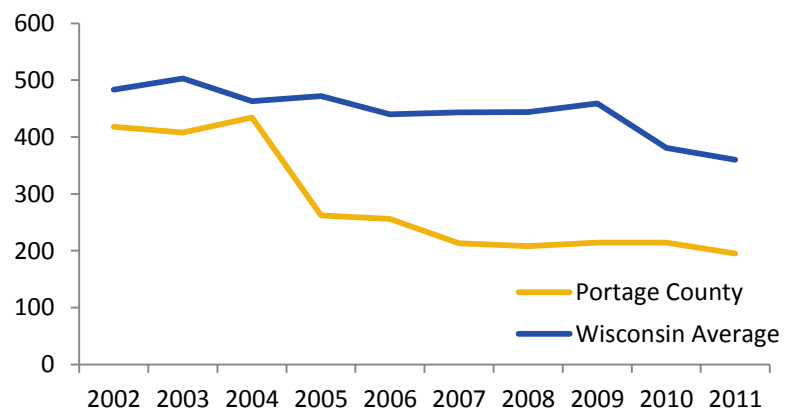
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



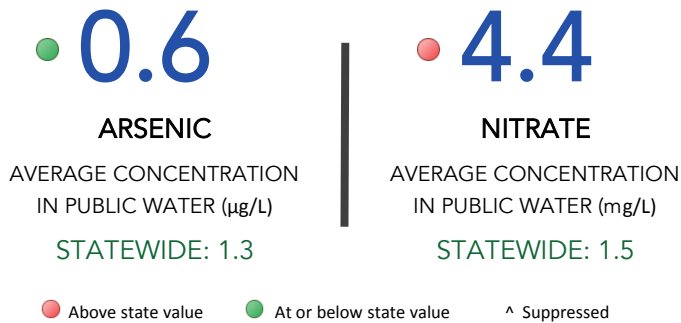
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY PORTAGE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

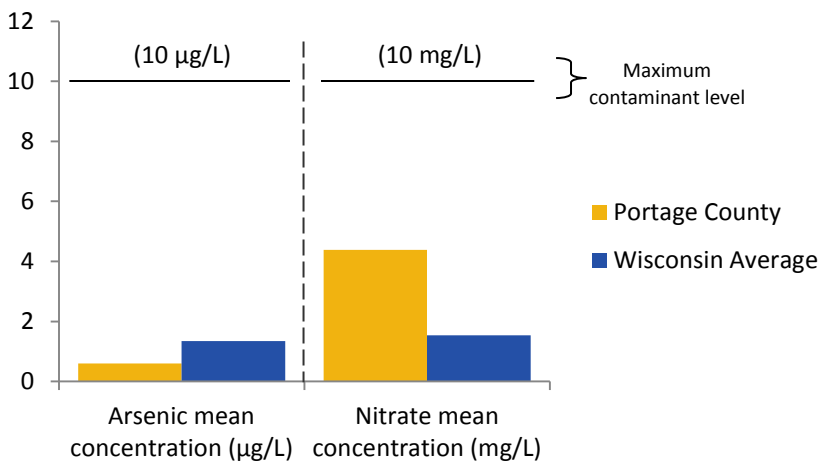
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY PORTAGE COUNTY

PRIVATE DRINKING WATER

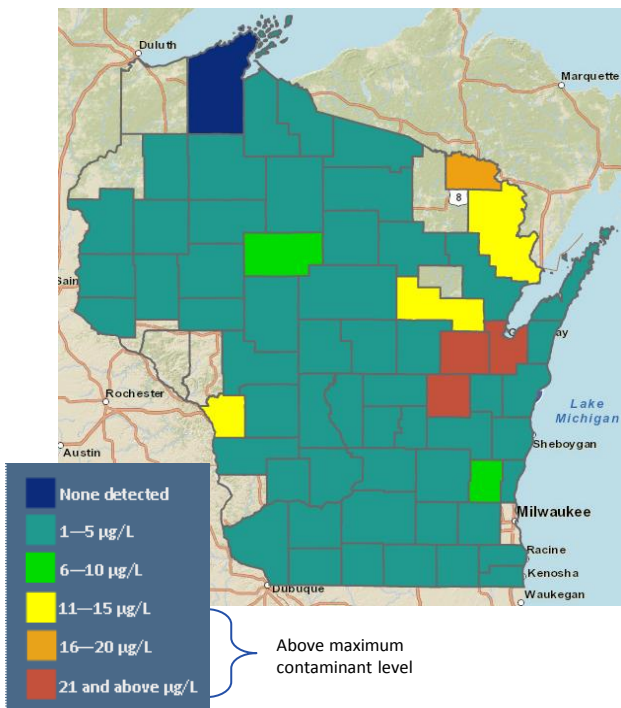
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

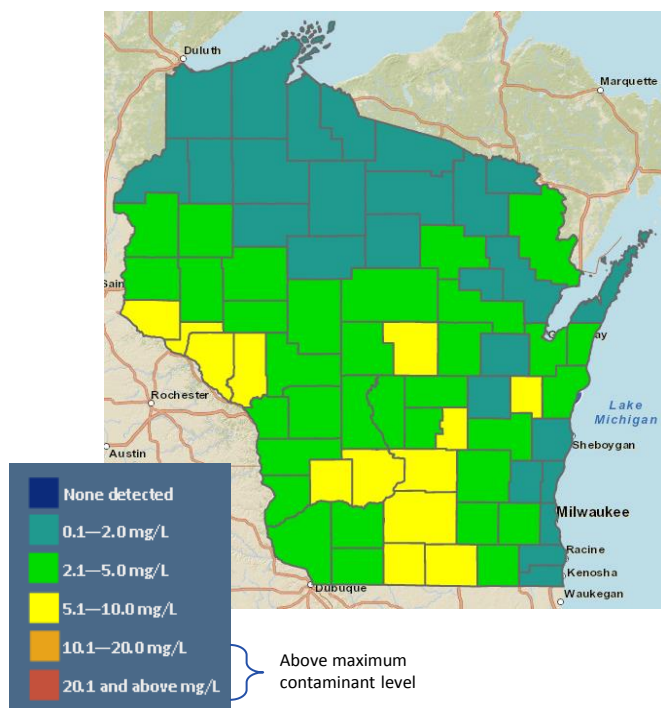
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS PORTAGE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.4**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **1.3%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

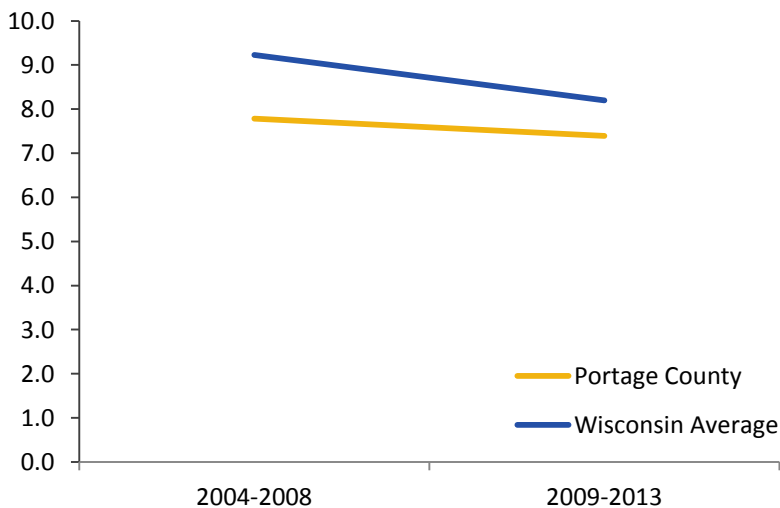
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

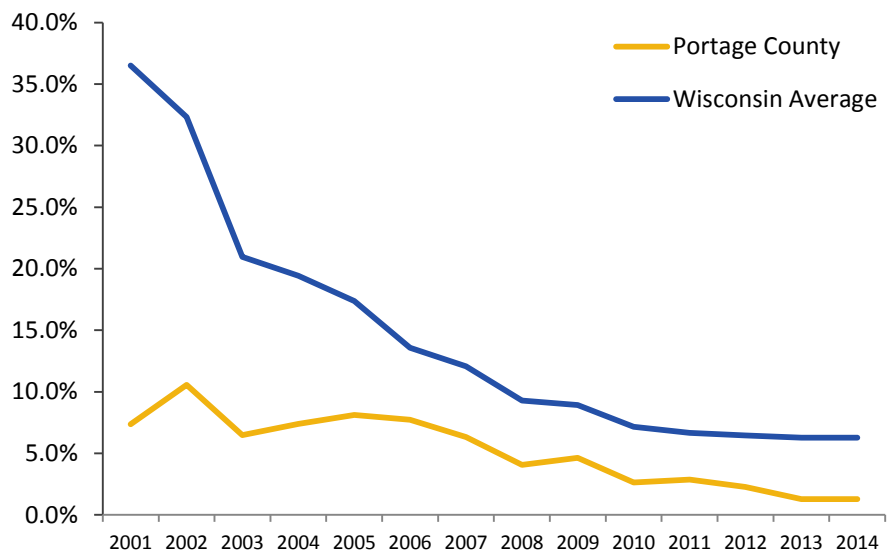
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

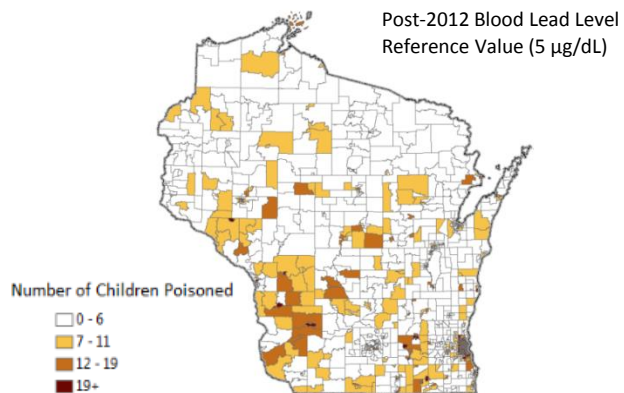
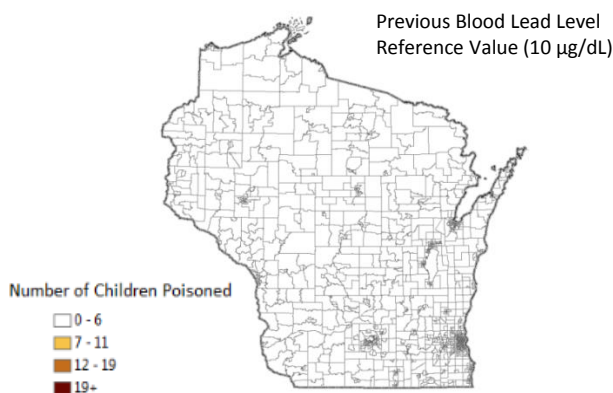
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES PORTAGE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.0%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.3%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

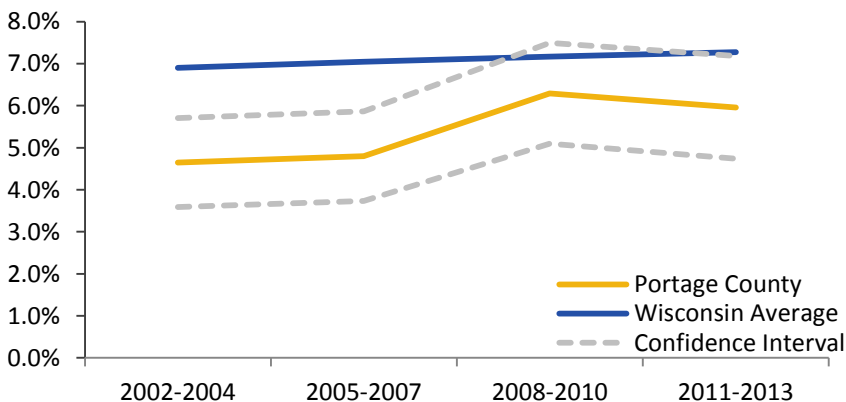
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

PORTAGE COUNTY

PRETERM BIRTH

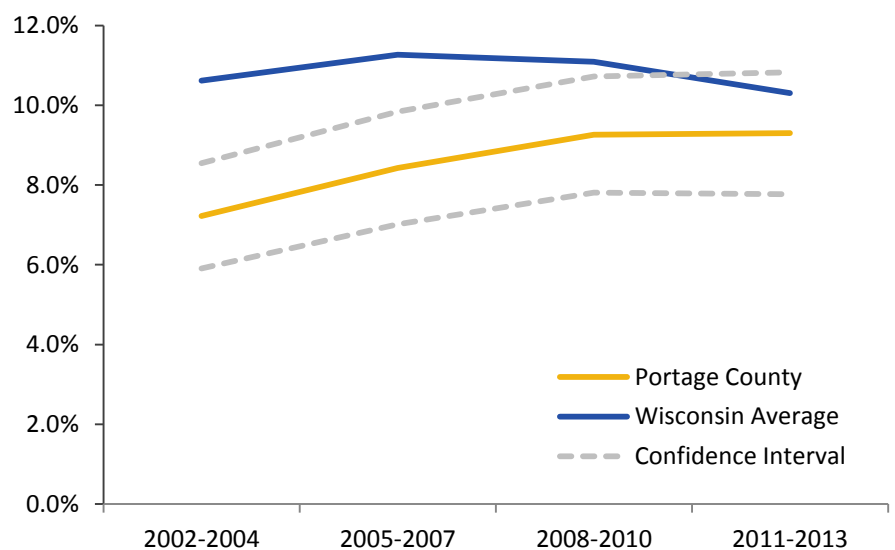
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

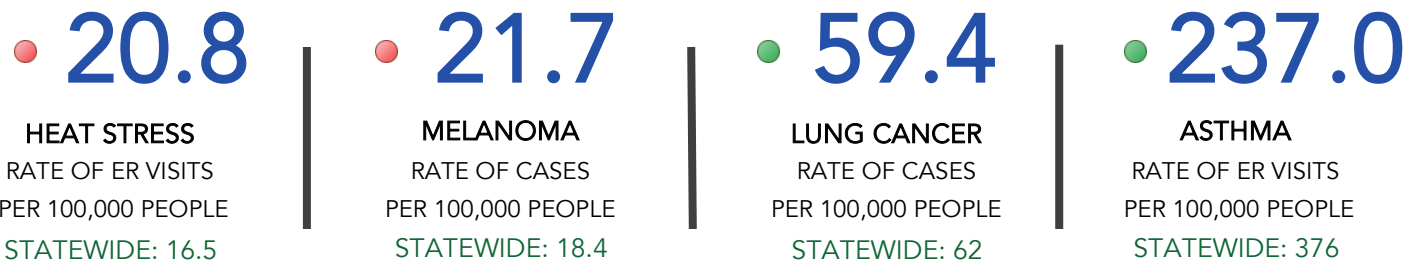
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS PORTAGE COUNTY

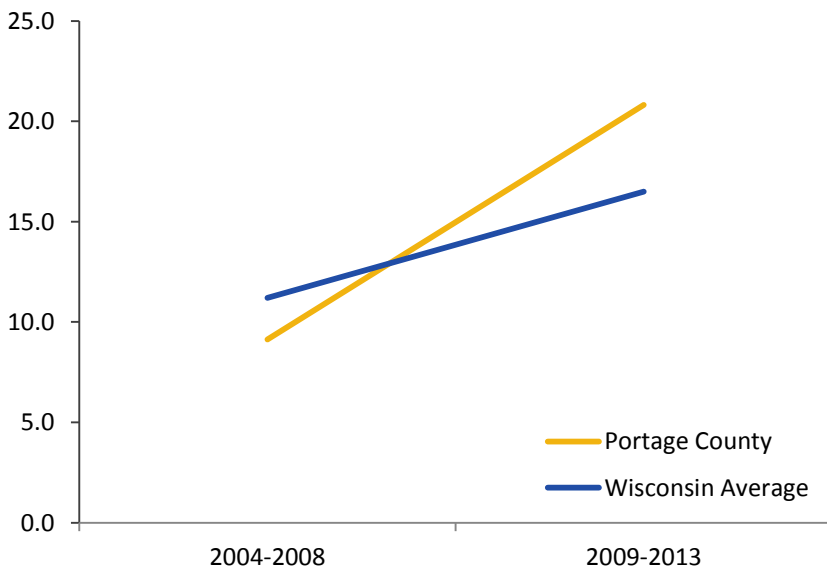
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



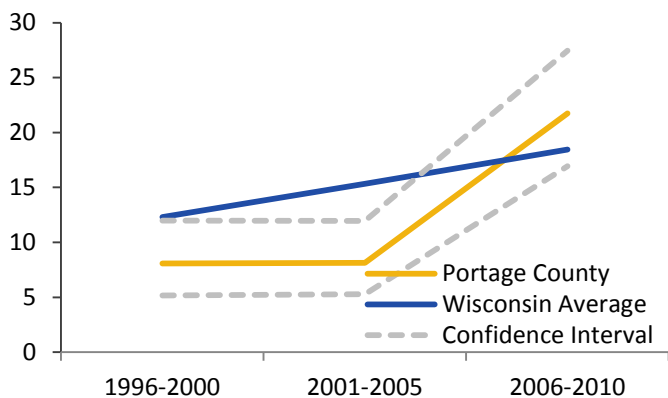


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



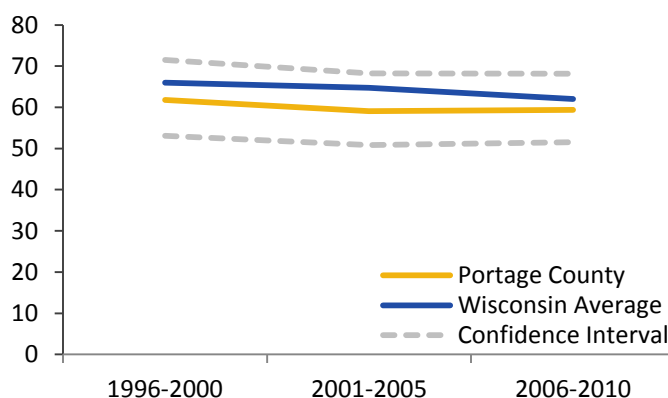
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



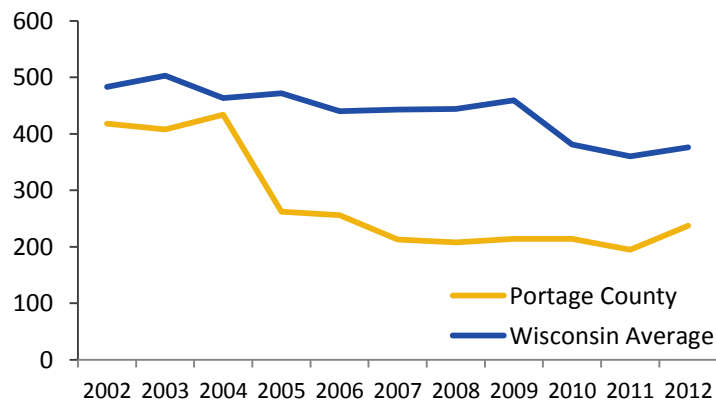
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

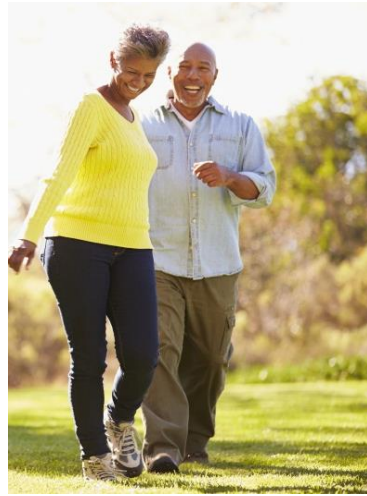
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



PRICE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

PRICE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.7 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.0% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 4.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 6.2% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 14.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 10.4 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 69.9 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 375.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY PRICE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

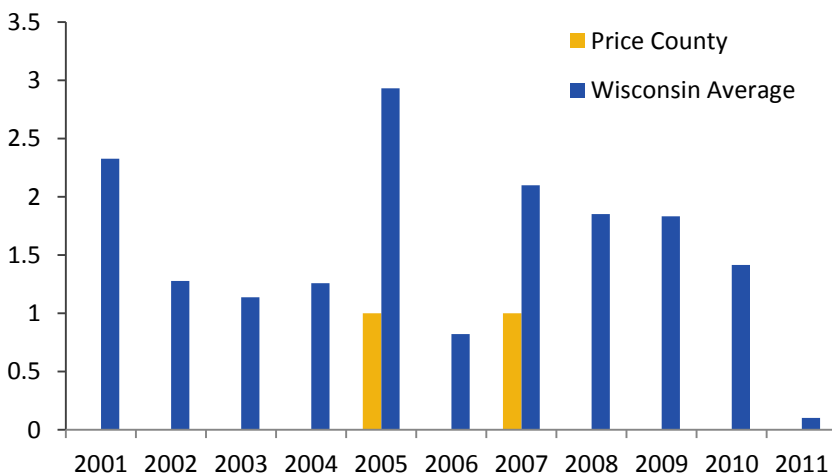
● 7.6

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

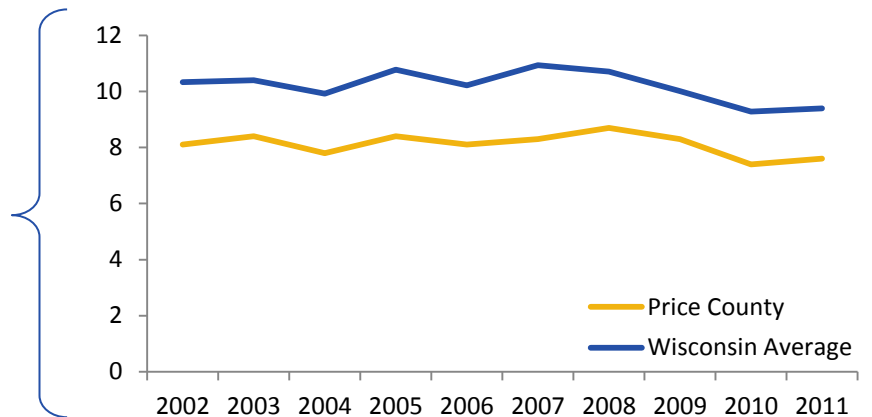
PRICE COUNTY

PARTICULATE MATTER 2.5

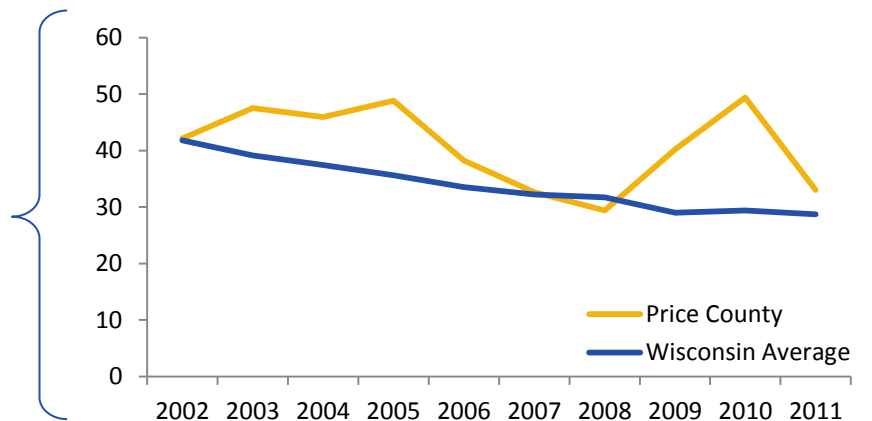
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

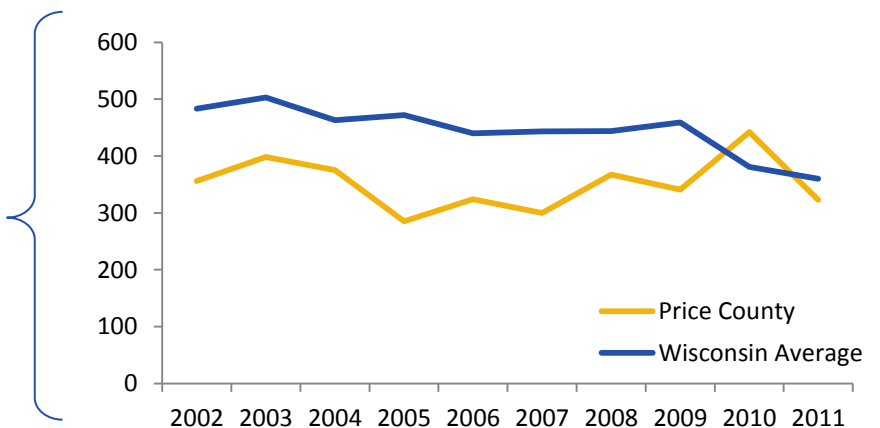
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



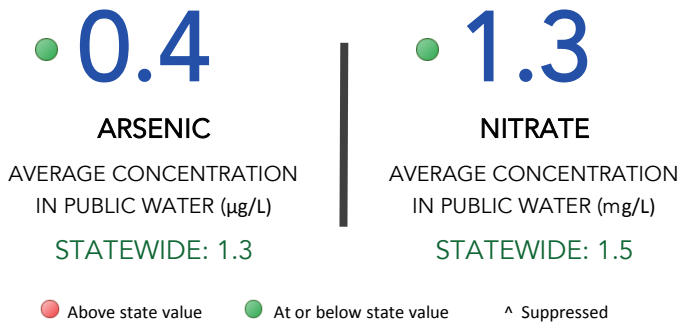
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY PRICE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

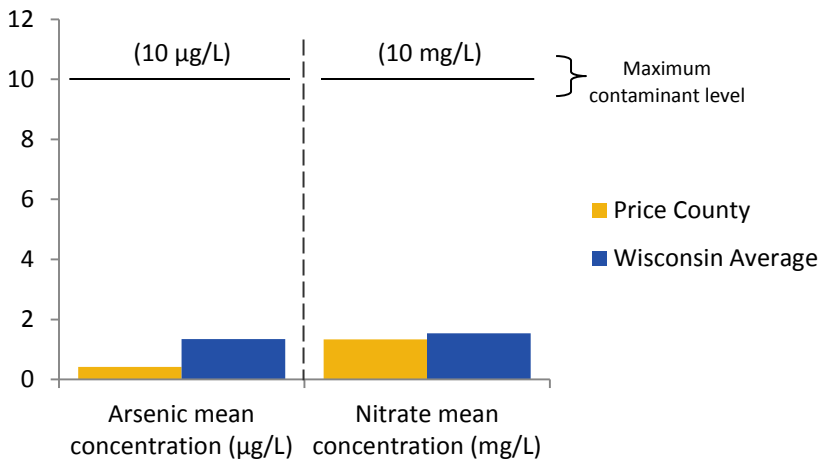
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY PRICE COUNTY

PRIVATE DRINKING WATER

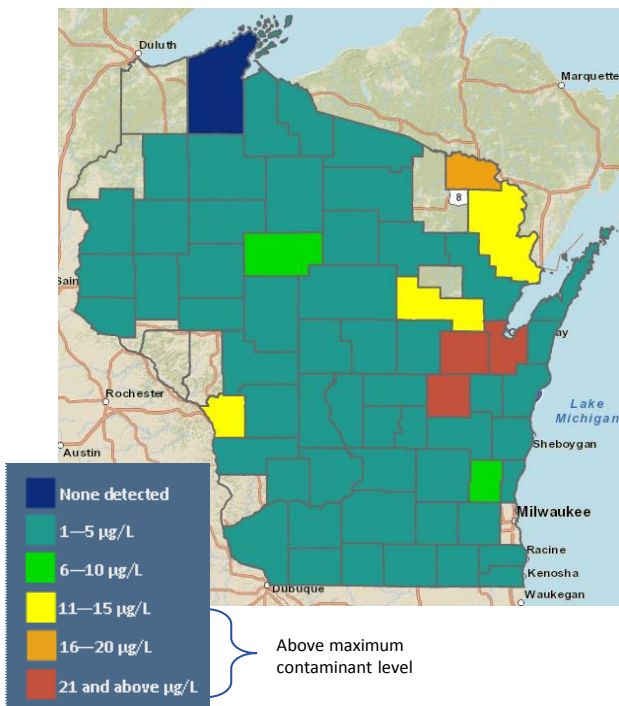
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

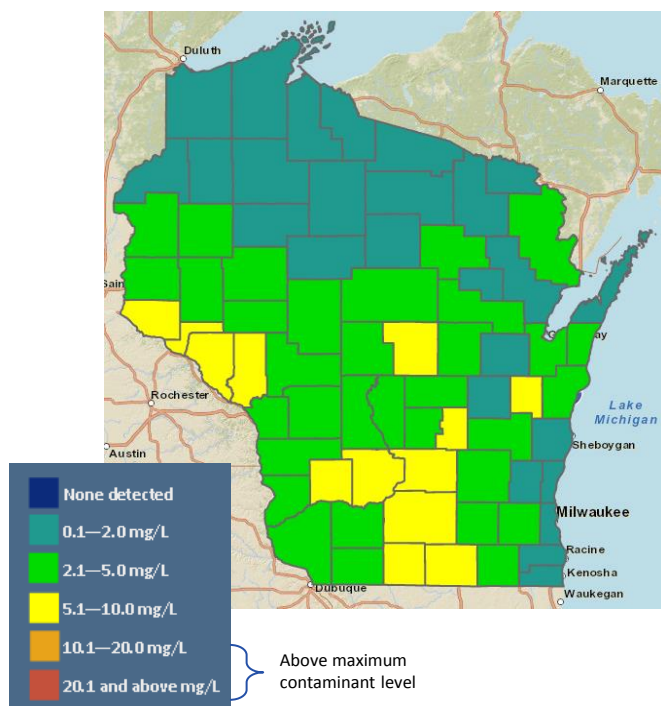
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS PRICE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.7**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **0.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

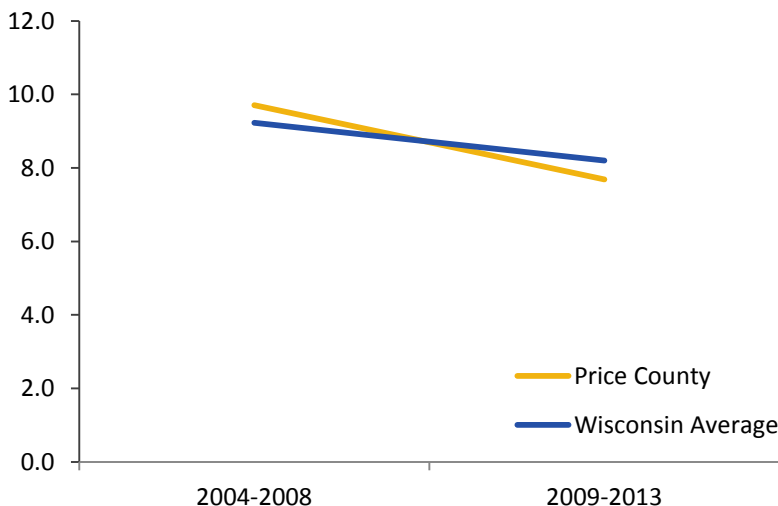
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

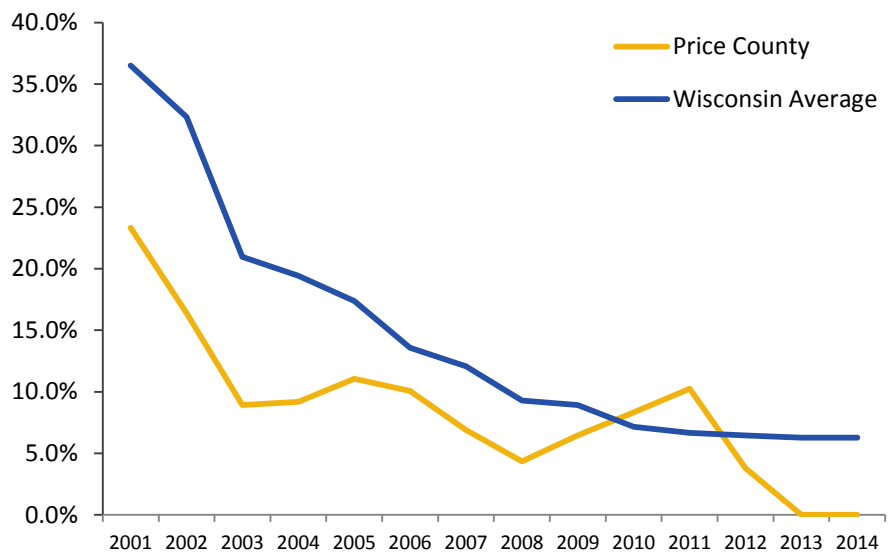
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

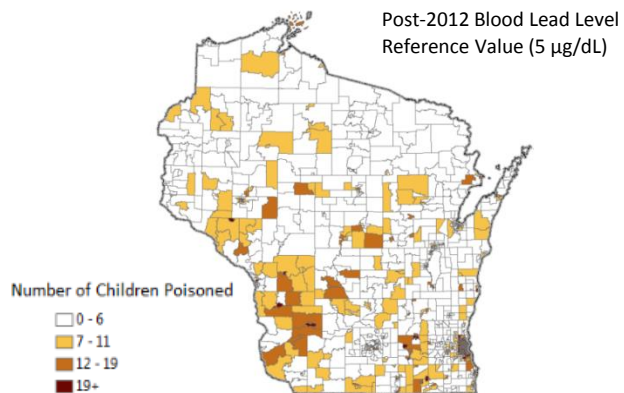
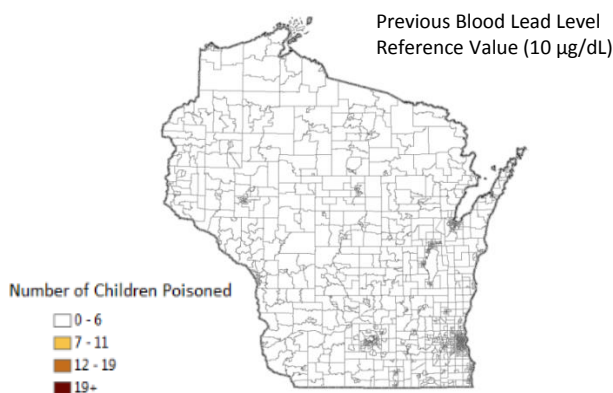
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES PRICE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **4.5%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **6.2%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

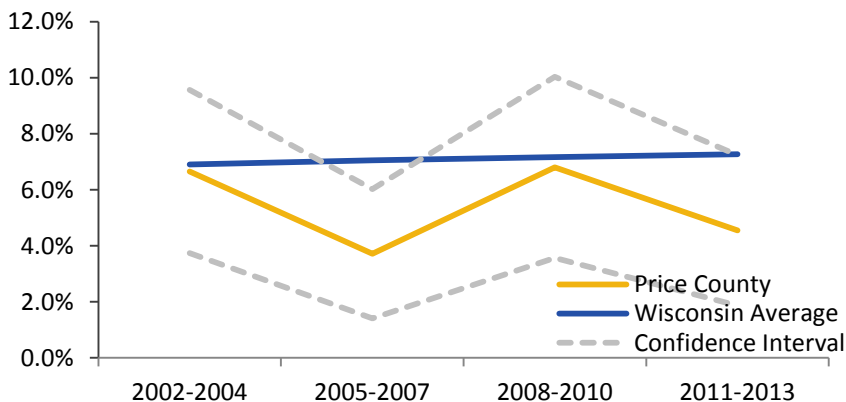
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES PRICE COUNTY

PRETERM BIRTH

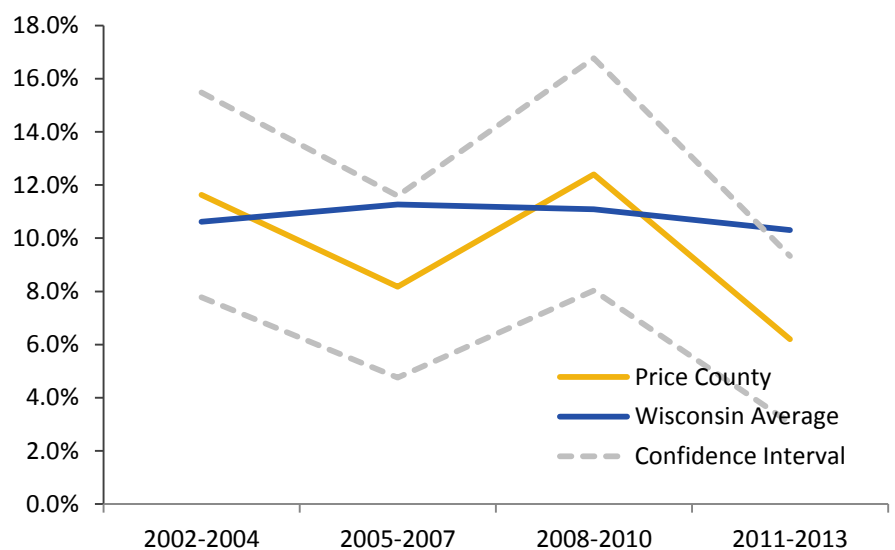
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS PRICE COUNTY

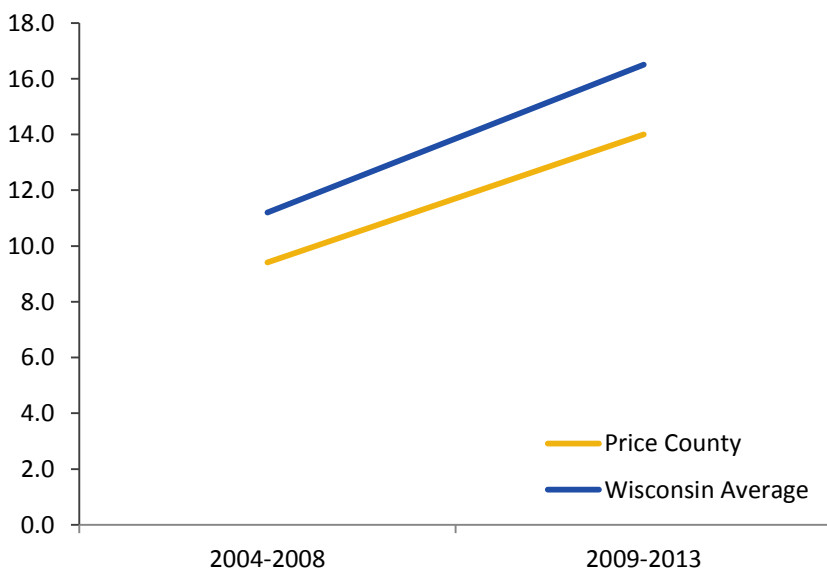
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 14.0</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 10.4</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 69.9</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 375.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



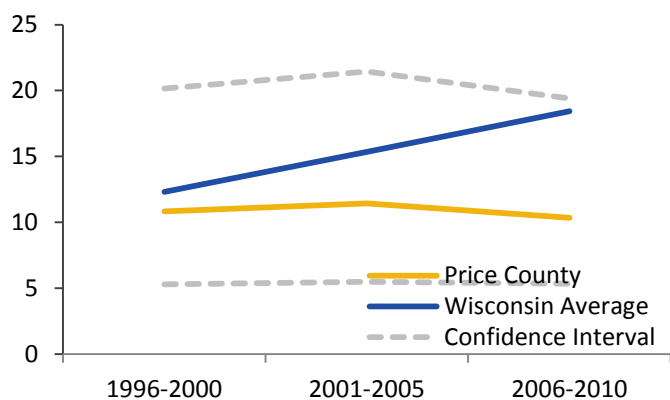


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



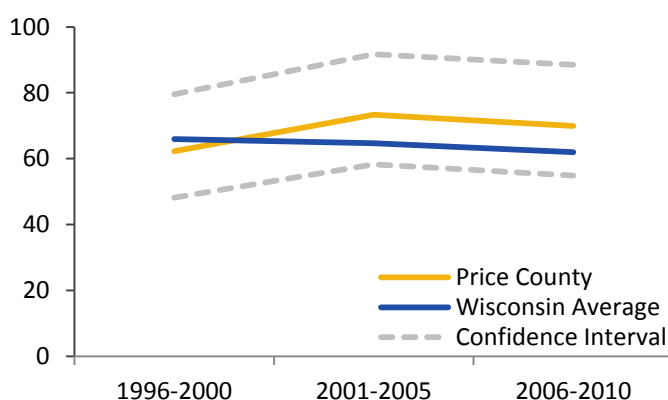
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



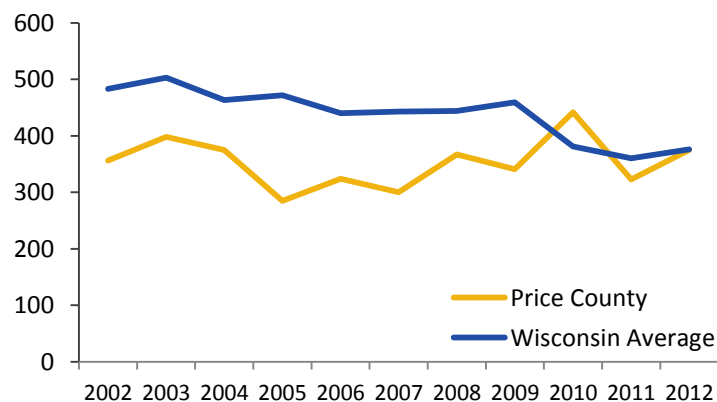
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

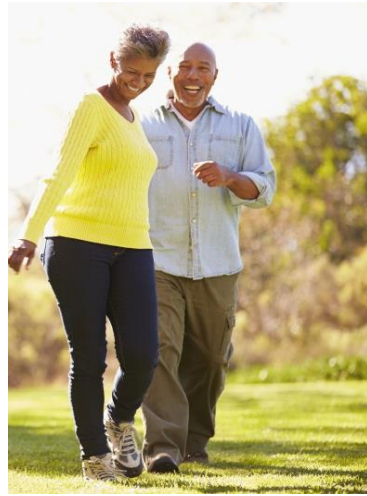
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



RACINE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

RACINE COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

4.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

1.1 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

4.2 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

0.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

9.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

7.4% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

7.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

12.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

17.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

11.7 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

71.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

451.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY RACINE COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 4.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 1.1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

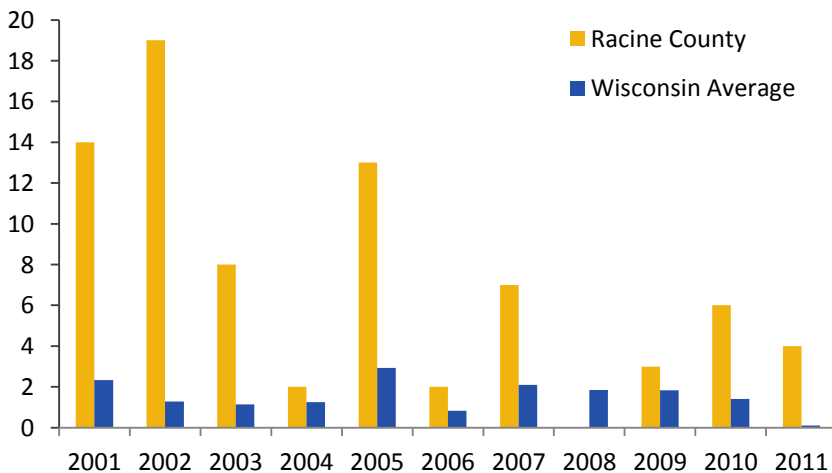
● 11.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

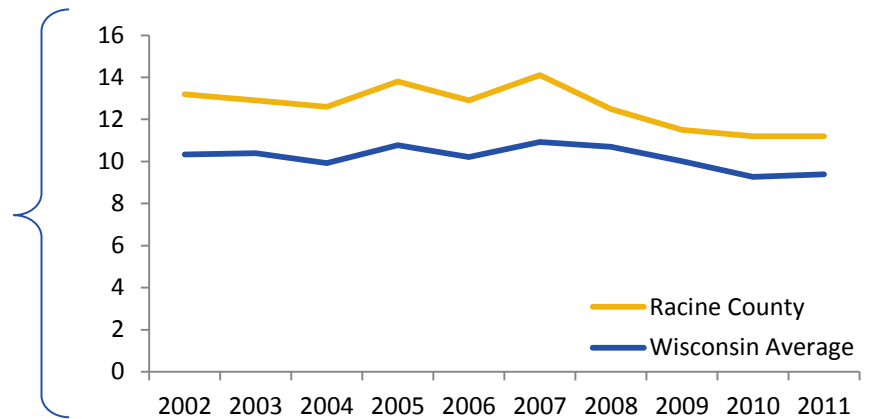
RACINE COUNTY

PARTICULATE MATTER 2.5

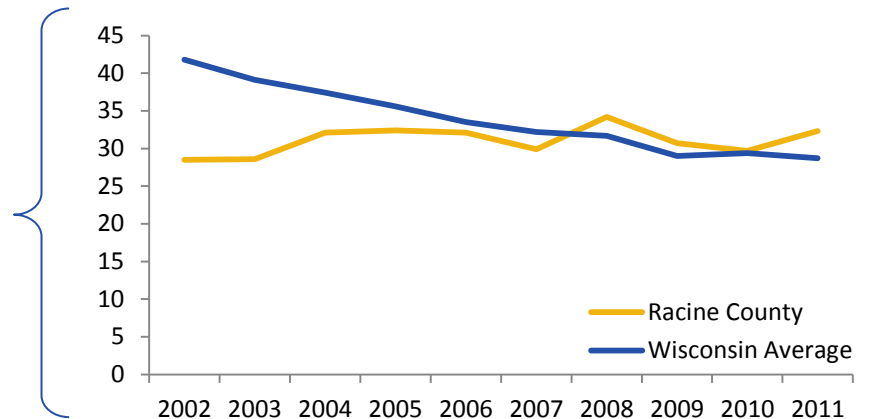
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

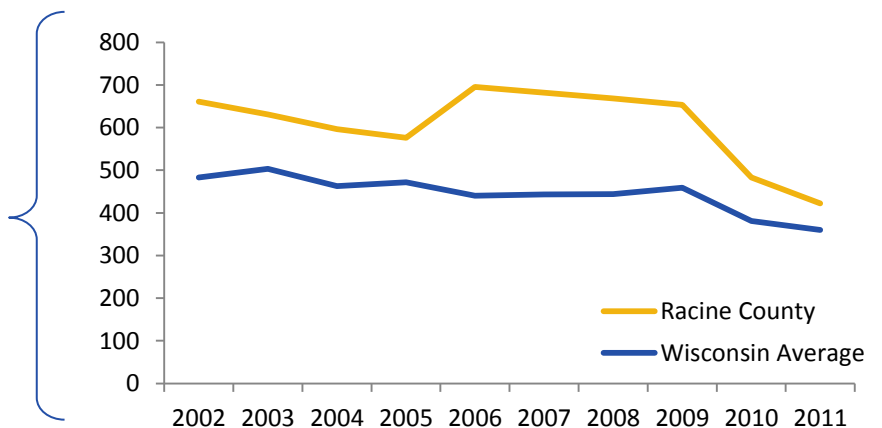
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



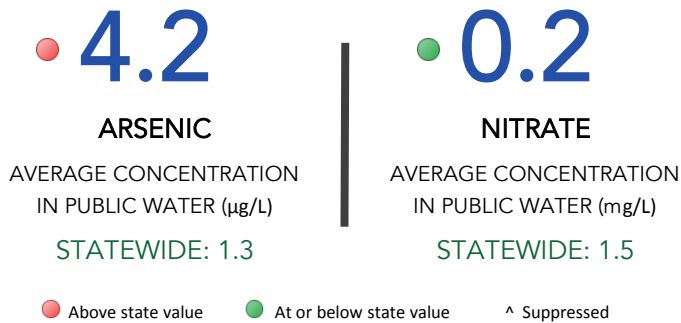
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY RACINE COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

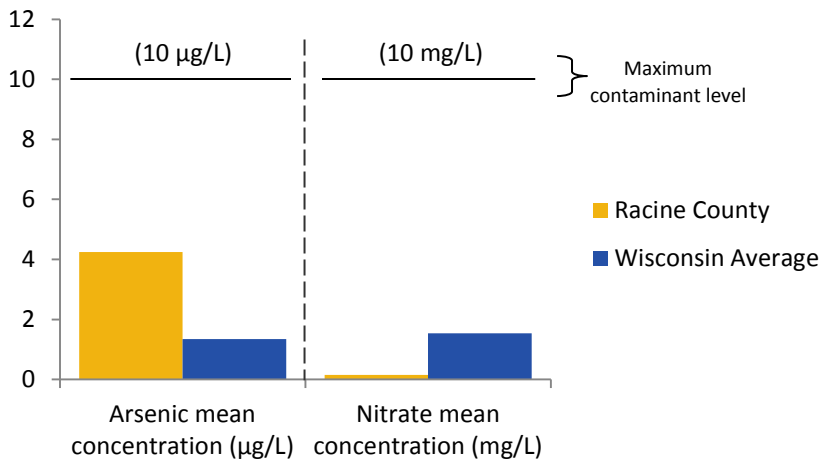
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY RACINE COUNTY

PRIVATE DRINKING WATER

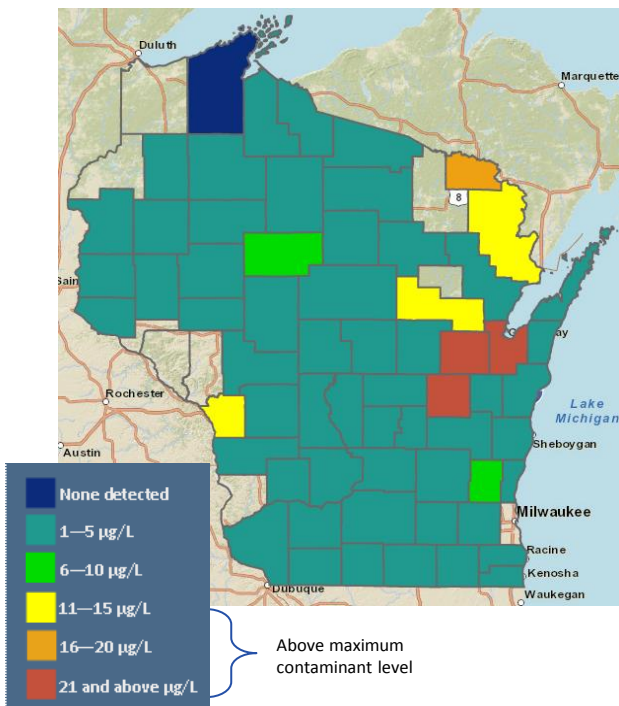
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

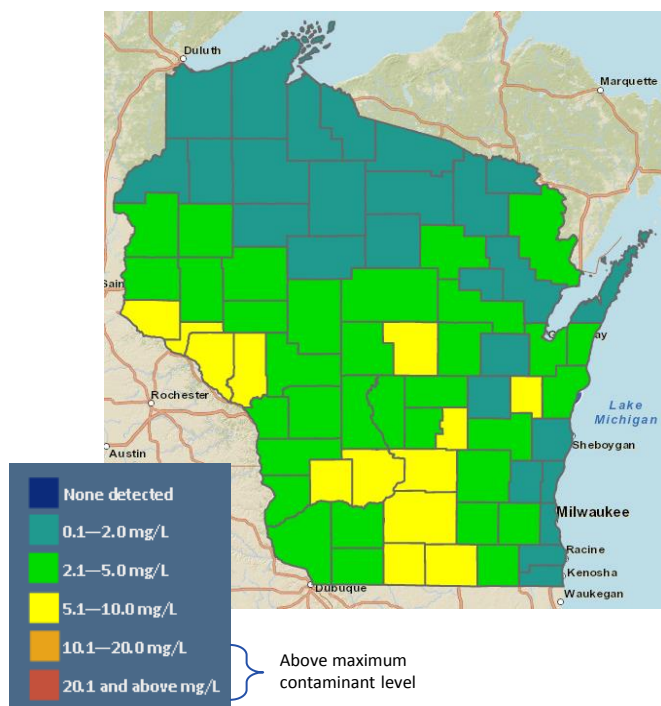
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS RACINE COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **9.2**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **7.4%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

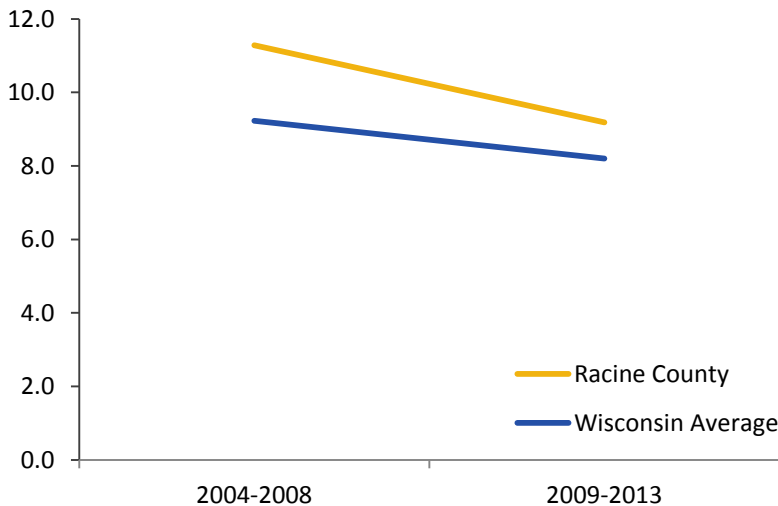
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

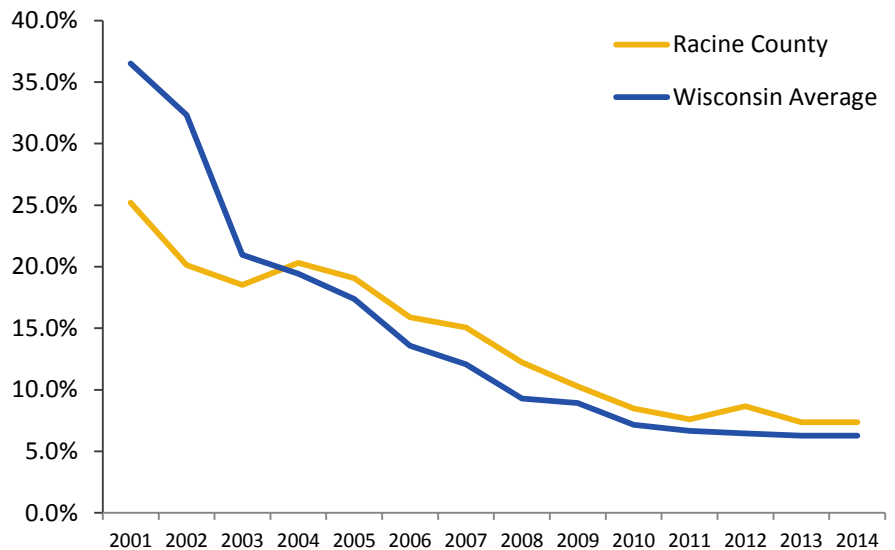
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

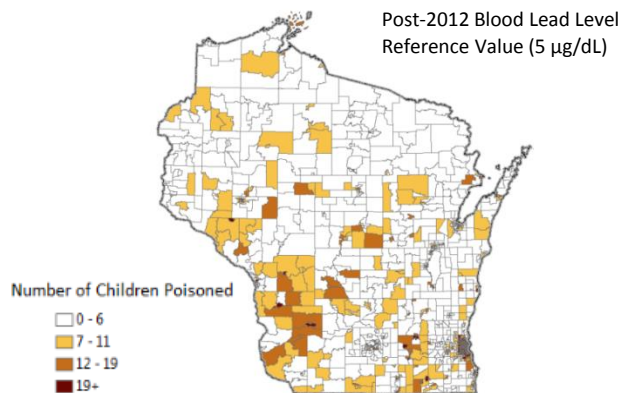
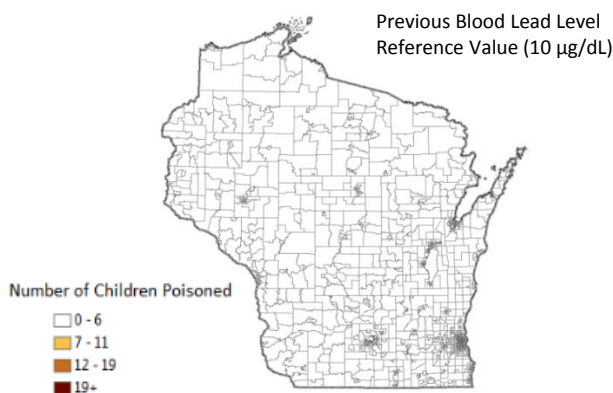
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES RACINE COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **7.9%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **12.1%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

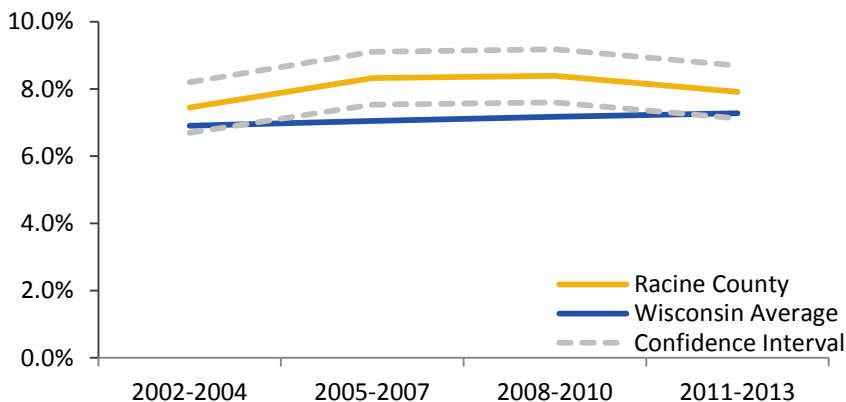
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES RACINE COUNTY

PRETERM BIRTH

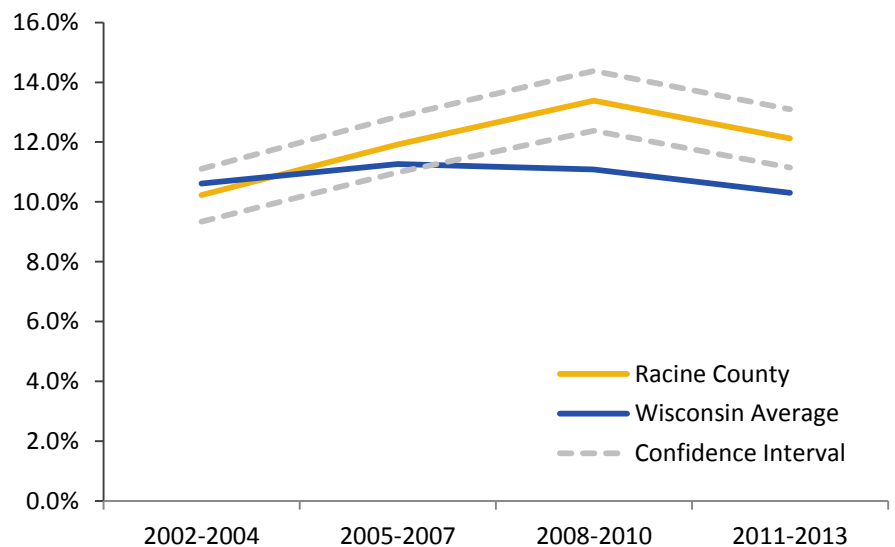
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS RACINE COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **17.1**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

● **11.7**
MELANOMA
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 18.4

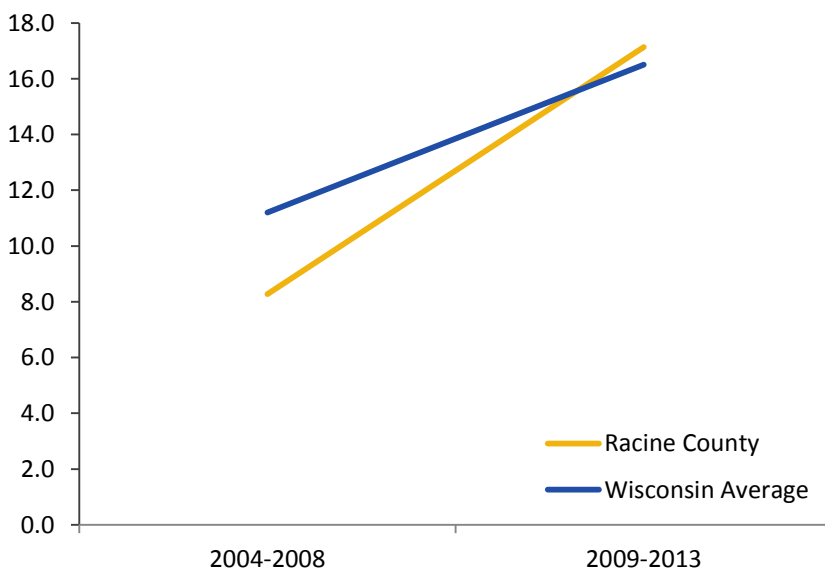
● **71.2**
LUNG CANCER
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 62

● **451.0**
ASTHMA
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



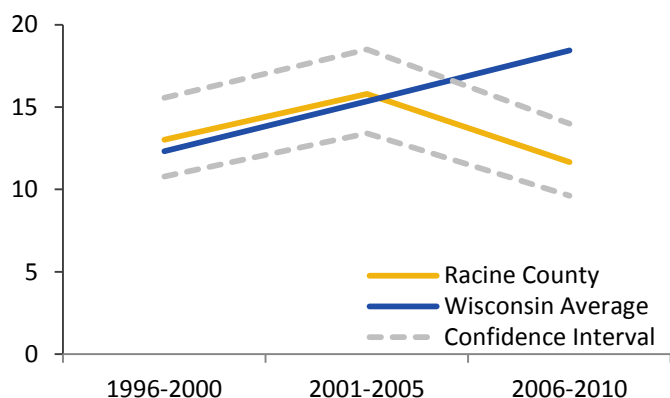


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



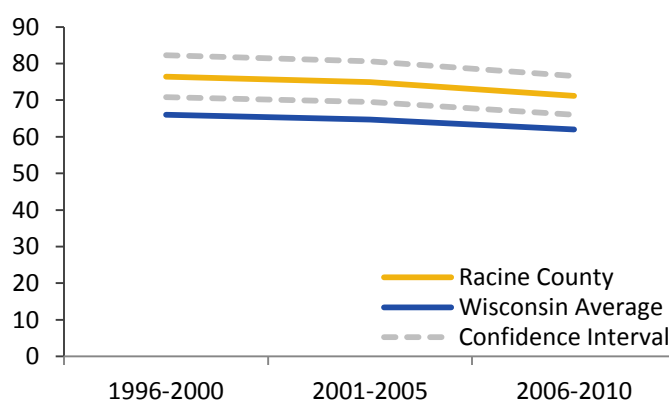
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



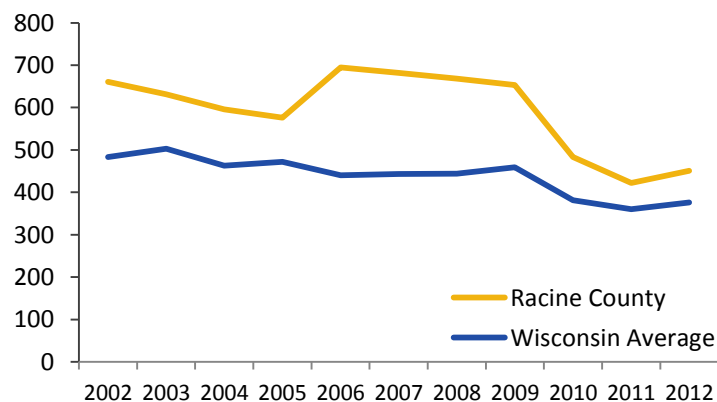
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

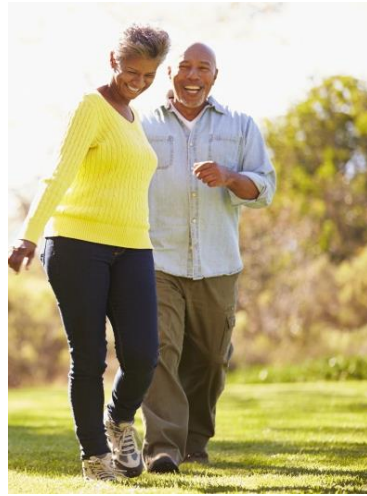
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
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dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



RICHLAND COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

RICHLAND COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.0 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 2.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 11.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.8% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.3% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 27.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 8.9 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 47.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 227.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

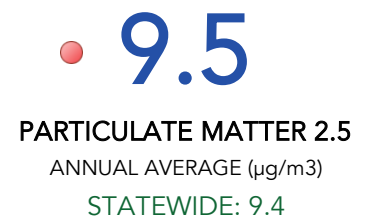
Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



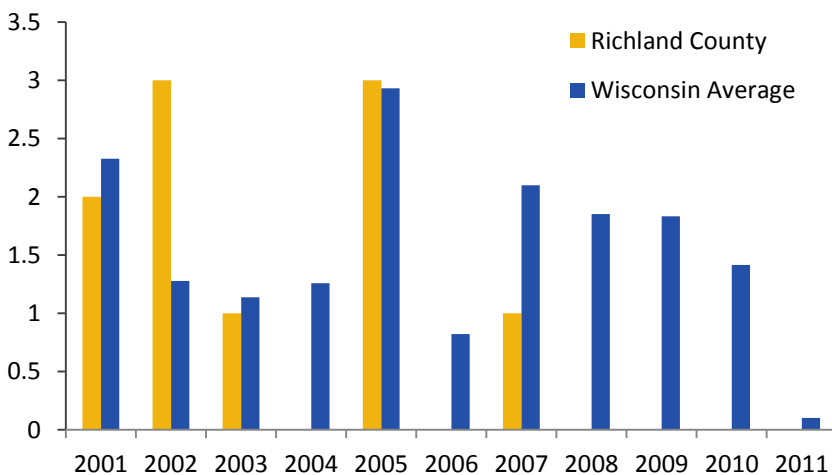
AIR QUALITY RICHLAND COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.



● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

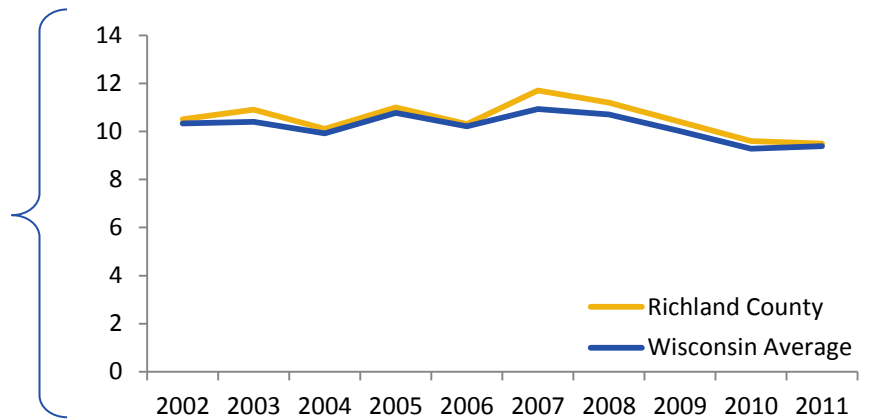
RICHLAND COUNTY

PARTICULATE MATTER 2.5

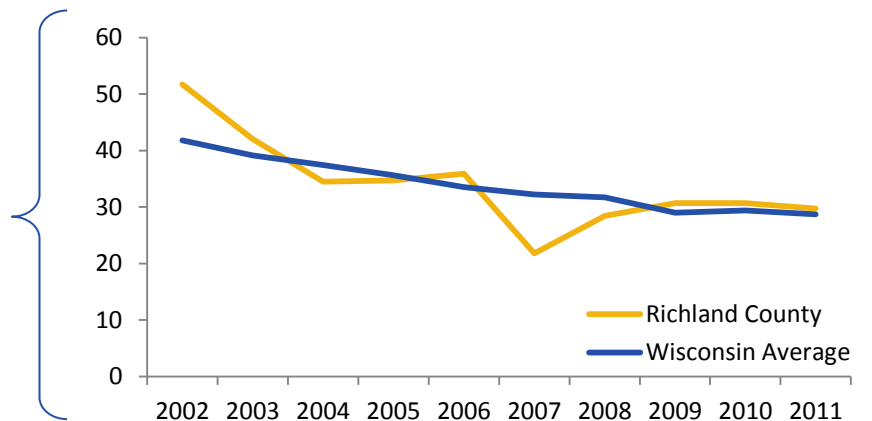
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

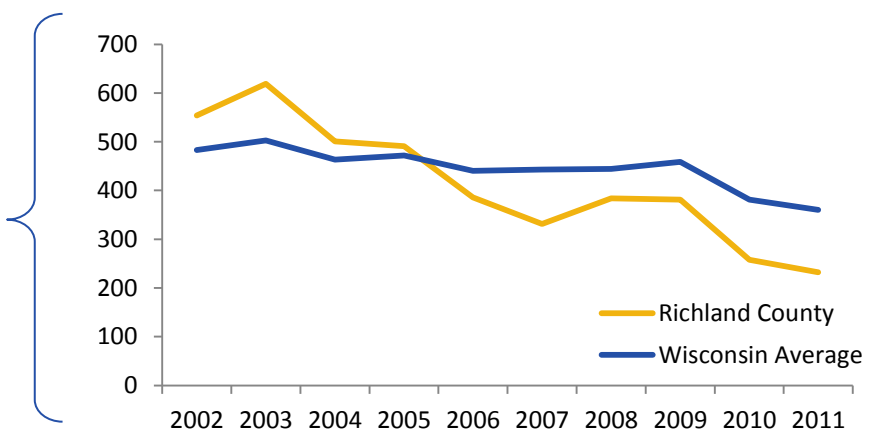
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



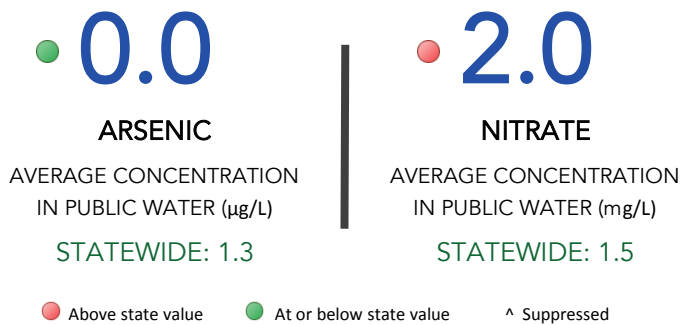
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY RICHLAND COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

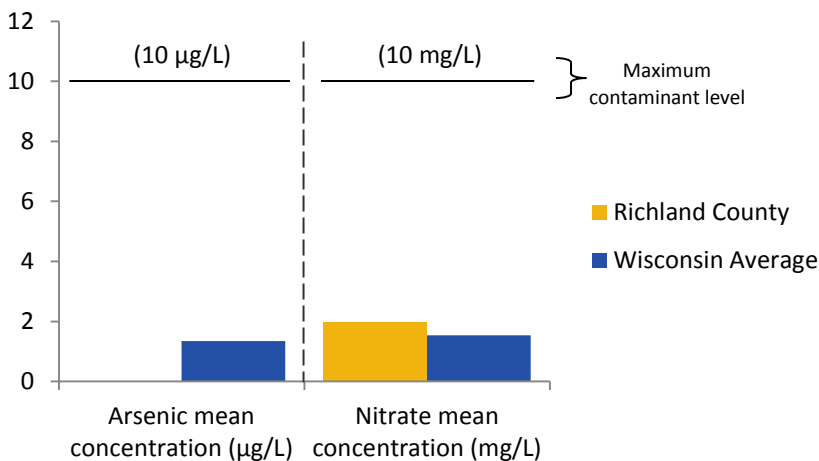
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY RICHLAND COUNTY

PRIVATE DRINKING WATER

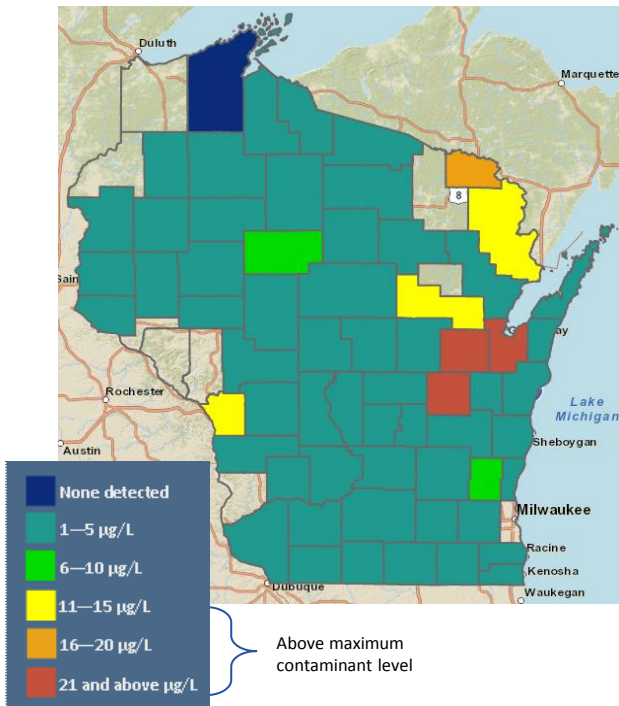
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 $\mu\text{g/L}$ maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

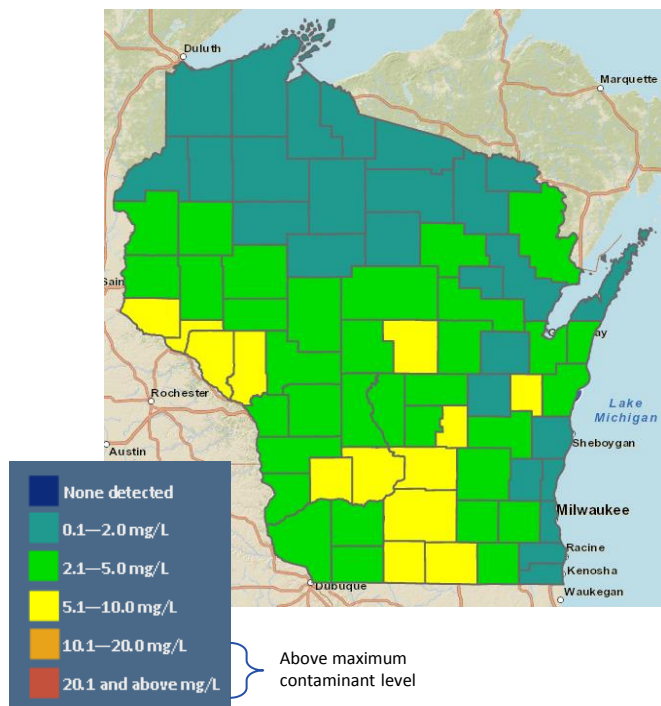
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION ($\mu\text{g/L}$)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

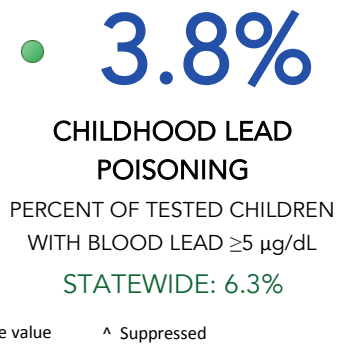
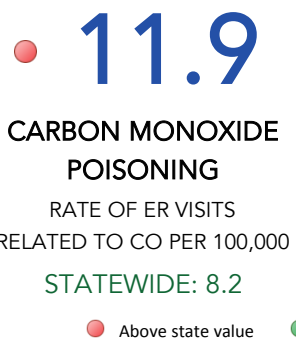


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS RICHLAND COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

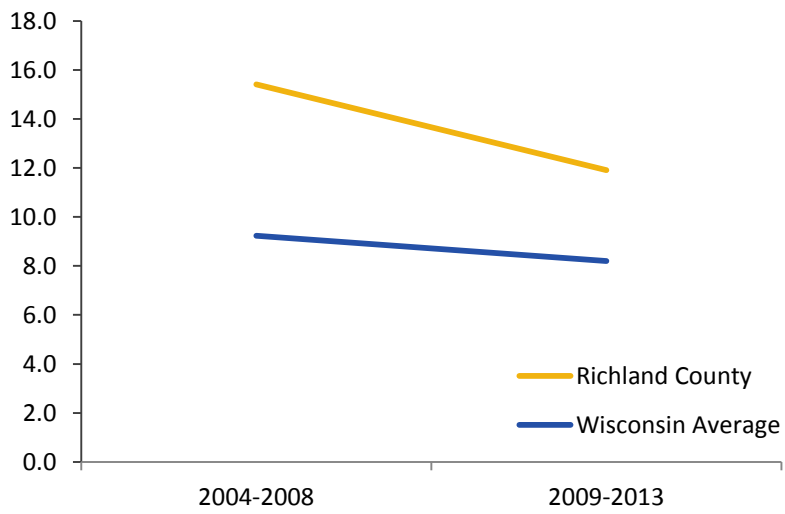


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

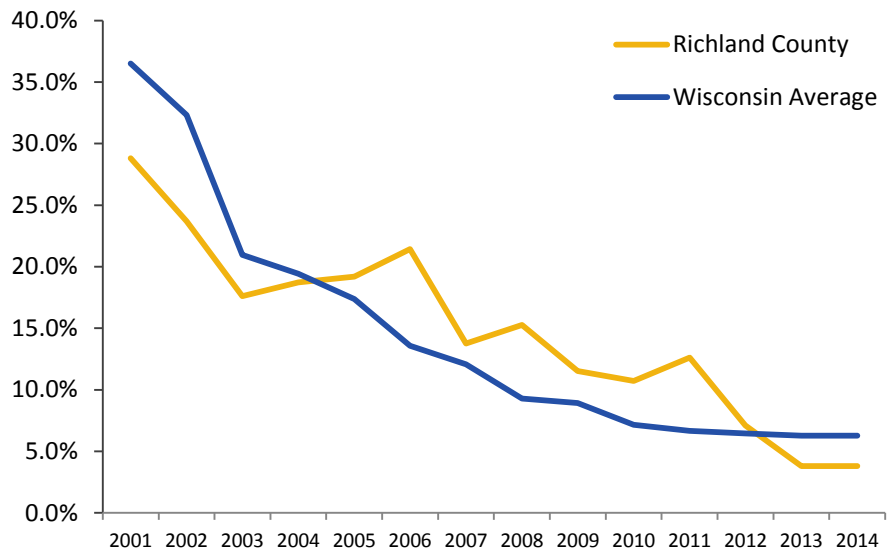
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

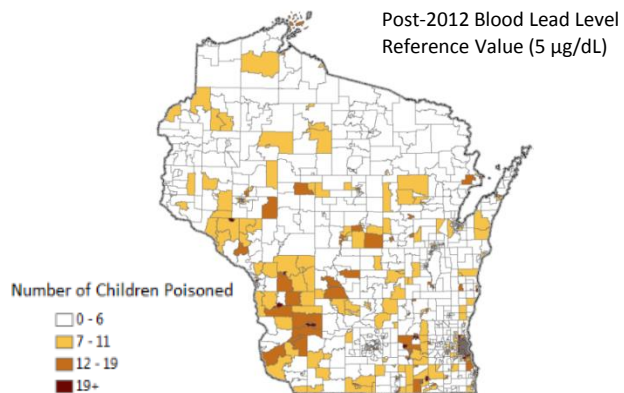
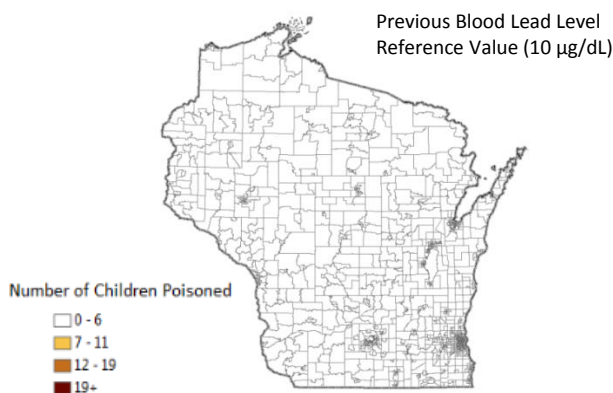
CHILDHOOD LEAD POISONING

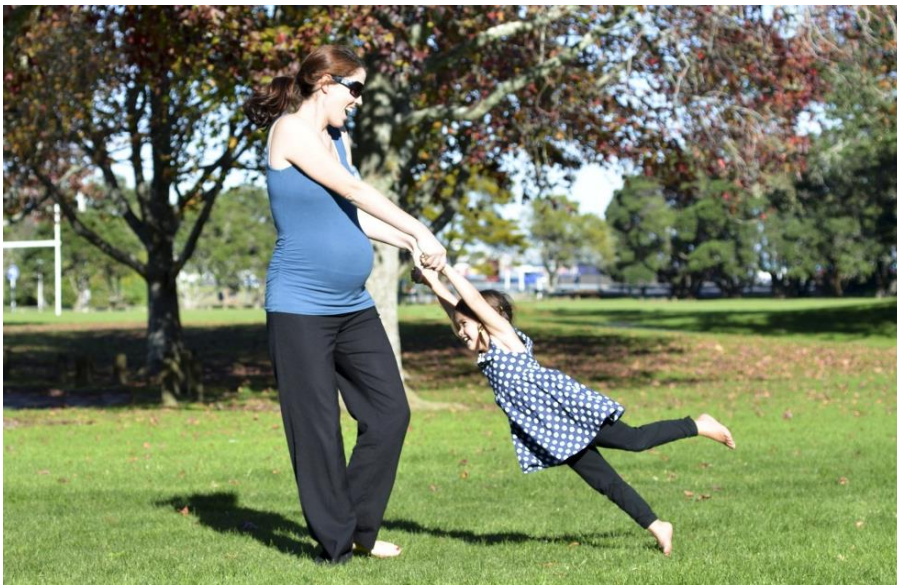
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

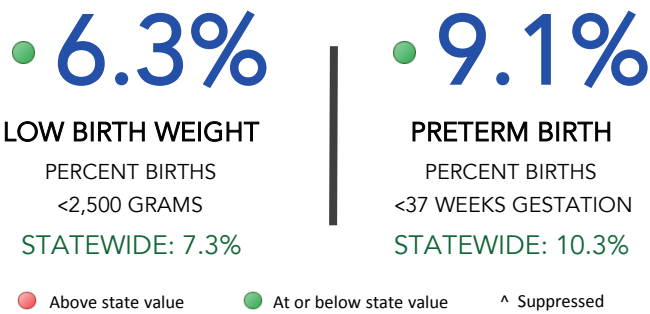
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES RICHLAND COUNTY

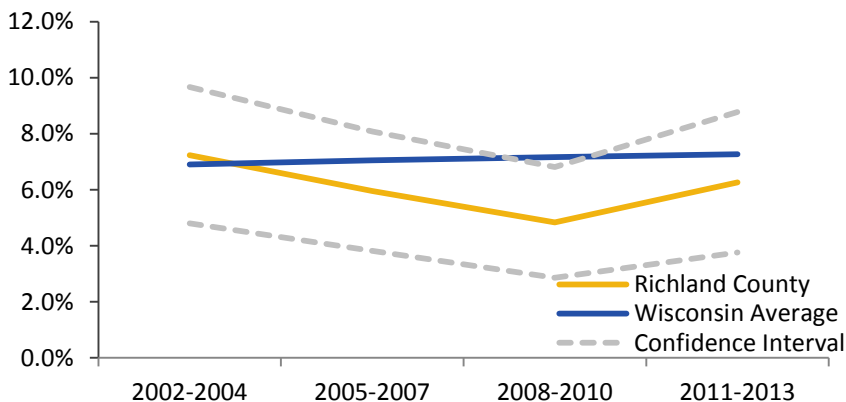
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

RICHLAND COUNTY

PRETERM BIRTH

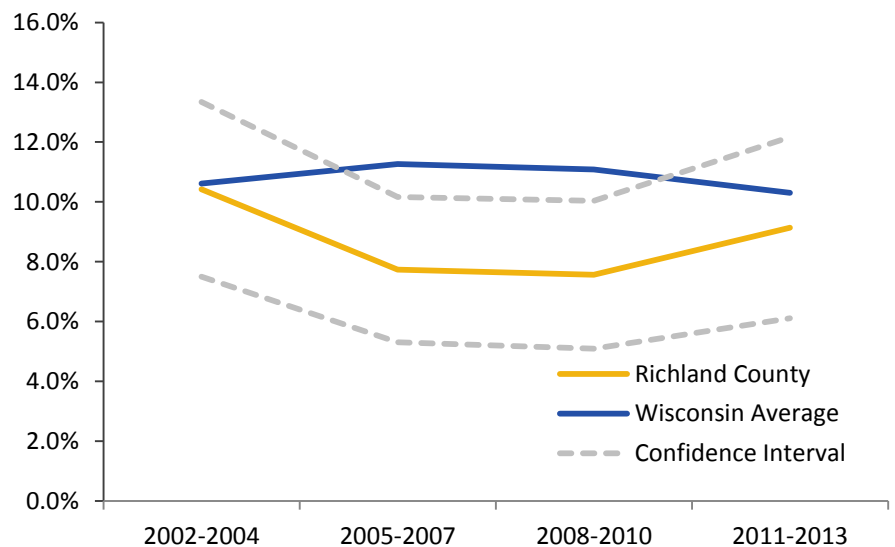
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

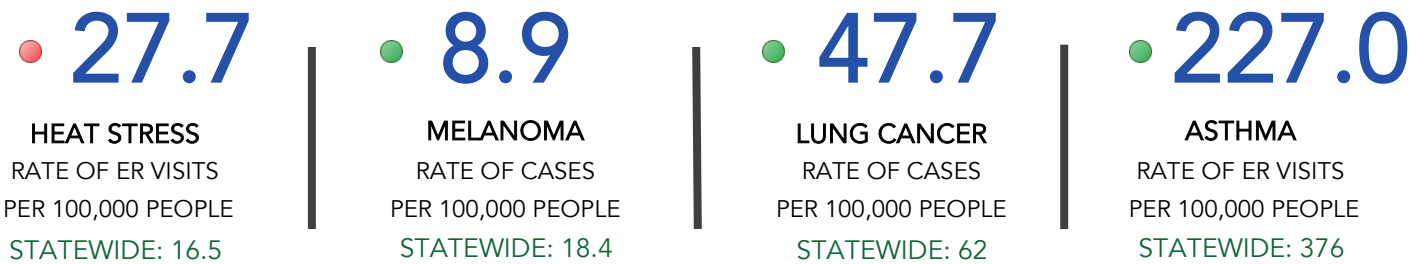
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS RICHLAND COUNTY

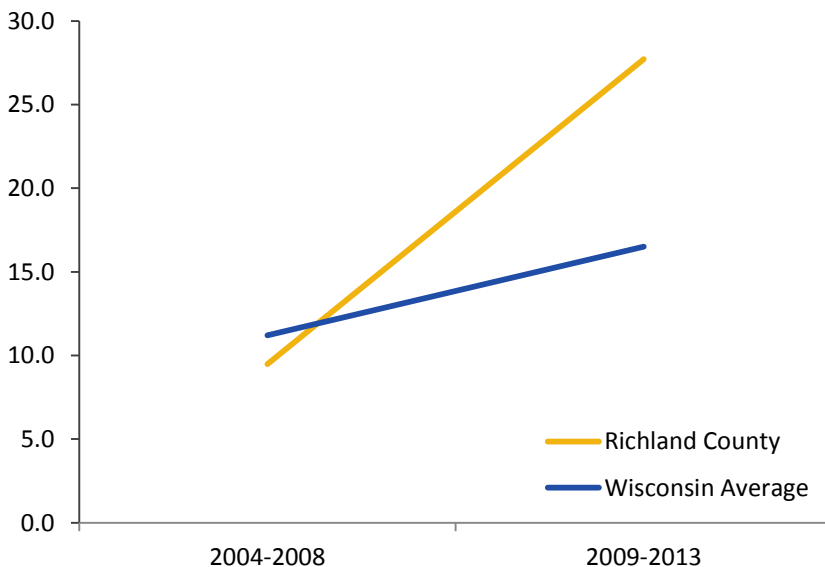
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value
 ● At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



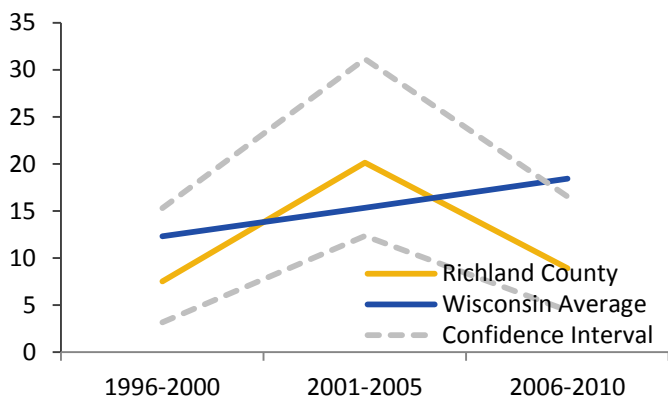


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



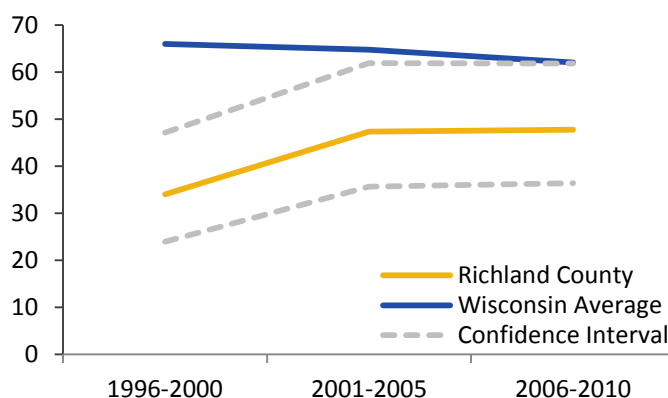
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



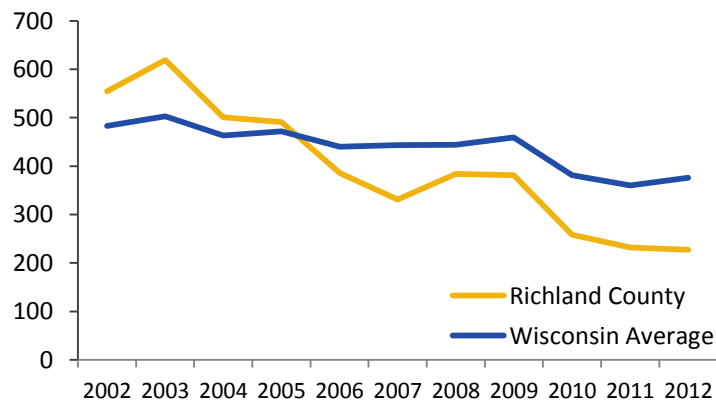
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

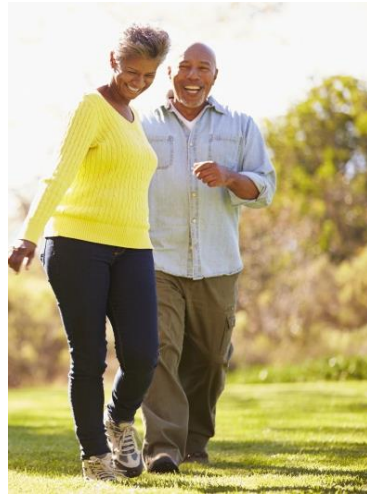
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



ROCK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

ROCK COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.8 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 11.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 6.2% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 11.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 19.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 18.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 72.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 582.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY ROCK COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

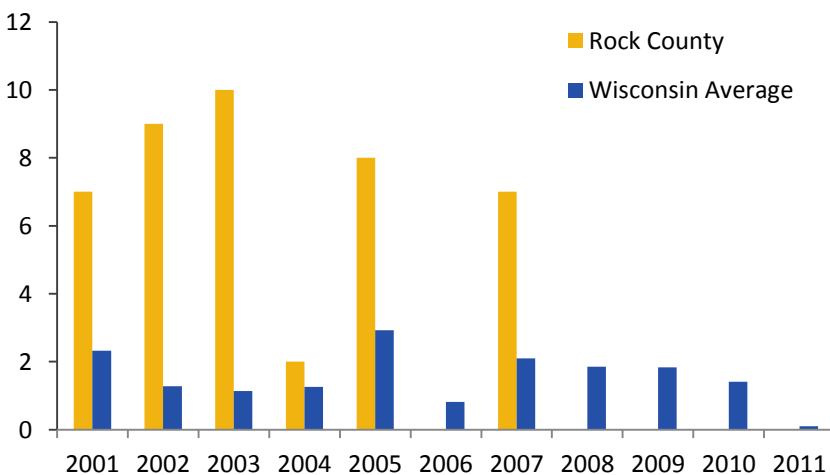
● 10.9

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

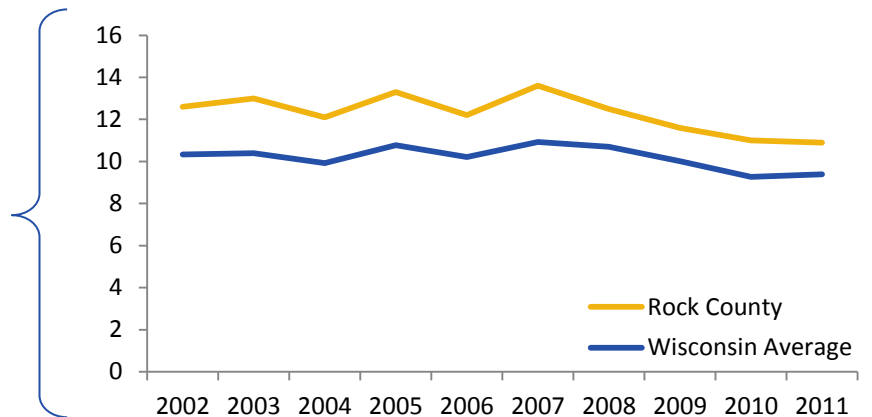
ROCK COUNTY

PARTICULATE MATTER 2.5

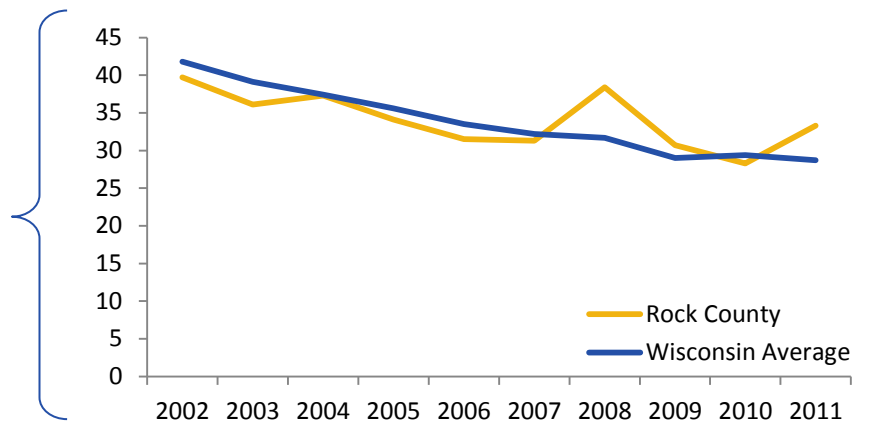
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

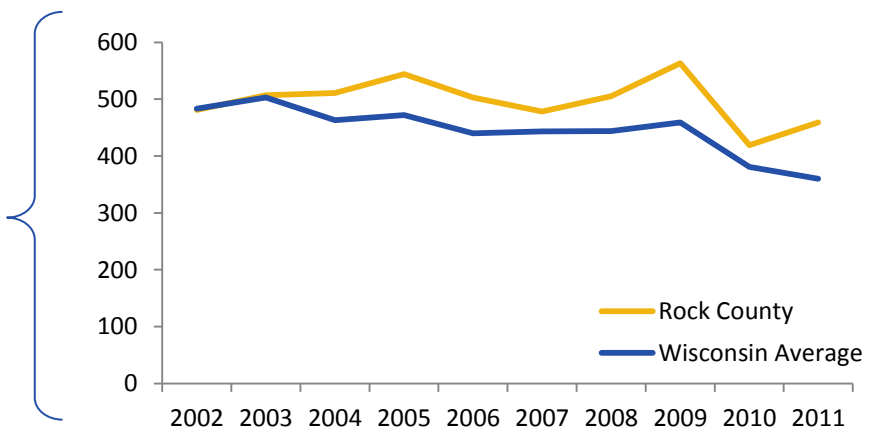
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



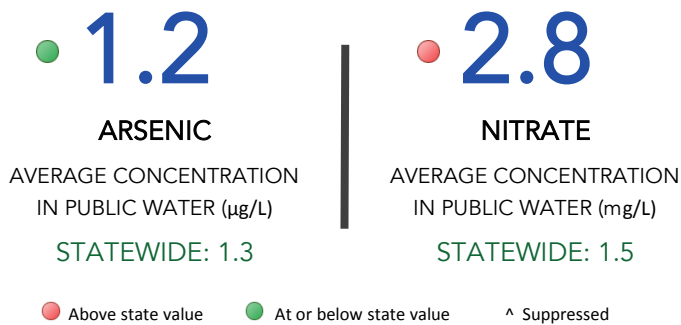
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY ROCK COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

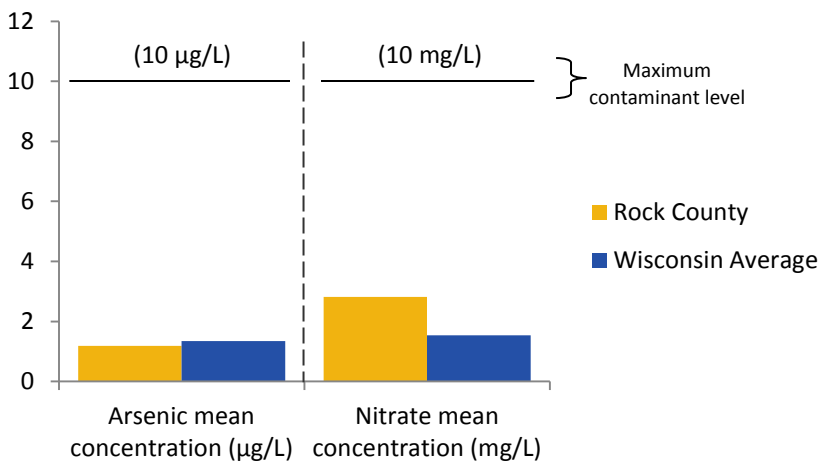
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY ROCK COUNTY

PRIVATE DRINKING WATER

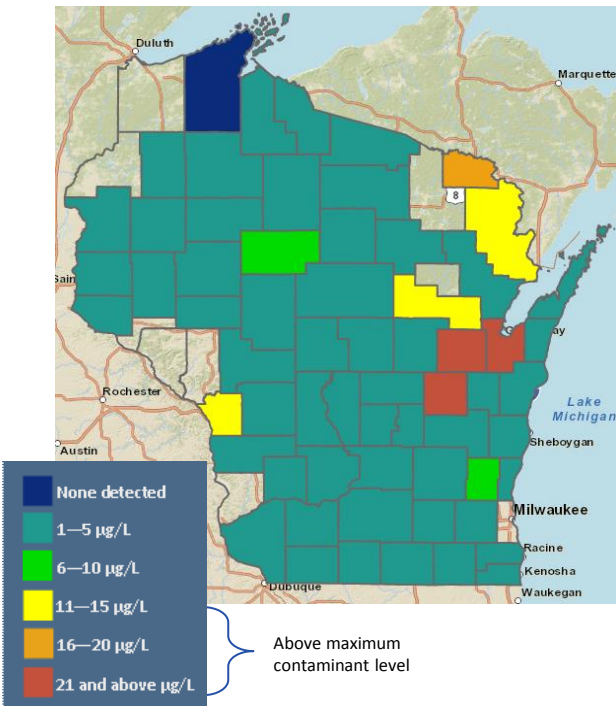
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

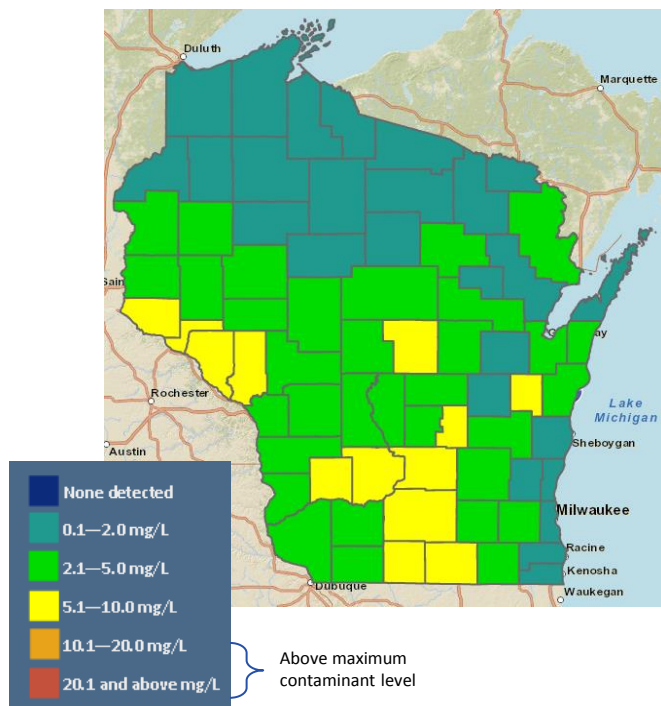
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS ROCK COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **11.5**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **6.2%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

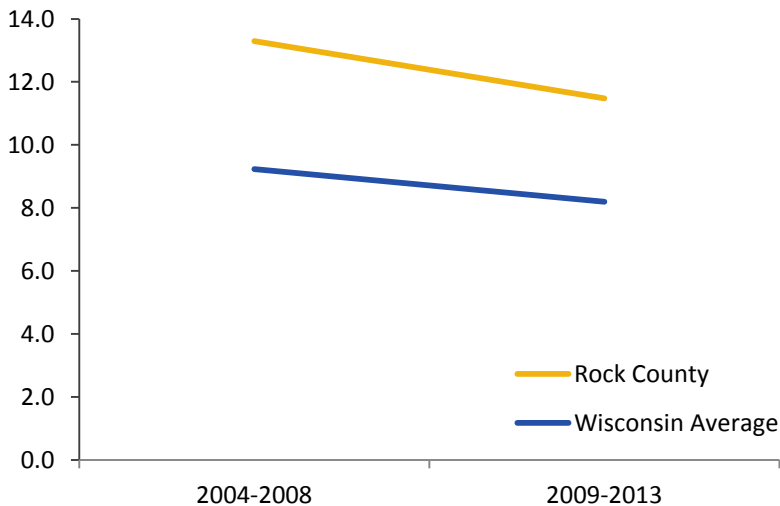
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. § 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

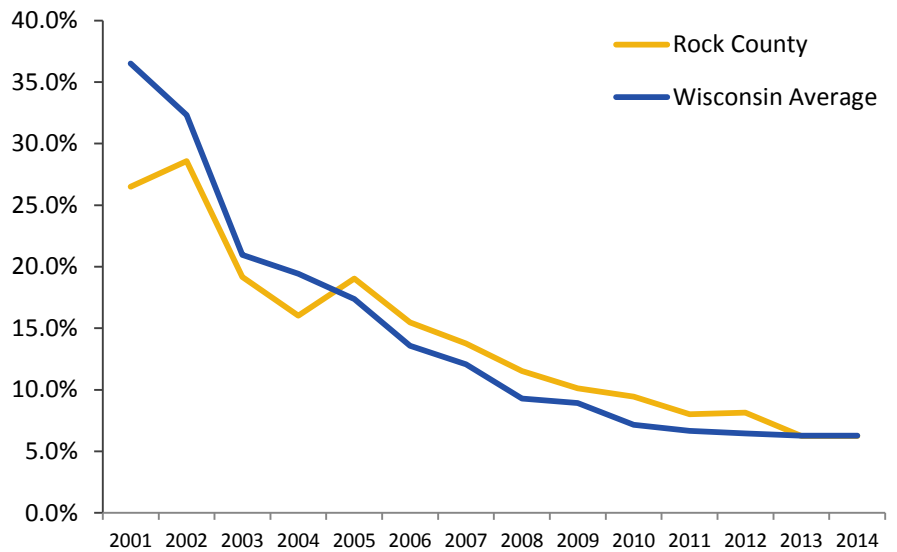
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

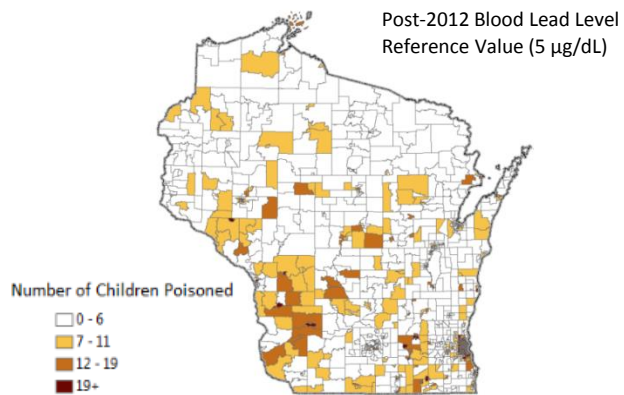
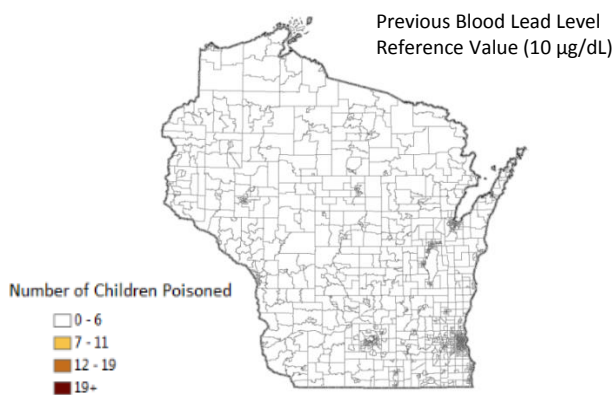
CHILDHOOD LEAD POISONING

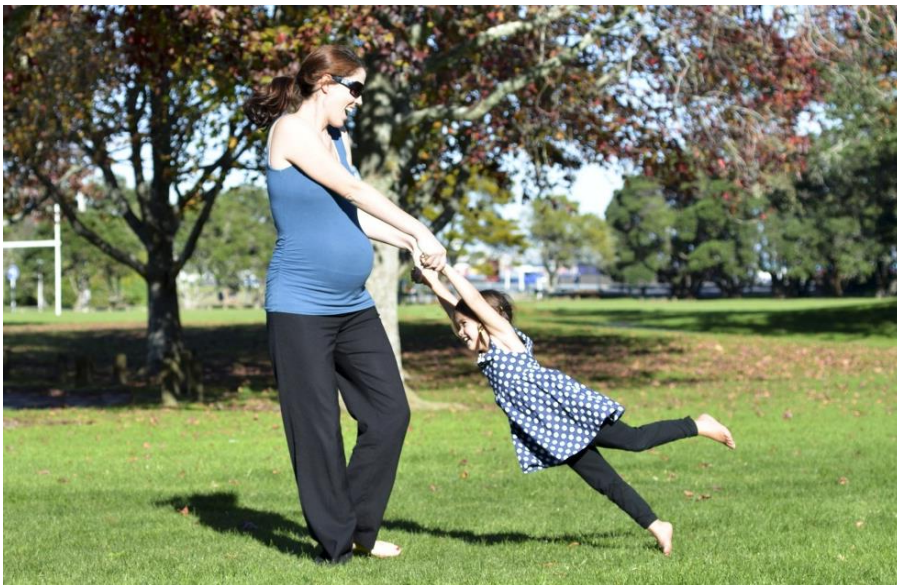
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES ROCK COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **7.7%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **11.1%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

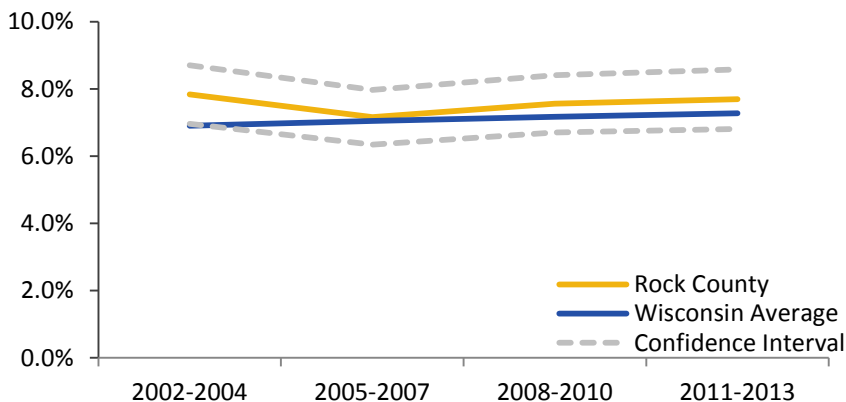
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

ROCK COUNTY

PRETERM BIRTH

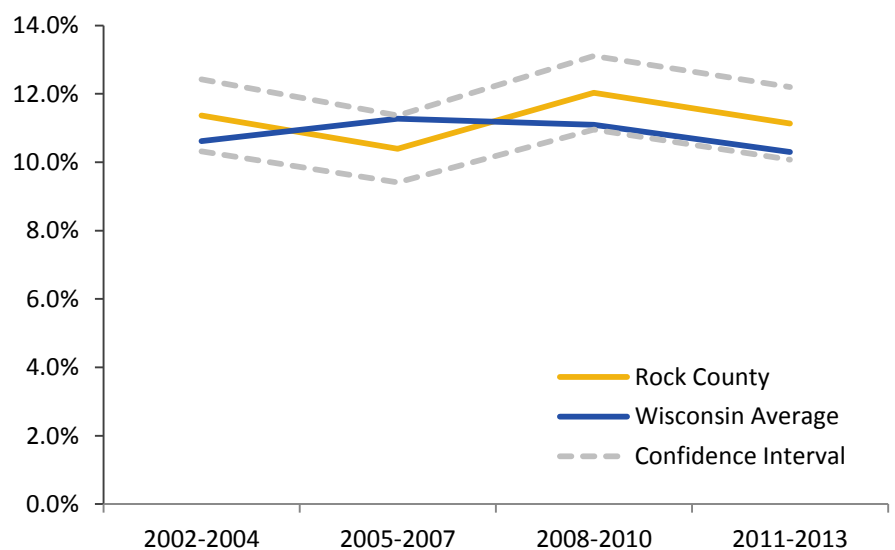
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS ROCK COUNTY

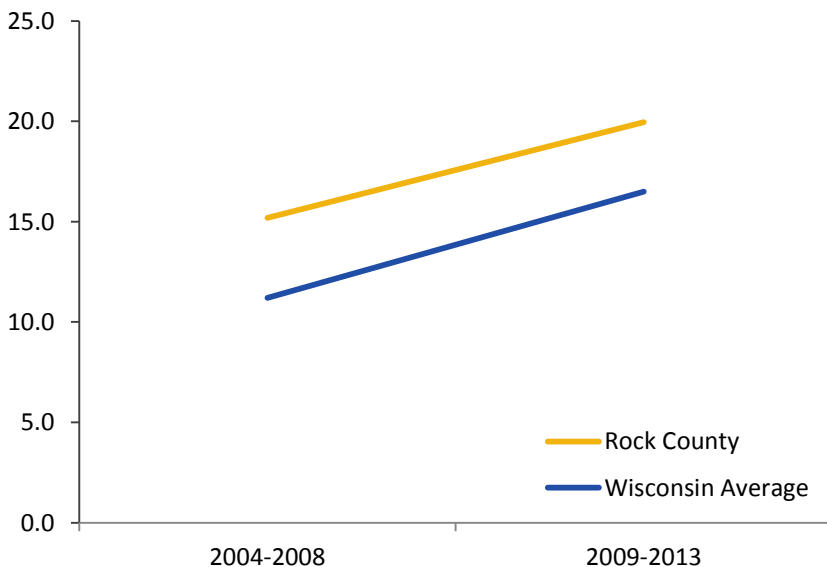
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 19.9</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 18.5</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 72.0</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 582.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



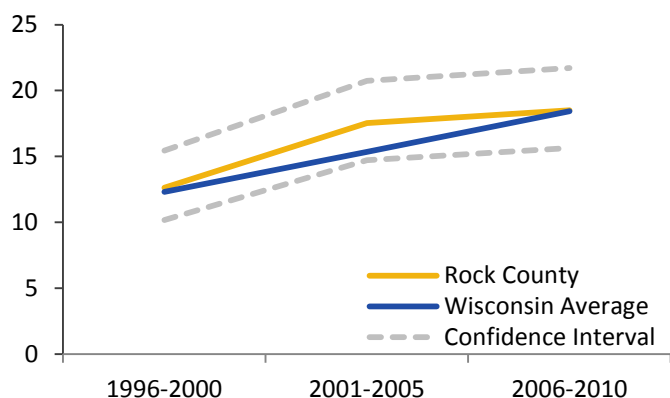


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



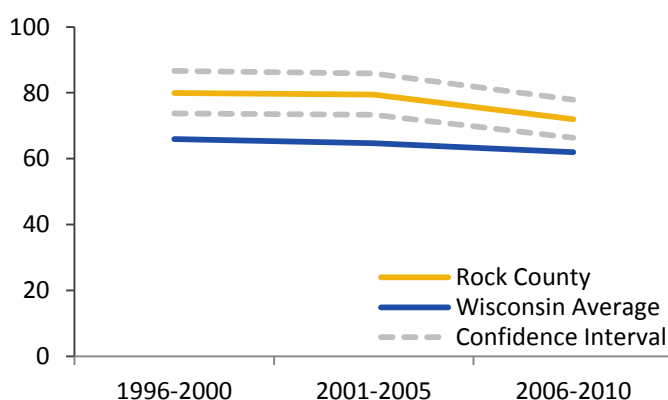
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



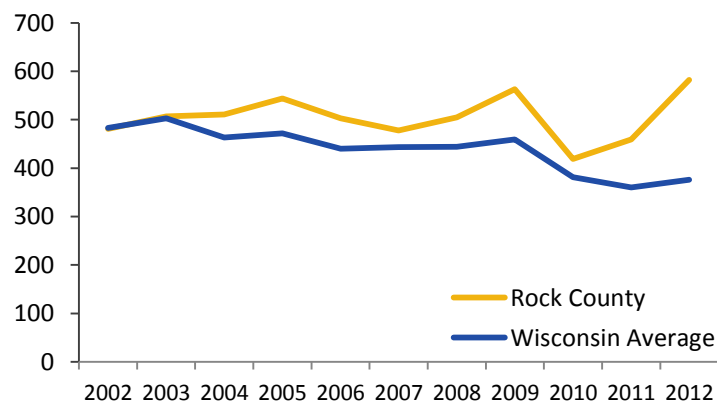
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



RUSK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

RUSK COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.2 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 20.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.1% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 4.6% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 17.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 14.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 62.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 358.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

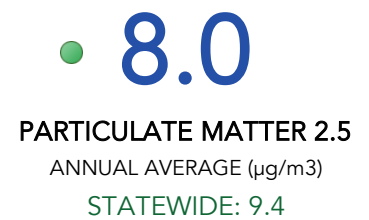
Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



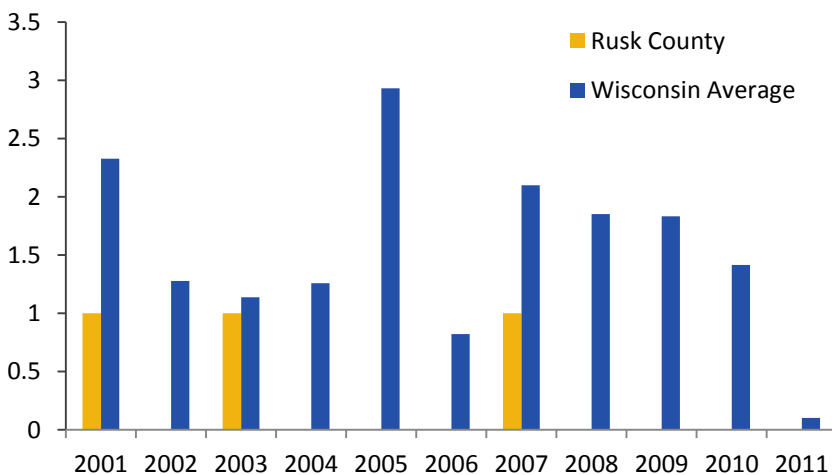
AIR QUALITY RUSK COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.



● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

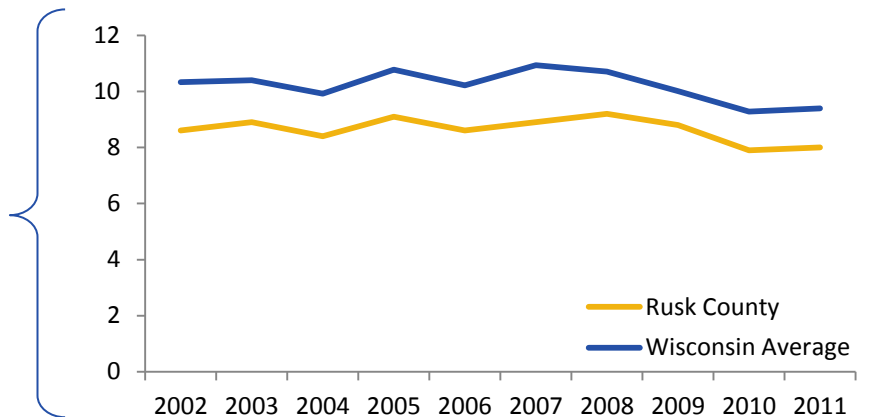
RUSK COUNTY

PARTICULATE MATTER 2.5

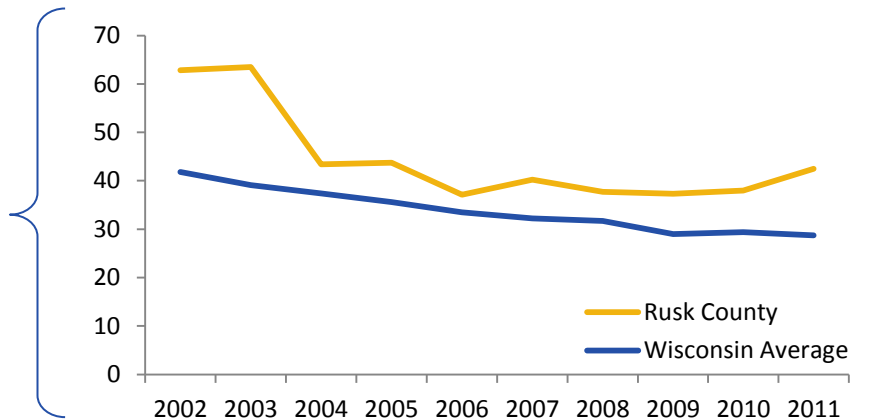
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

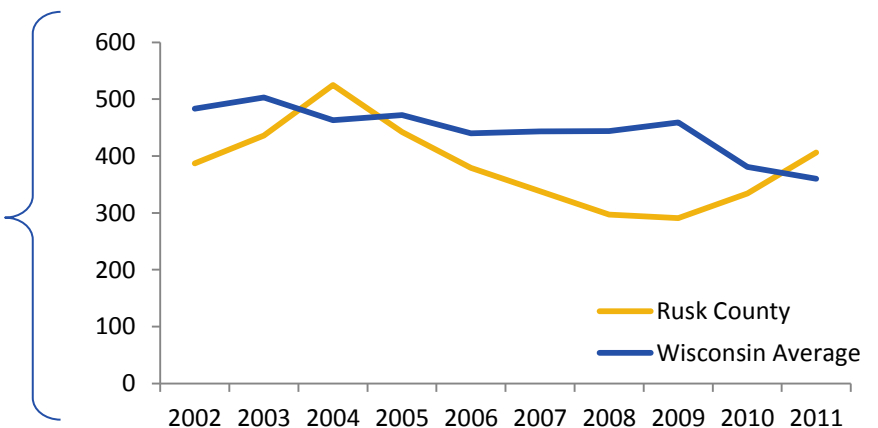
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



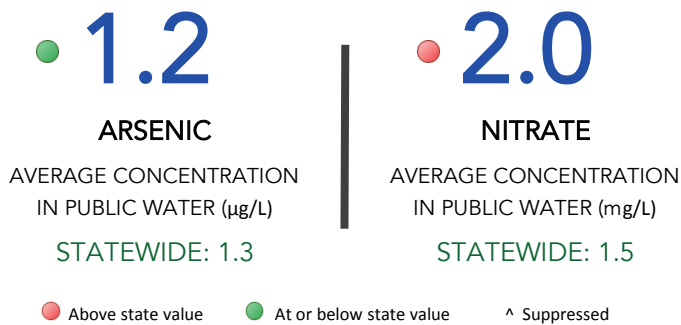
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY RUSK COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

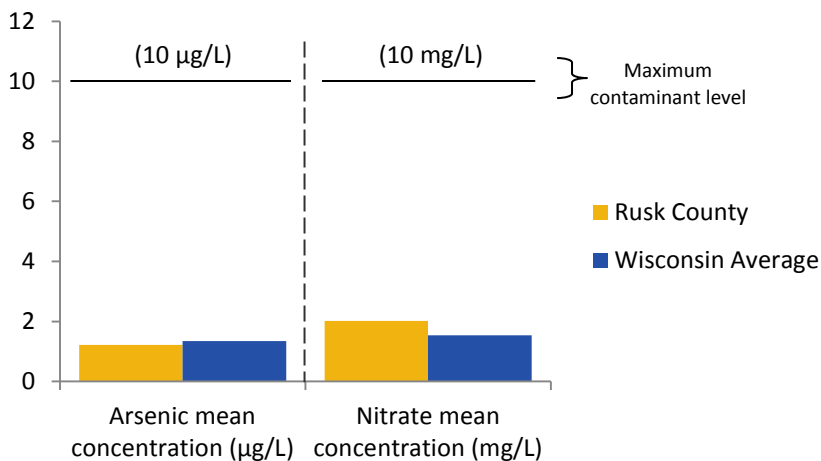
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY RUSK COUNTY

PRIVATE DRINKING WATER

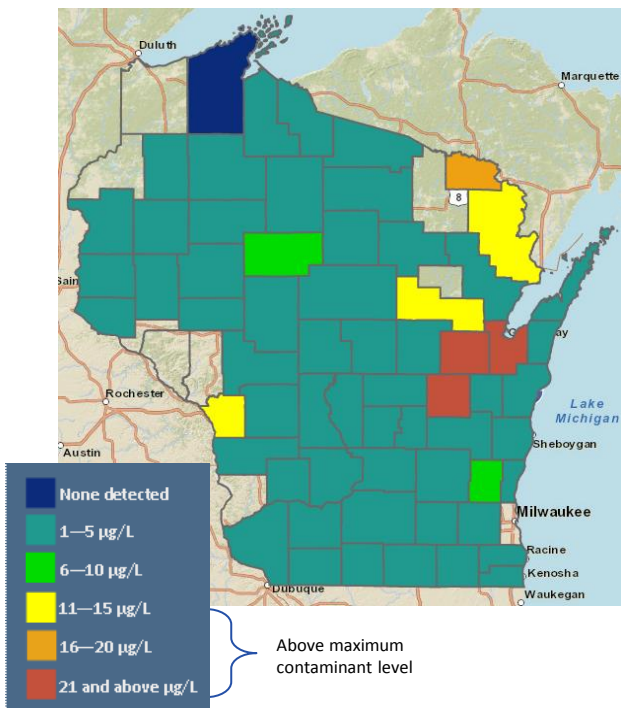
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

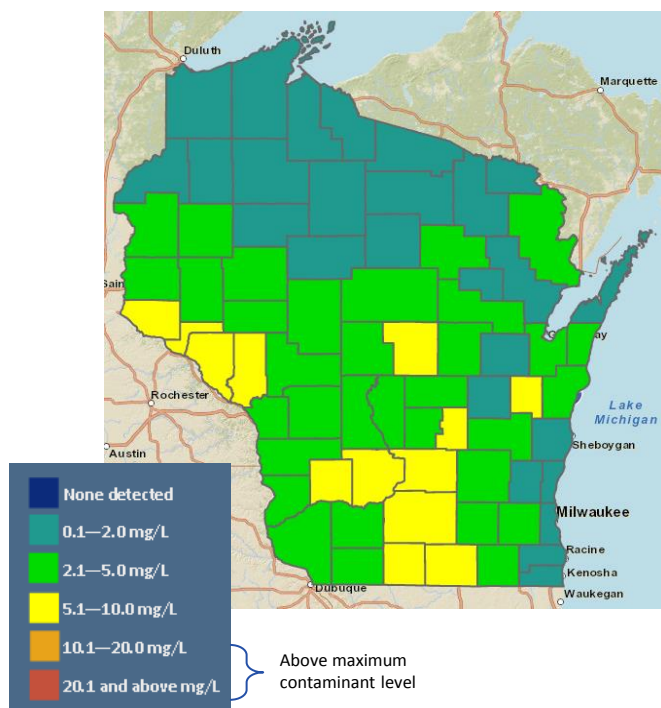
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

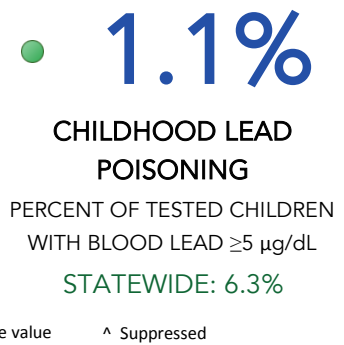
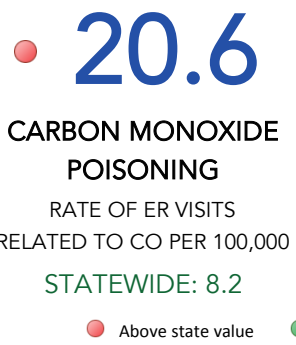


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS RUSK COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

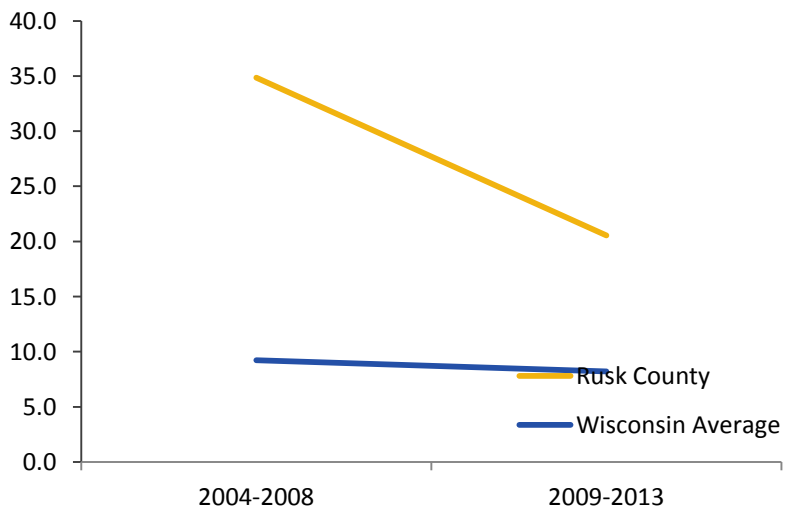


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

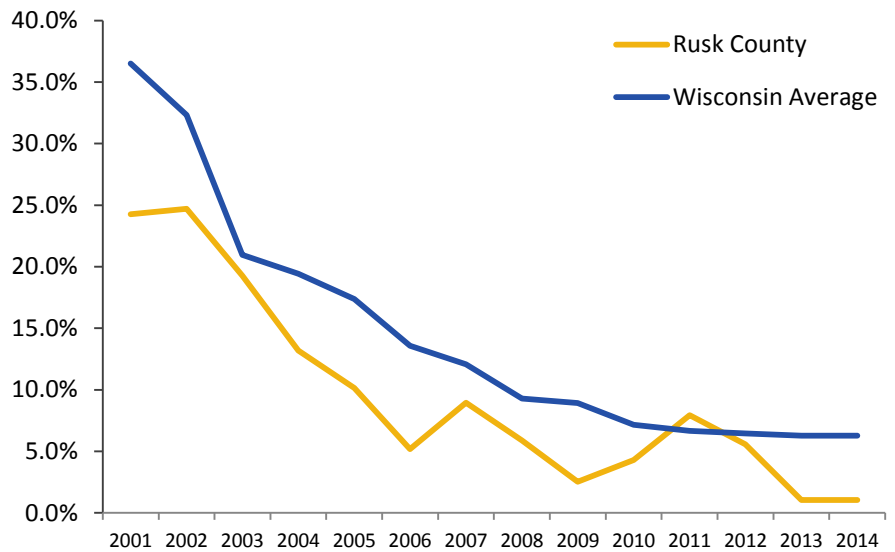
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

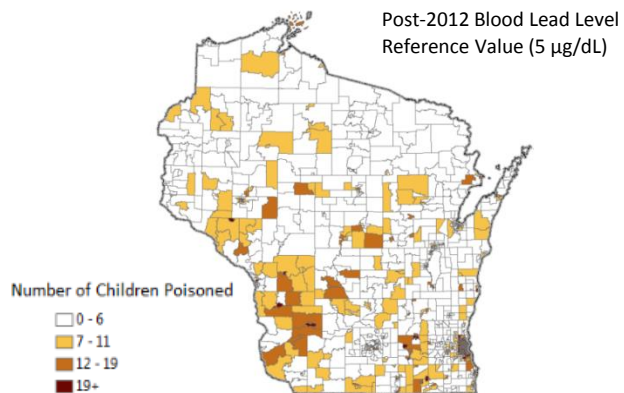
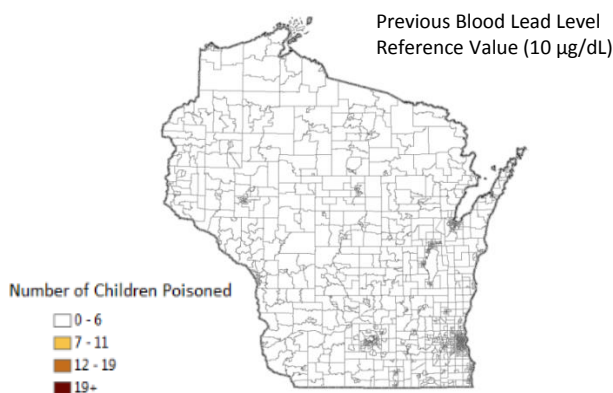
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

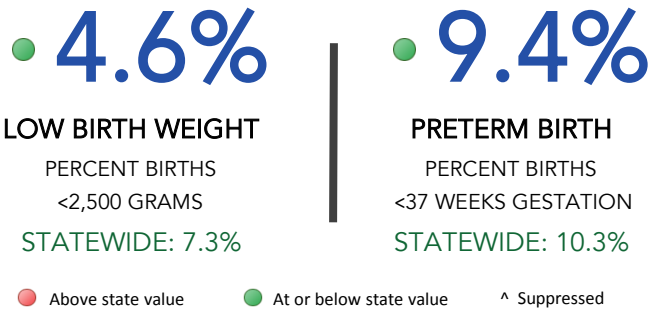
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES RUSK COUNTY

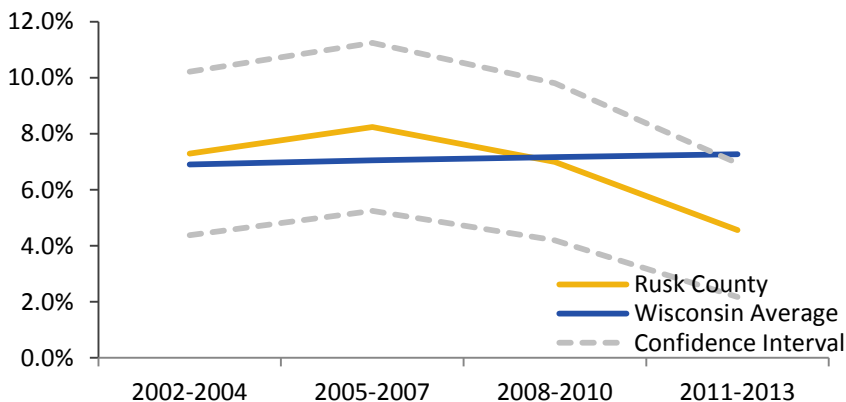
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES RUSK COUNTY

PRETERM BIRTH

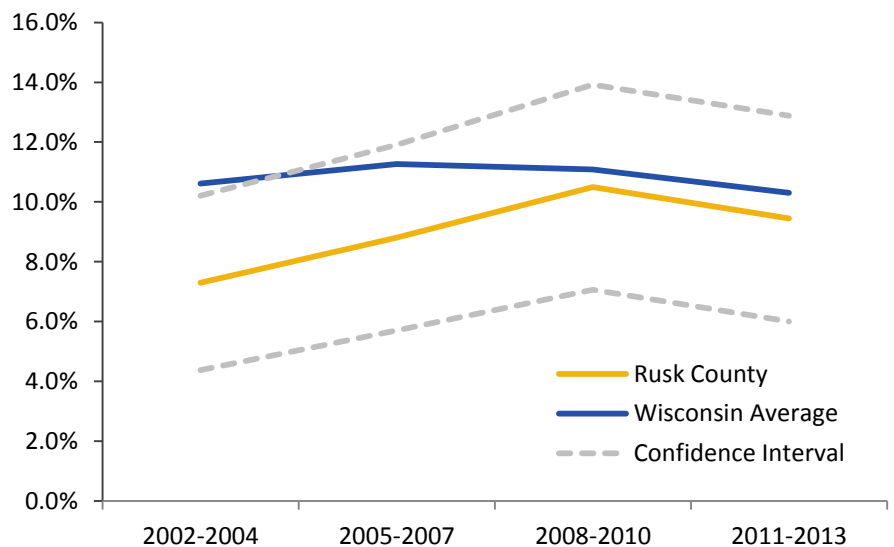
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

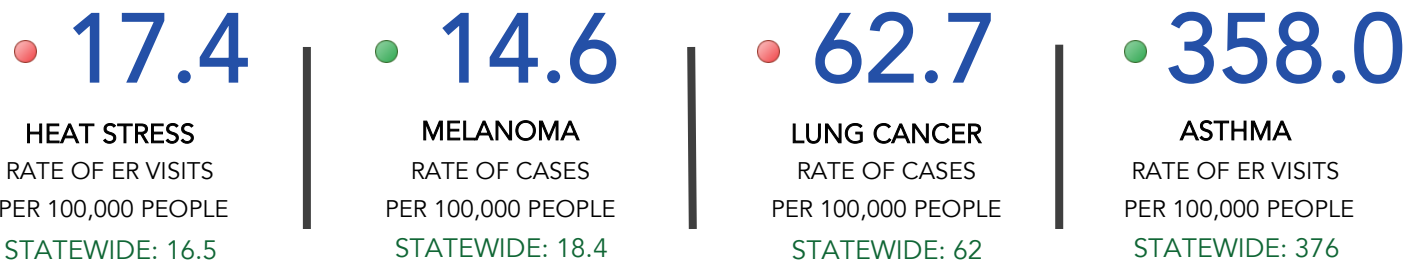
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS RUSK COUNTY

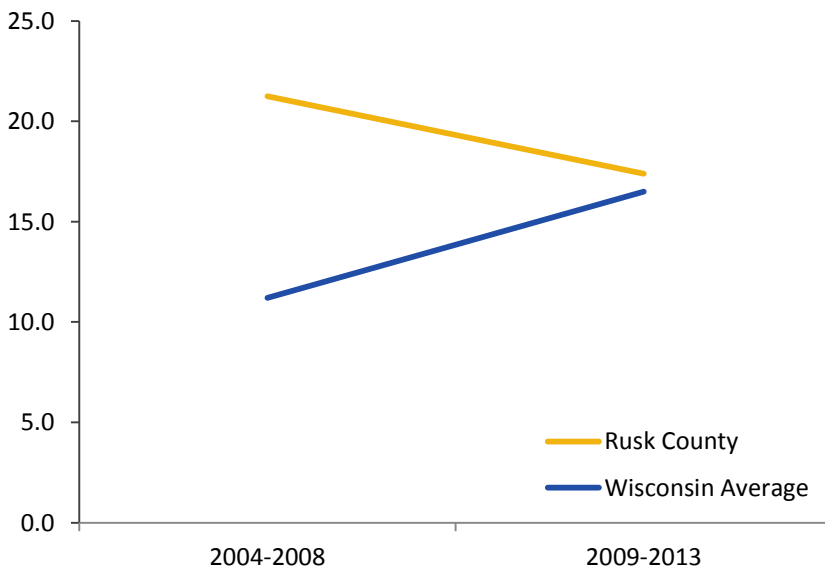
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht

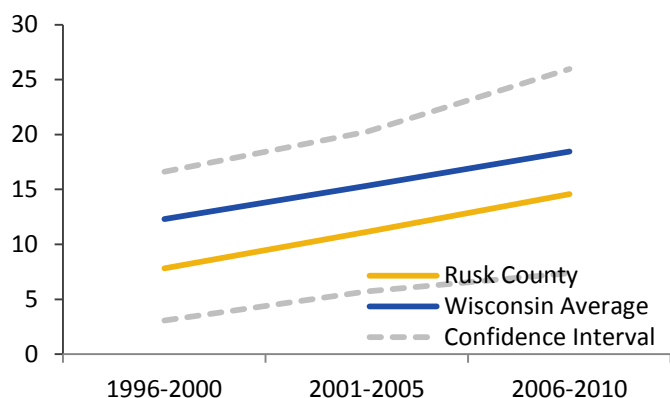


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



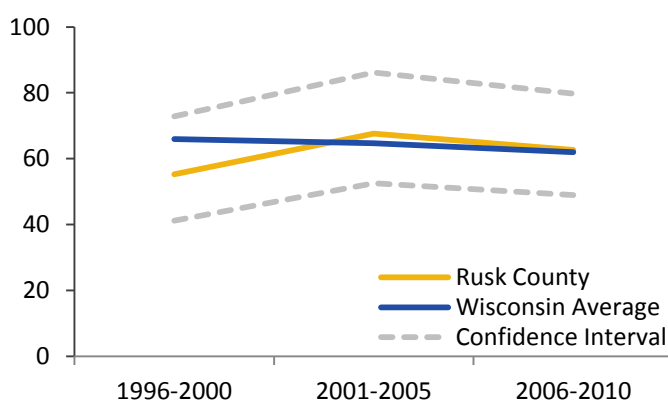
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



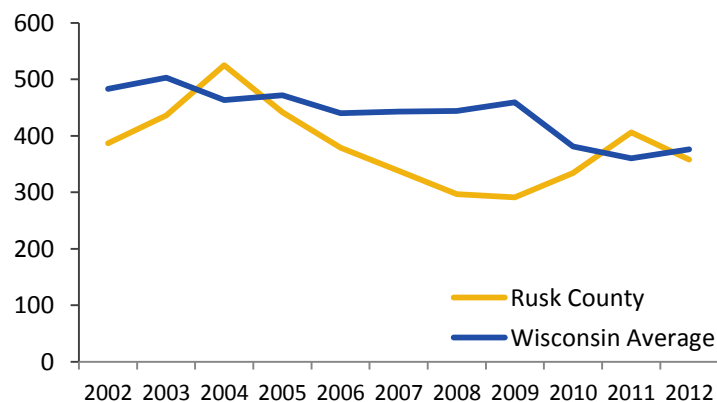
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

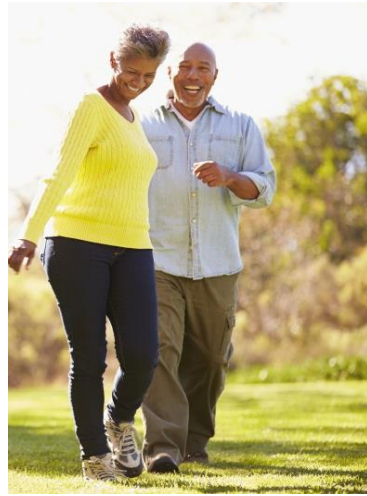
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



SAUK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

SAUK COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.3 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 9.8 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.8% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 28.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 7.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 48.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 287.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

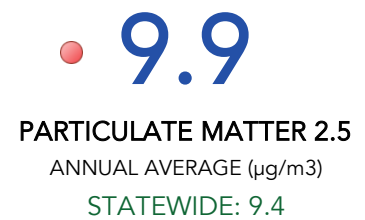
Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



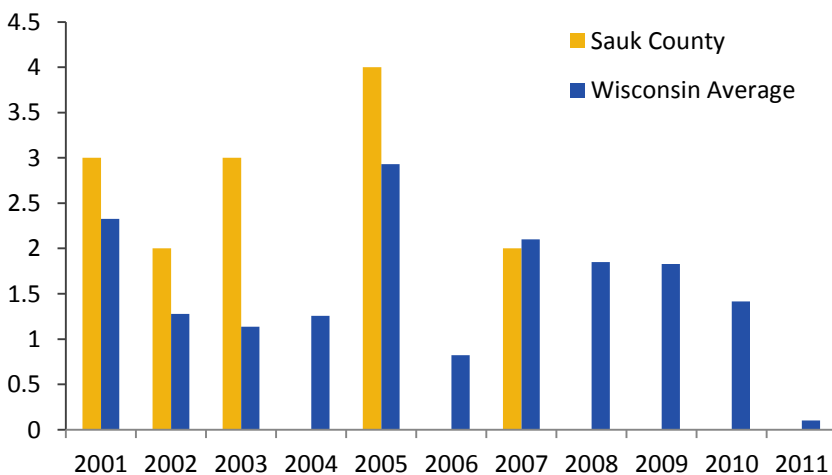
AIR QUALITY SAUK COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.



● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





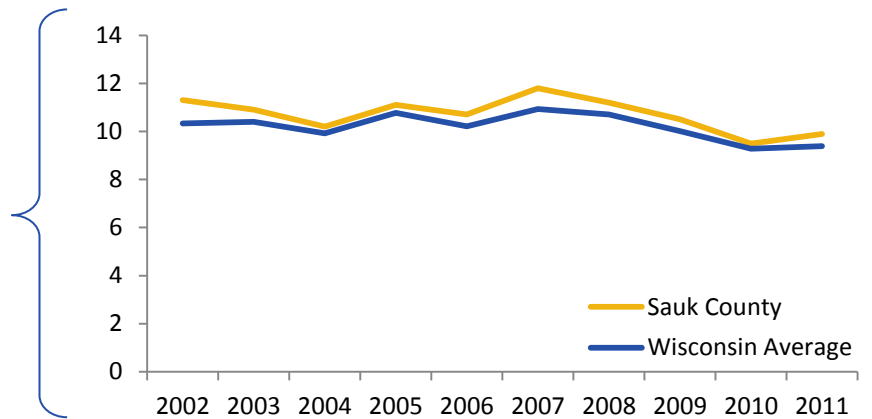
AIR QUALITY SAUK COUNTY

PARTICULATE MATTER 2.5

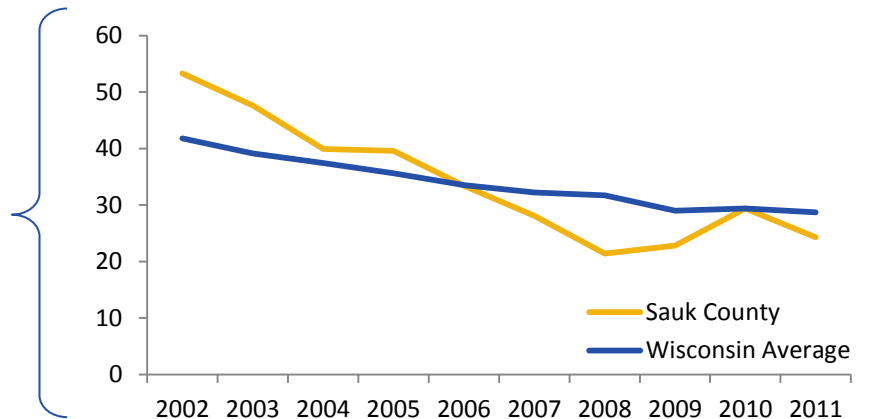
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

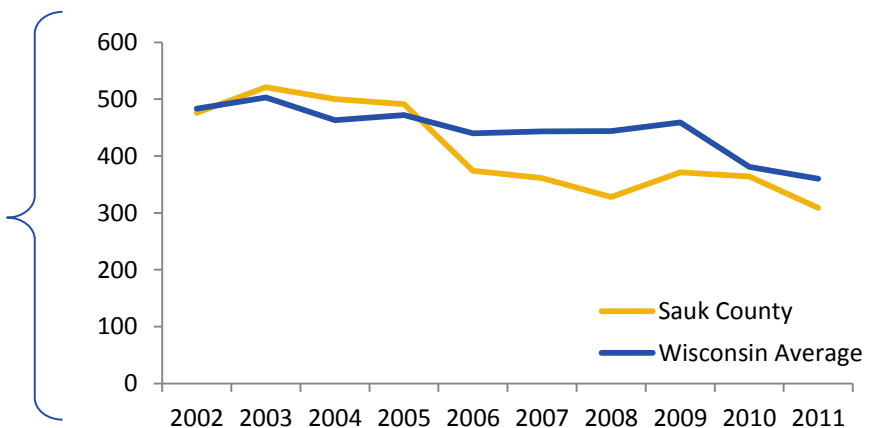
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



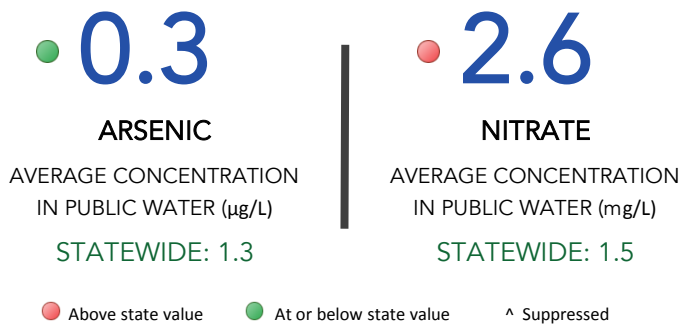
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY SAUK COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

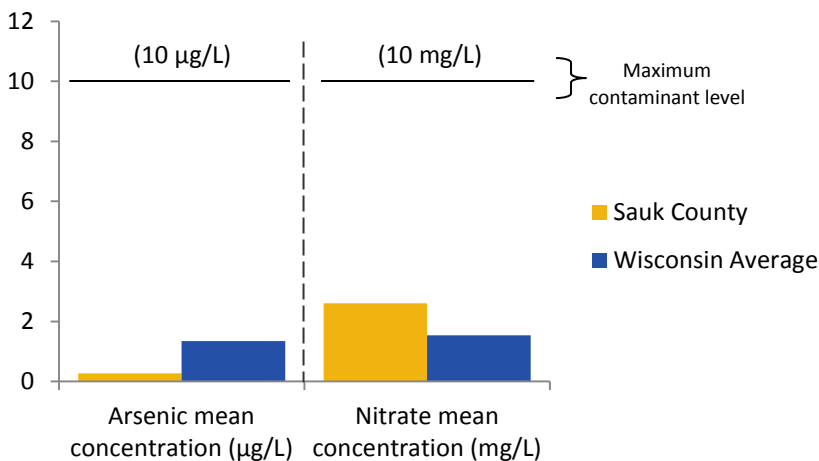
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY SAUK COUNTY

PRIVATE DRINKING WATER

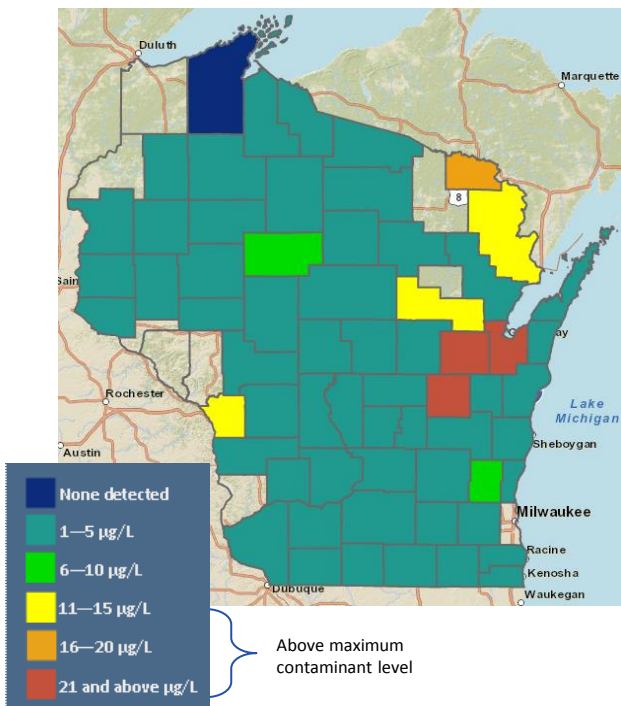
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

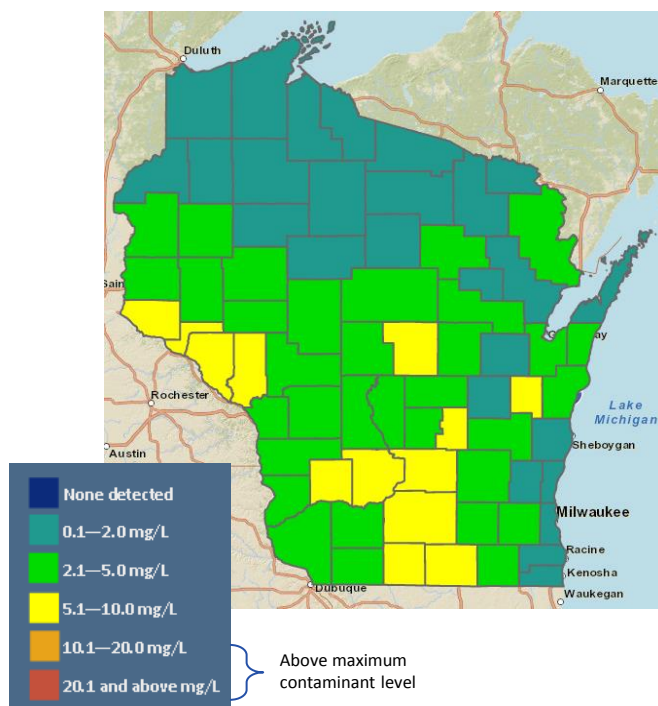
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

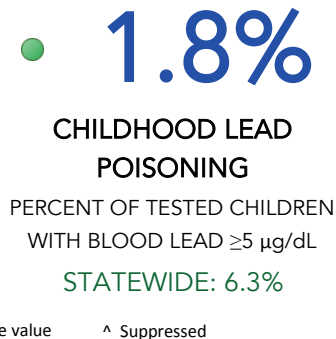
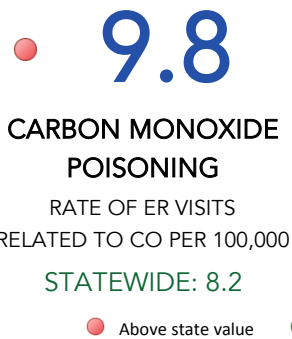


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

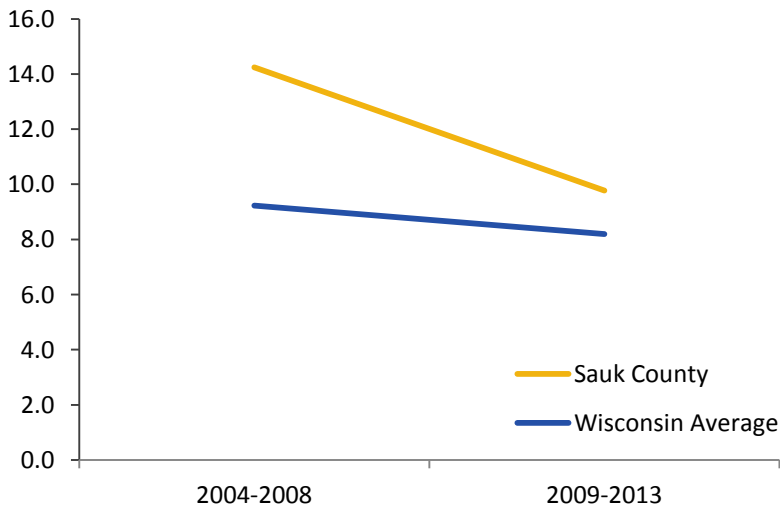


HOME HAZARDS SAUK COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE




CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht 



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

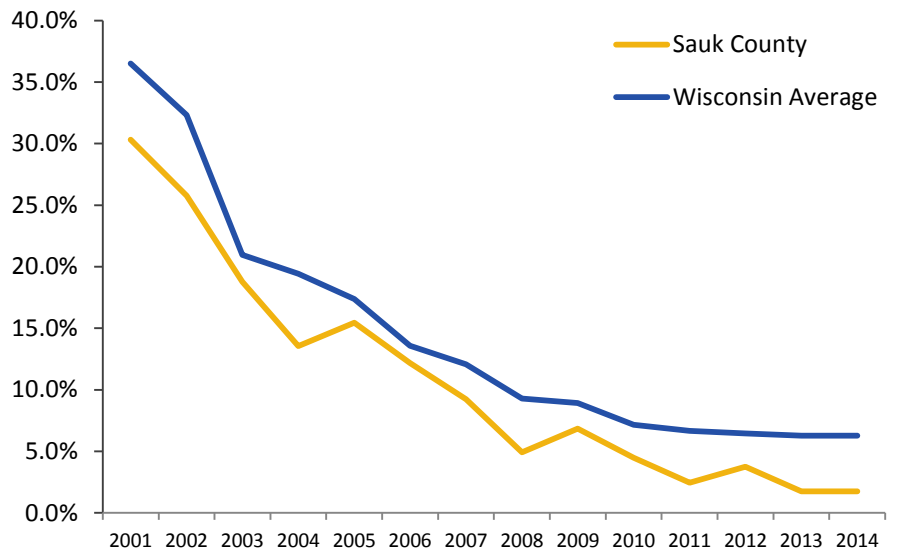
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

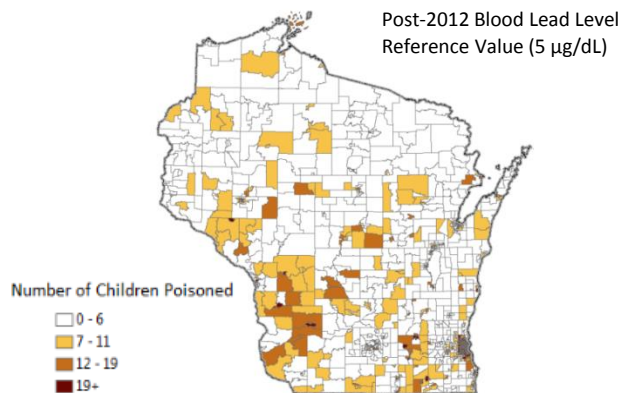
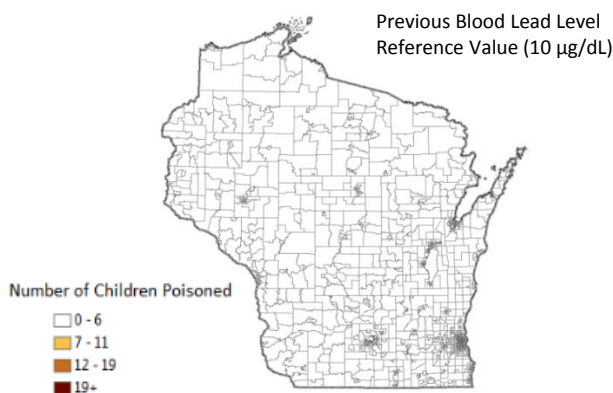
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES SAUK COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **5.7%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.8%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

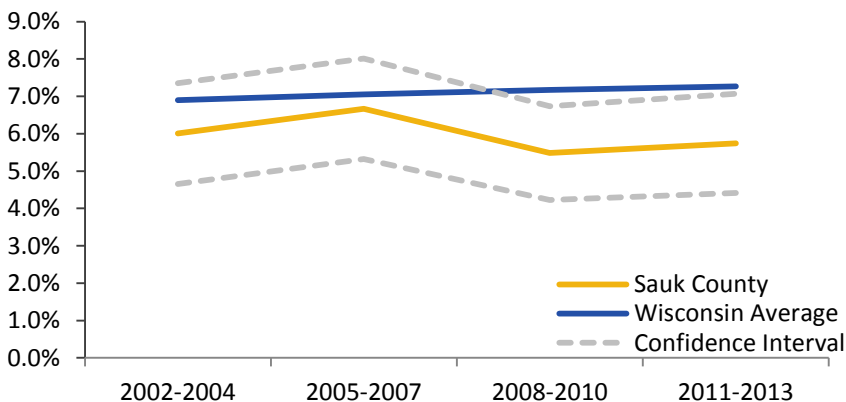
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES SAUK COUNTY

PRETERM BIRTH

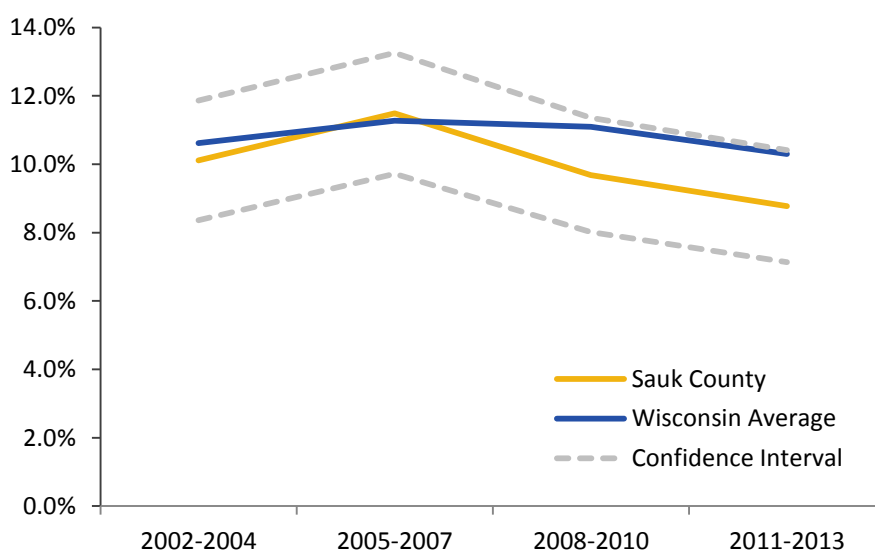
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

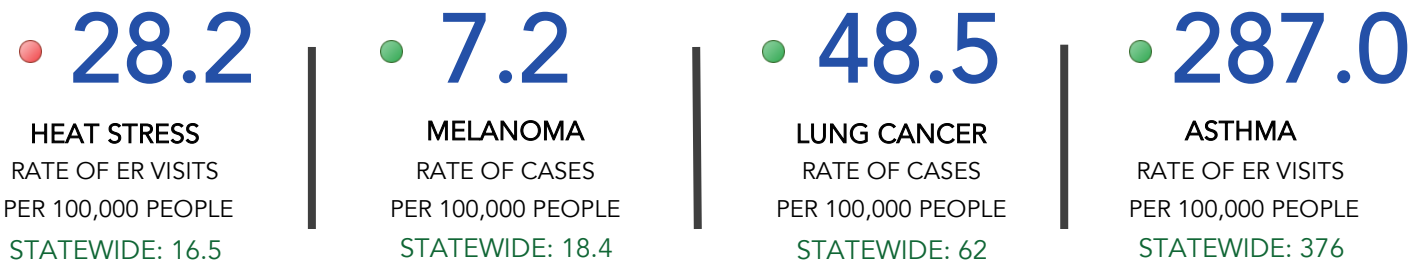
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS SAUK COUNTY

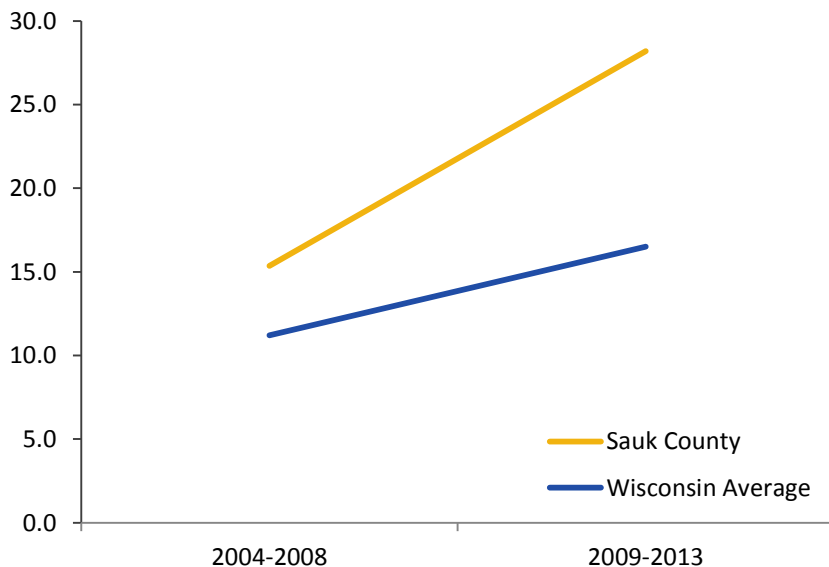
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



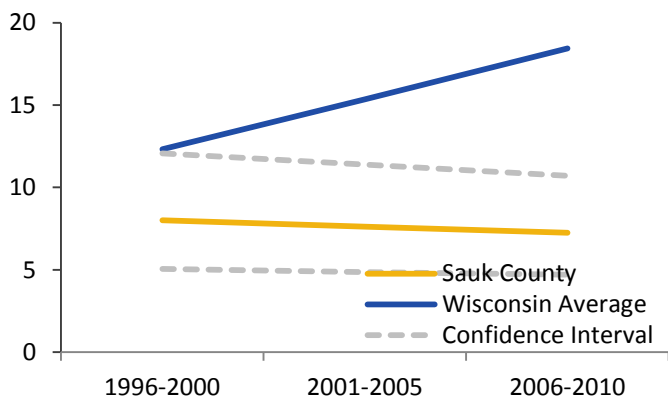


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



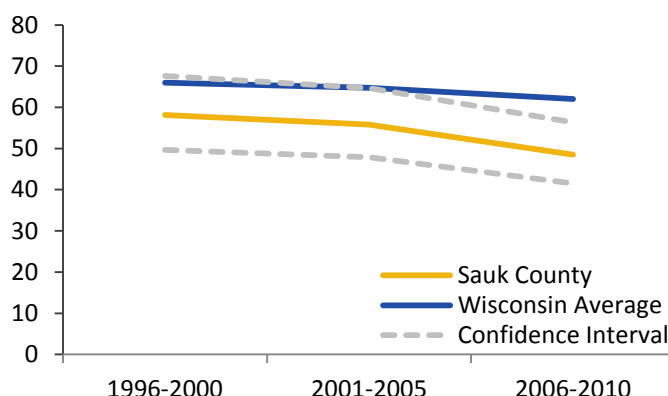
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



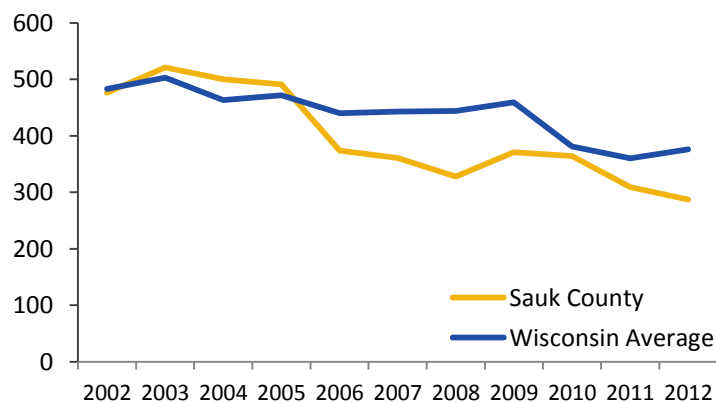
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

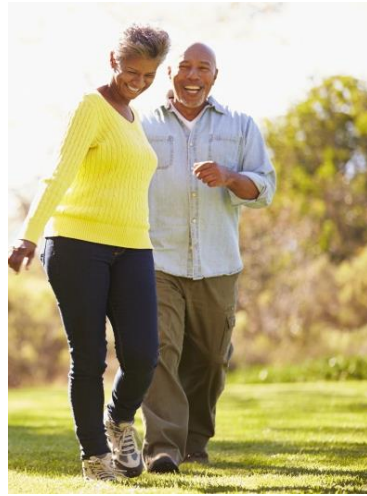
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



SAWYER COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

SAWYER COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.9 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.7

Childhood Lead Poisoning

● 0.0% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 7.8% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 23.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 25.8 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 68.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 677.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Due to small numbers, aggregated rates were calculated for this county.
Years displayed in this profile: Aggregated data from 2004-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY SAWYER COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

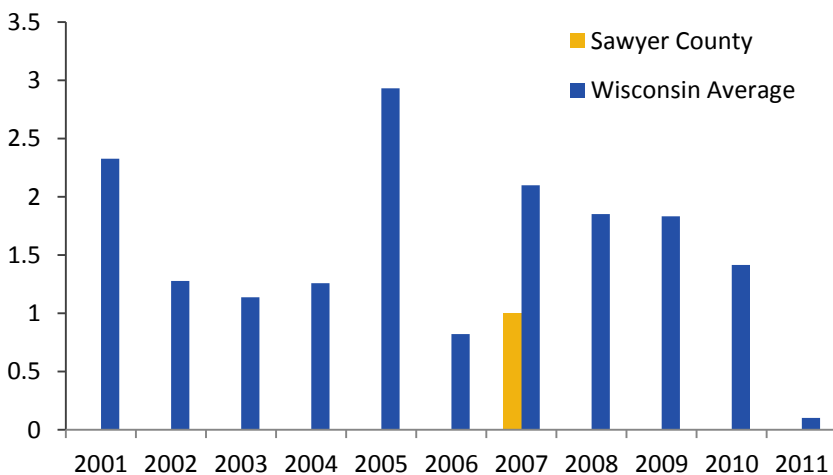
● 7.6

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

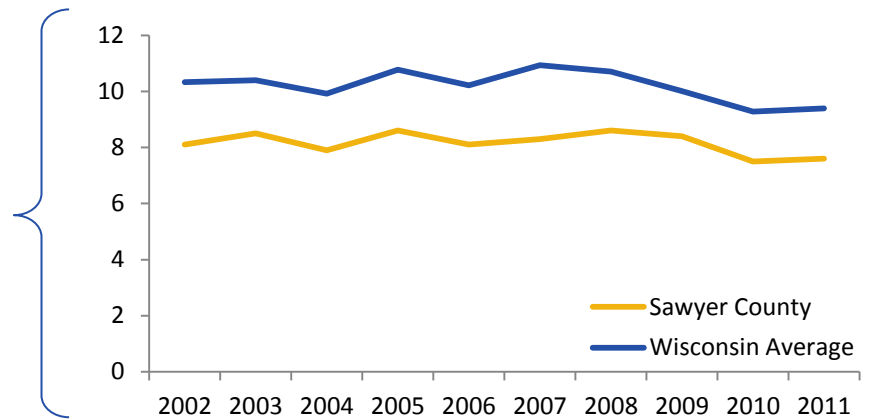
SAWYER COUNTY

PARTICULATE MATTER 2.5

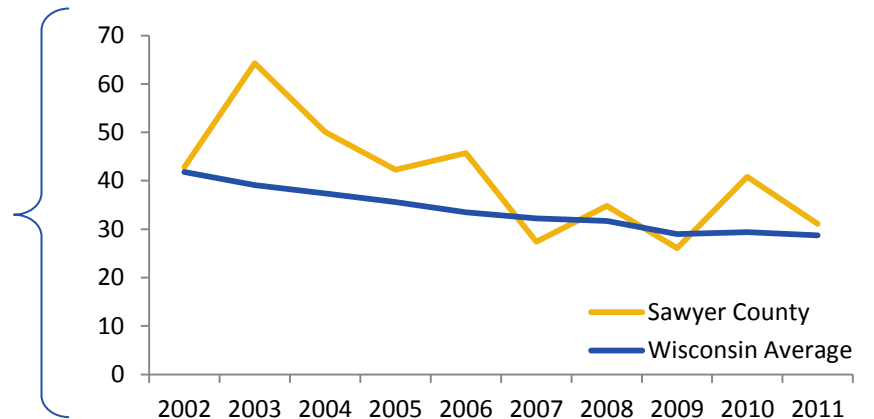
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

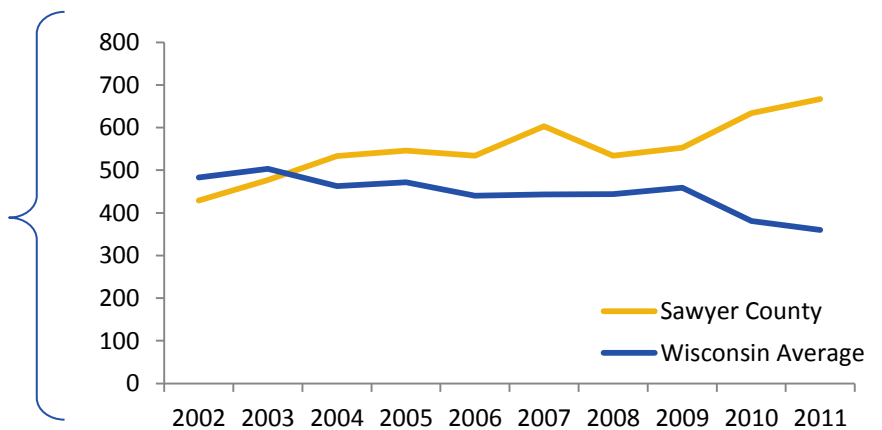
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



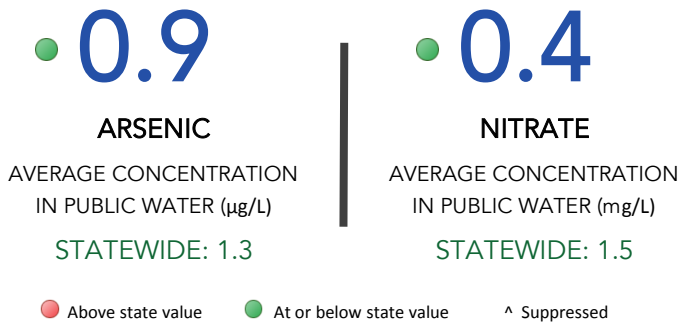
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY SAWYER COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

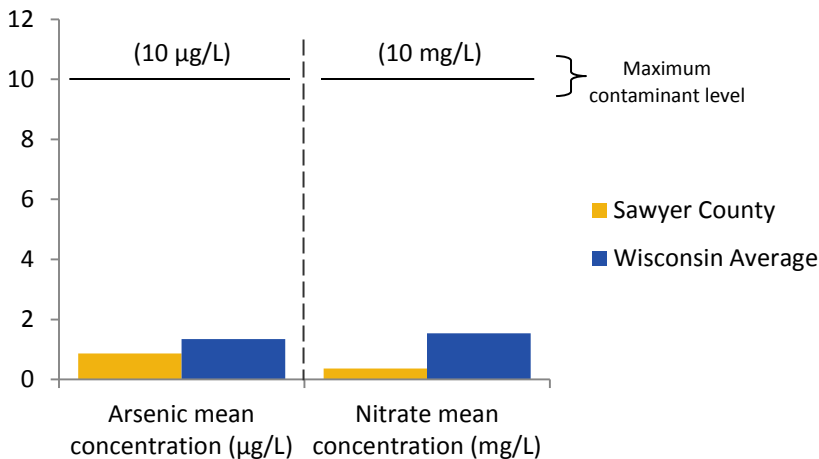
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY SAWYER COUNTY

PRIVATE DRINKING WATER

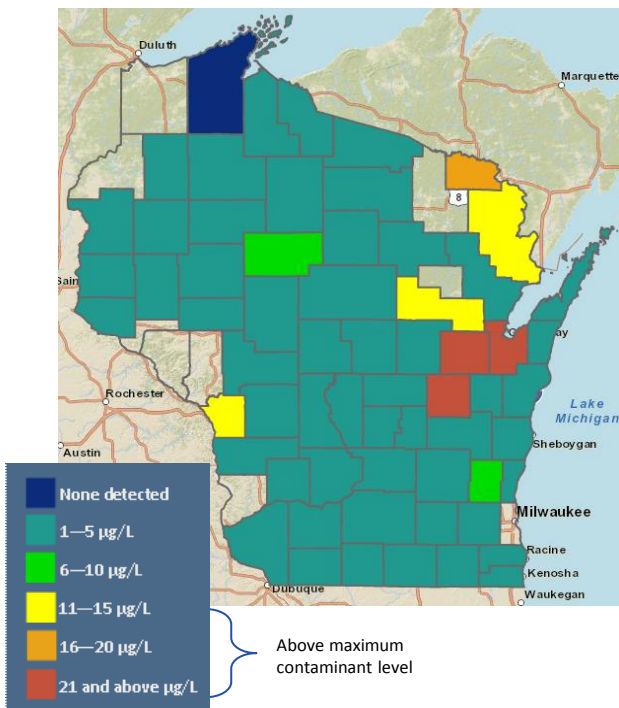
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

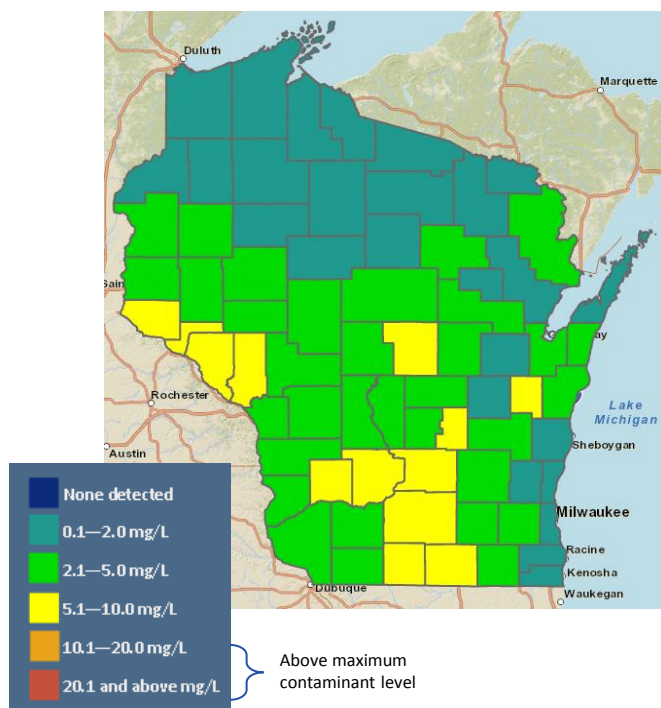
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS SAWYER COUNTY

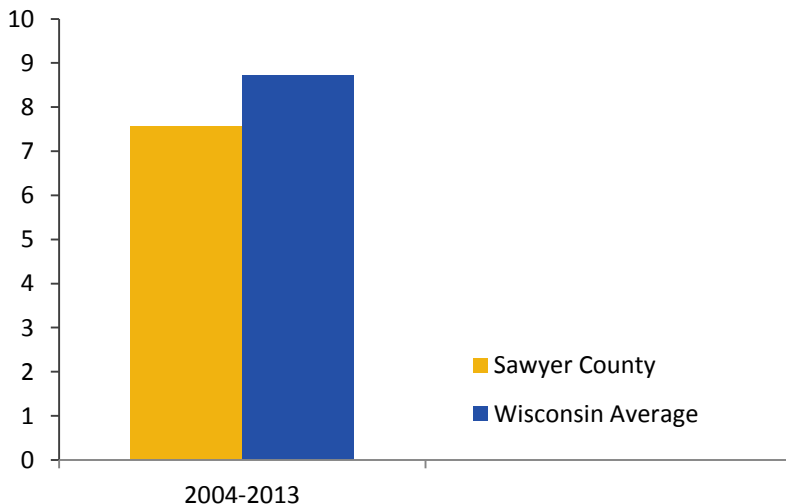
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.5**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.7

● **0.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

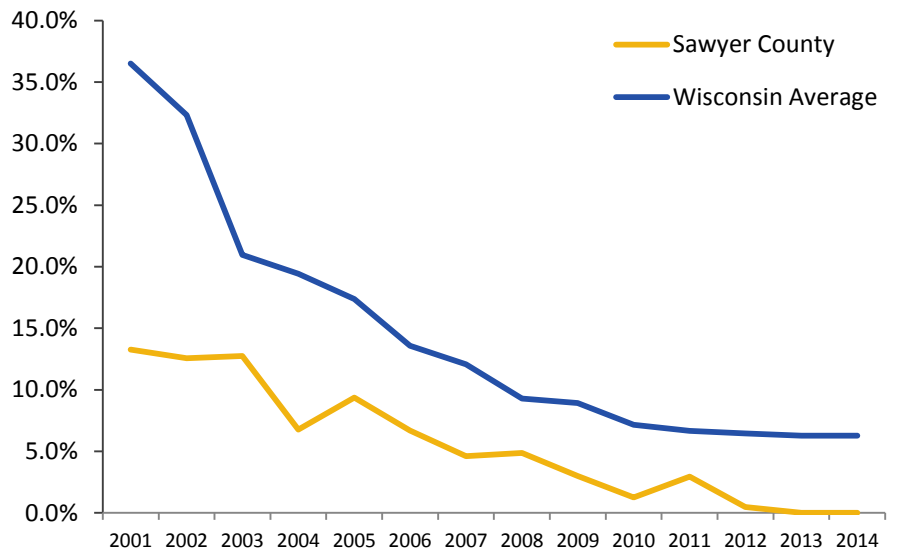
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

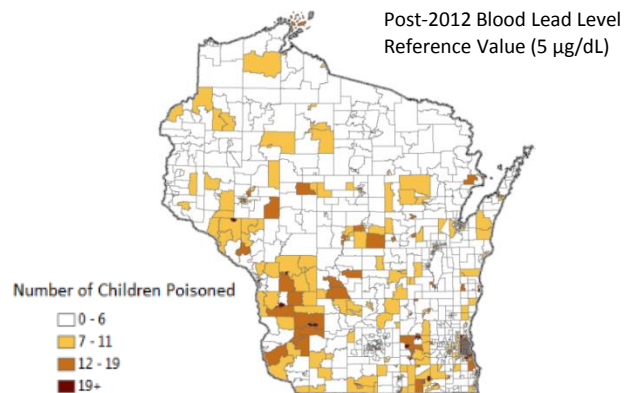
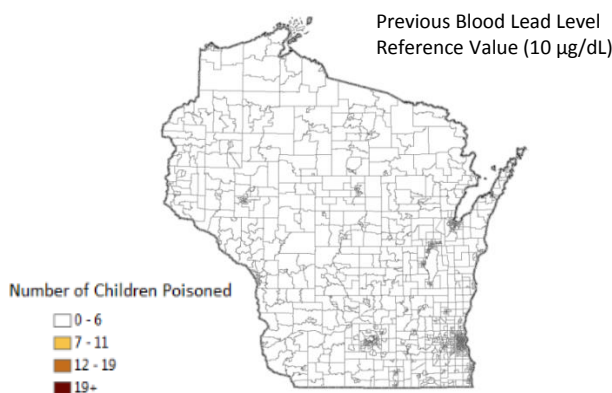
CHILDHOOD LEAD POISONING

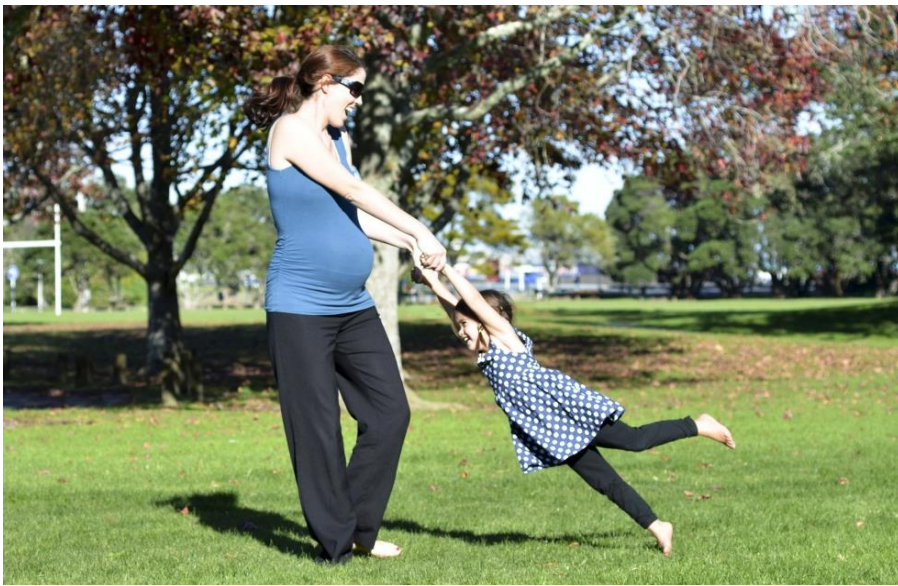
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

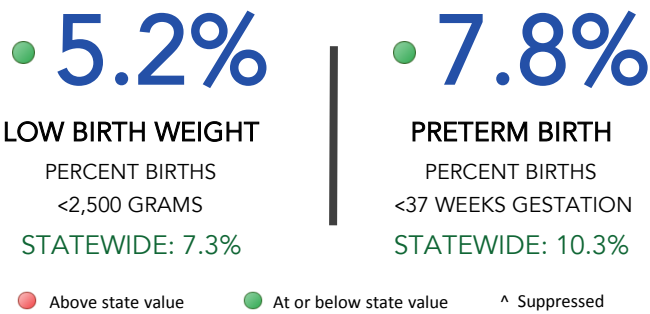
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES SAWYER COUNTY

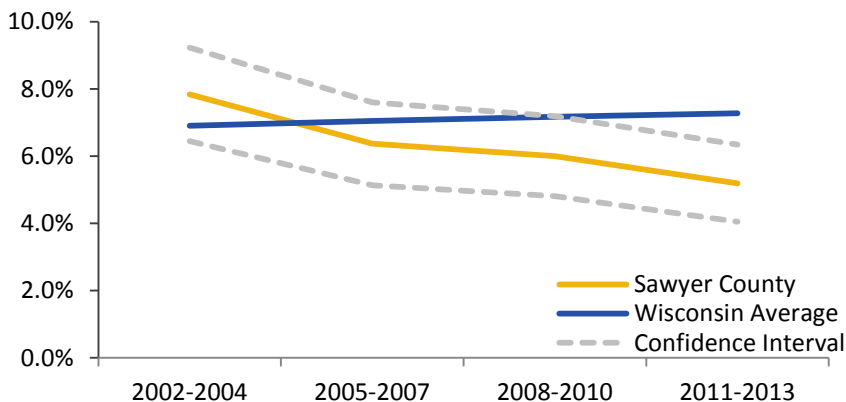
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES SAWYER COUNTY

PRETERM BIRTH

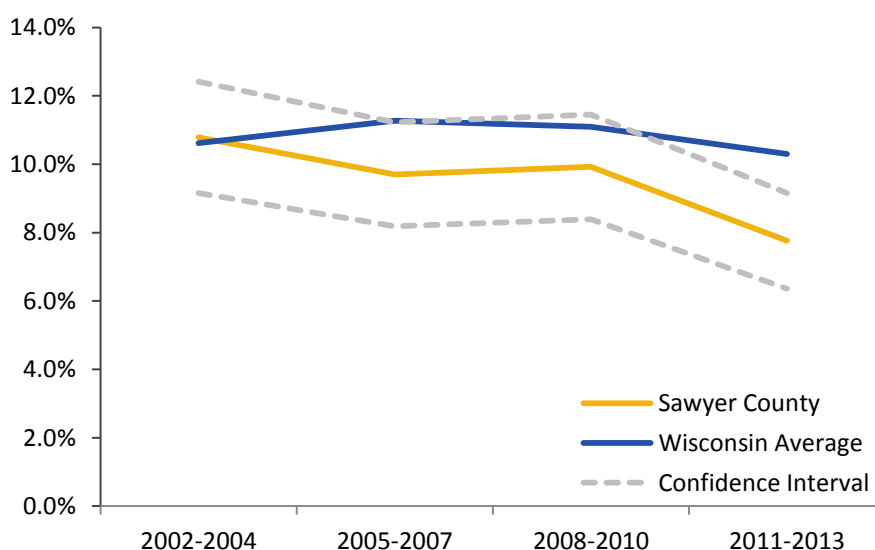
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS SAWYER COUNTY

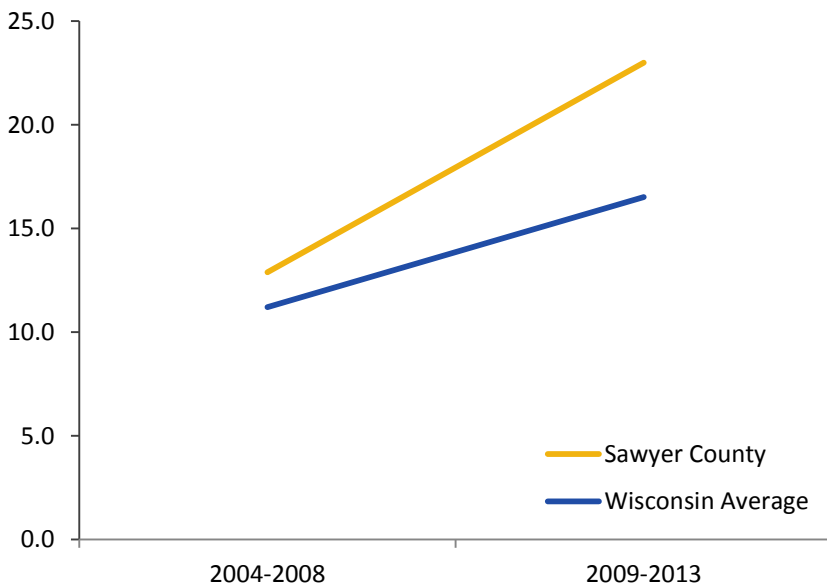
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 23.0</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 25.8</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 68.3</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 677.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



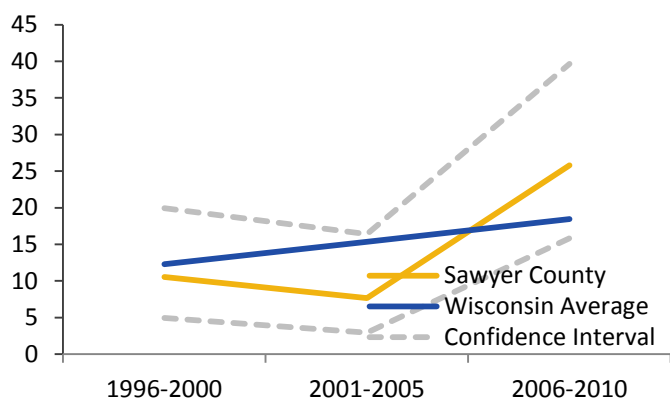


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



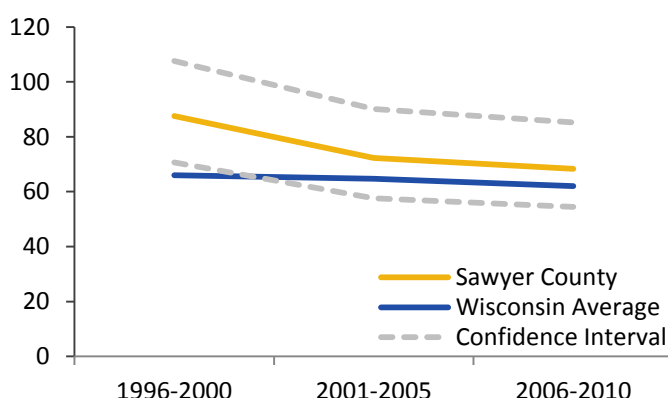
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



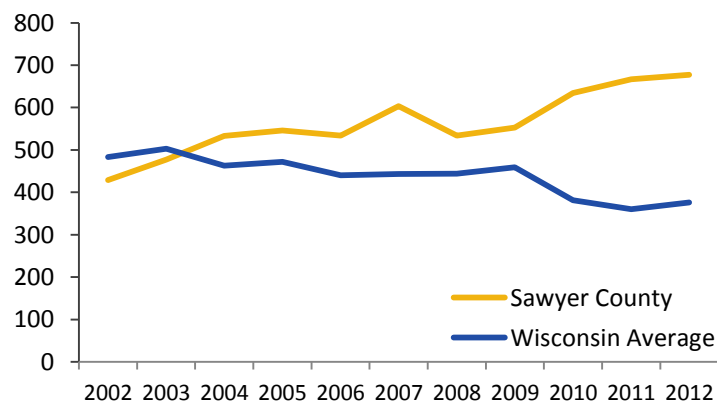
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data aggregated from 2004-2013 displayed on the dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. Due to small numbers, aggregated rates were calculated for this county.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



SHAWANO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

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SHAWANO COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 6.2 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 2.3 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 15.3 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 3.6% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 28.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 20.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 57.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 422.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY SHAWANO COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

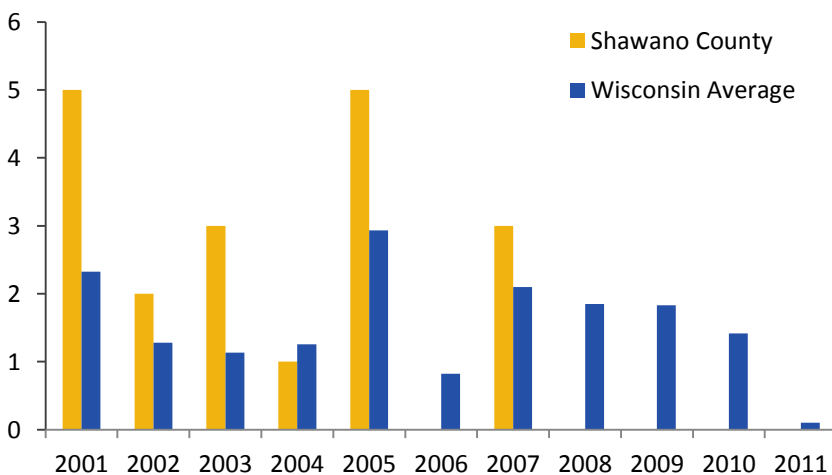
● 9.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

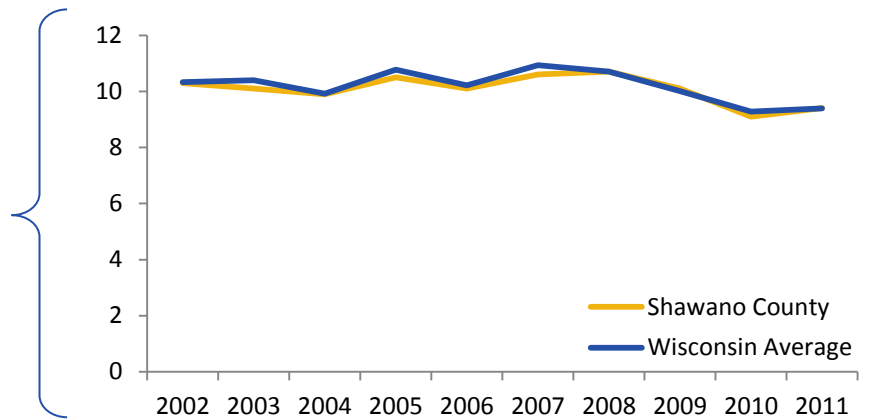
SHAWANO COUNTY

PARTICULATE MATTER 2.5

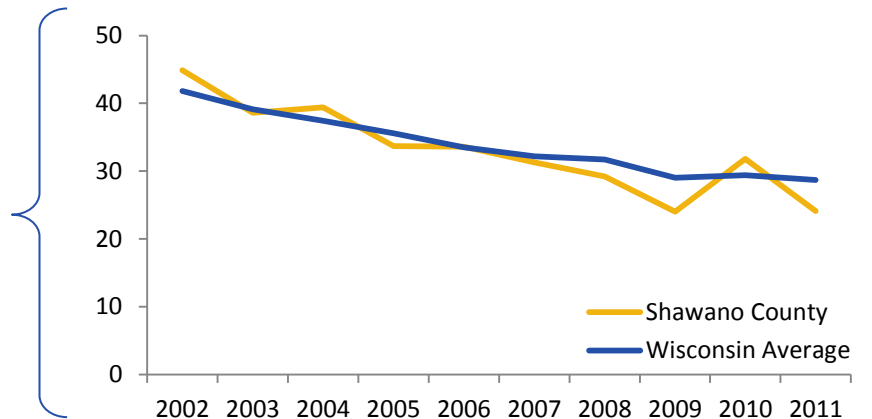
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

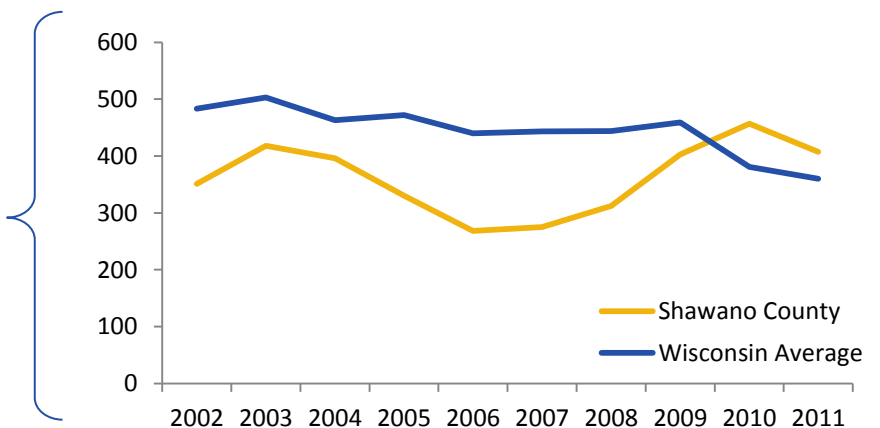
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



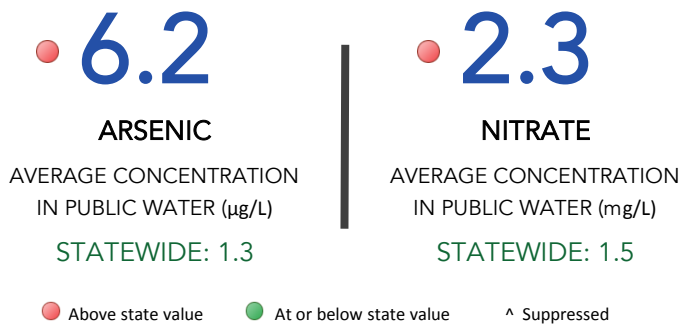
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY SHAWANO COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

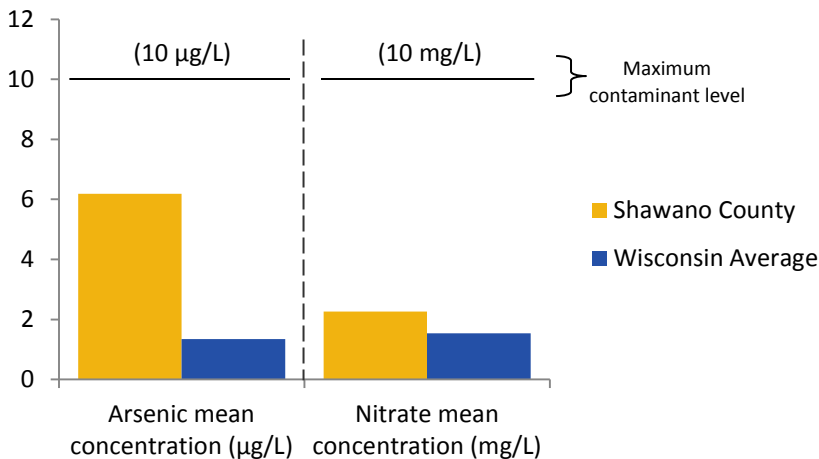
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY SHAWANO COUNTY

PRIVATE DRINKING WATER

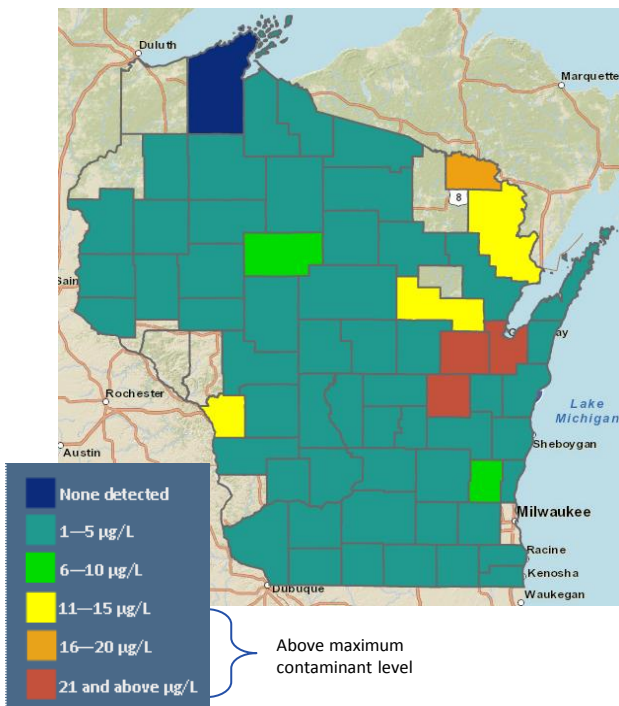
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

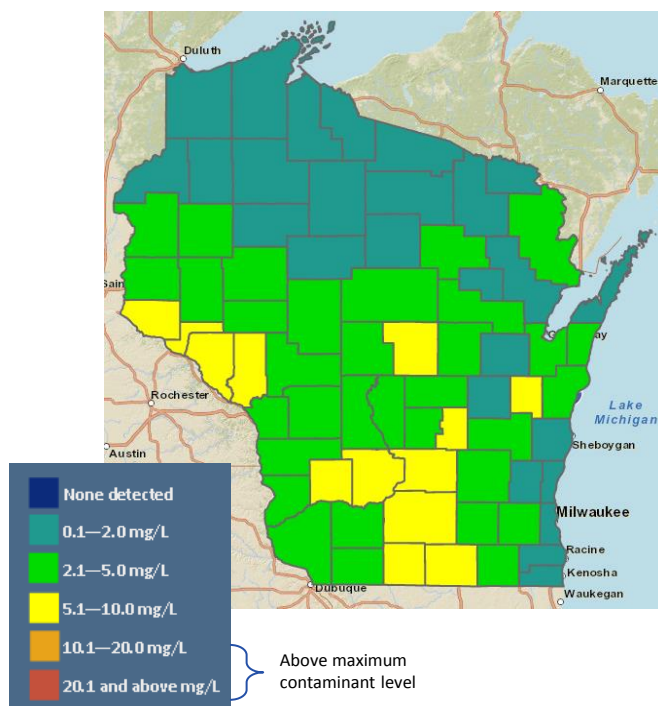
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS SHAWANO COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **15.3**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **3.6%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

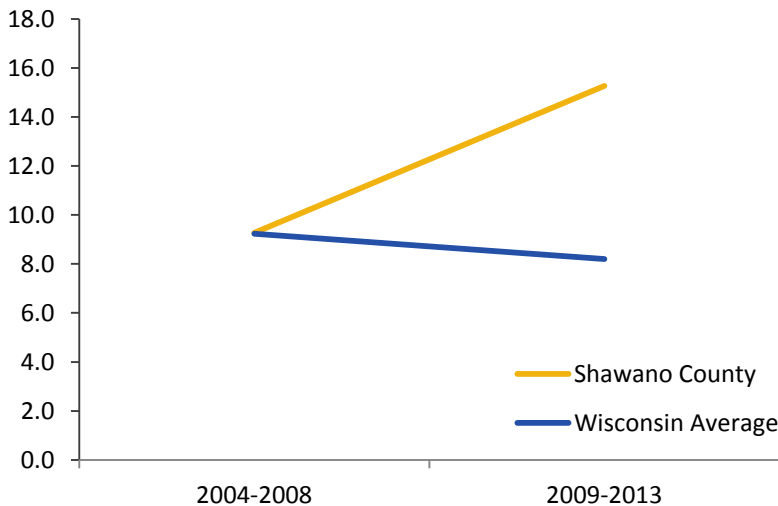
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

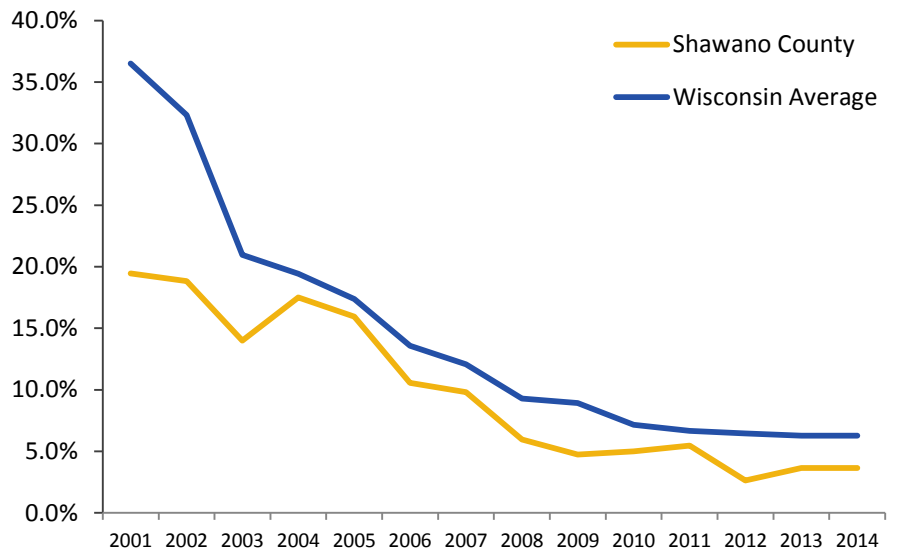
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

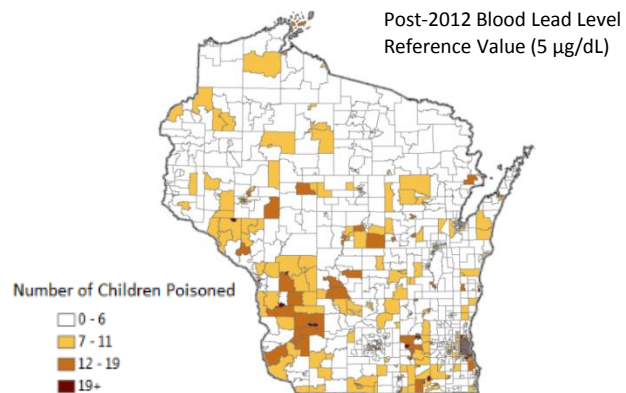
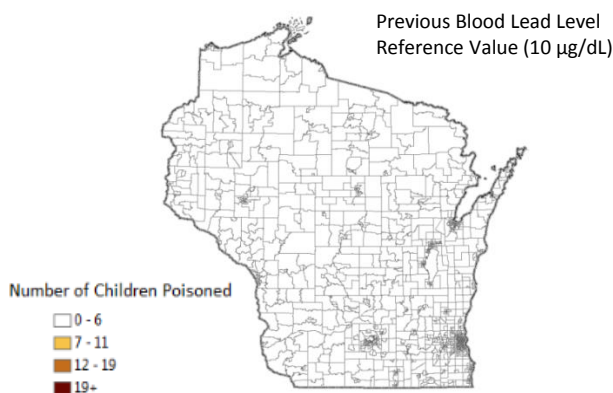
CHILDHOOD LEAD POISONING

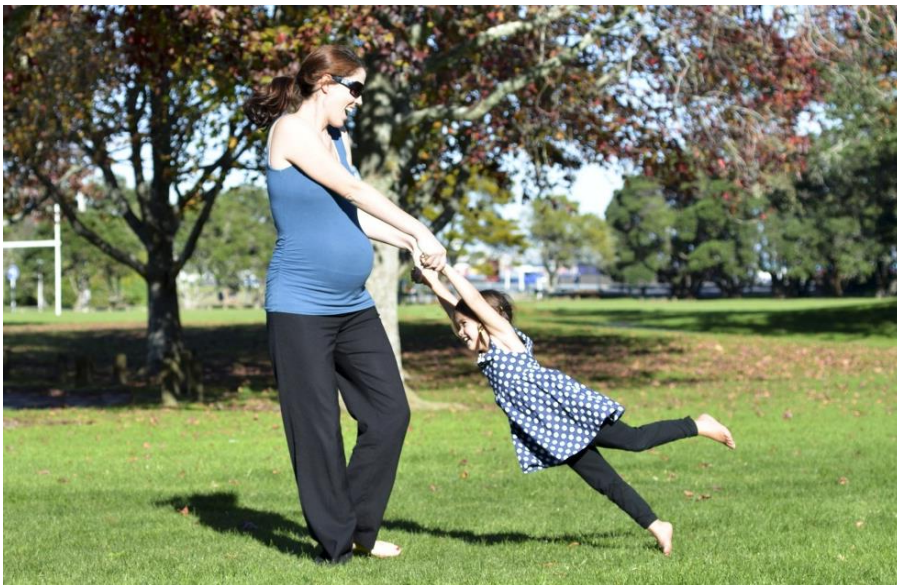
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

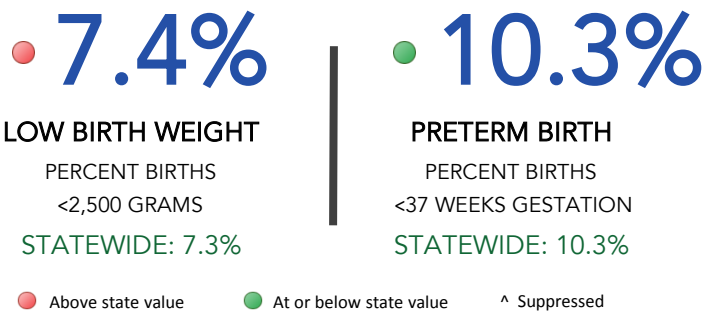
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES SHAWANO COUNTY

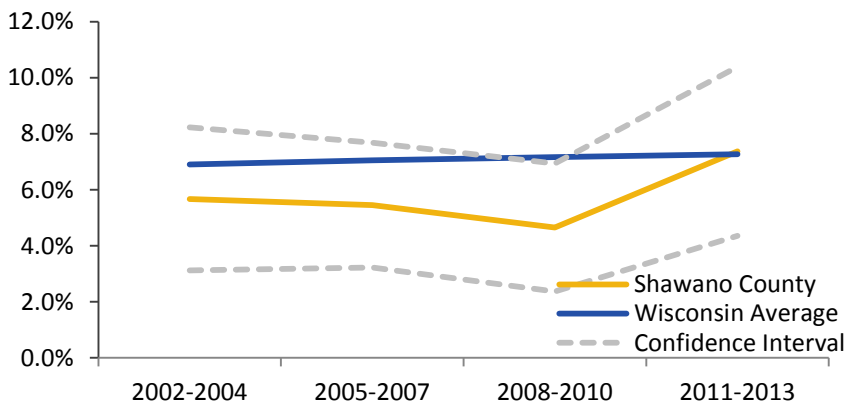
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES SHAWANO COUNTY

PRETERM BIRTH

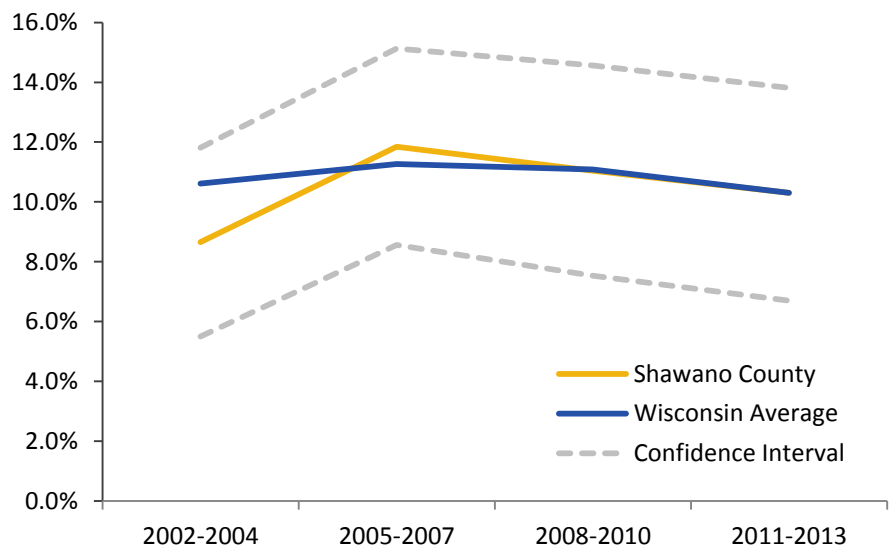
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS SHAWANO COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **28.2**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **20.6**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **57.4**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

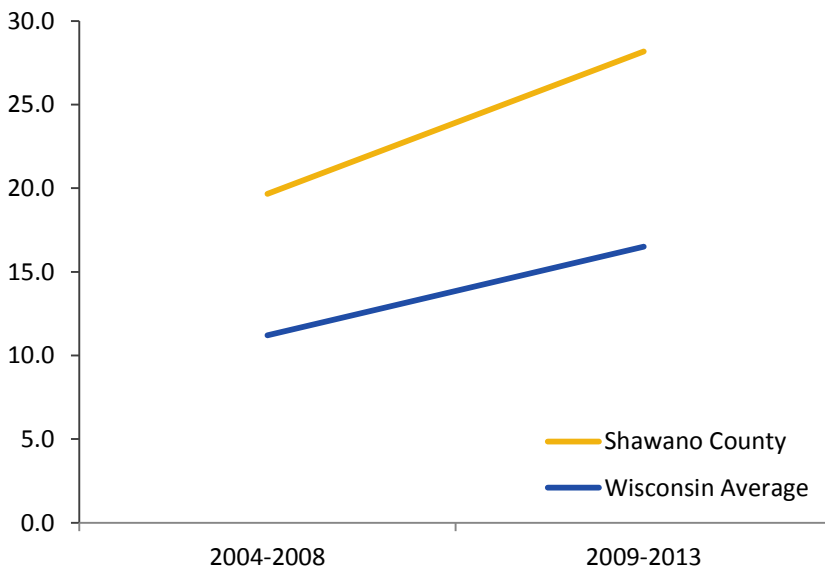
● **422.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



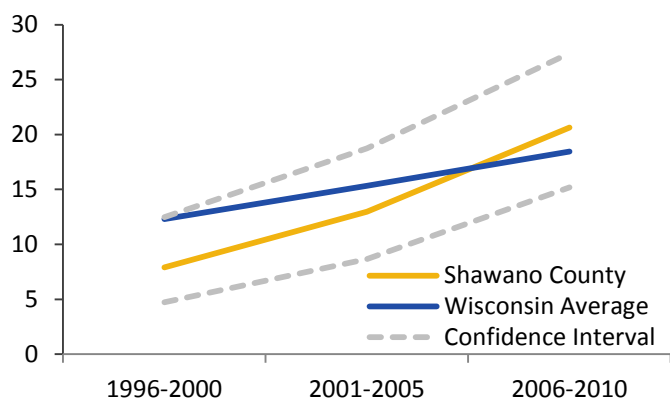


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



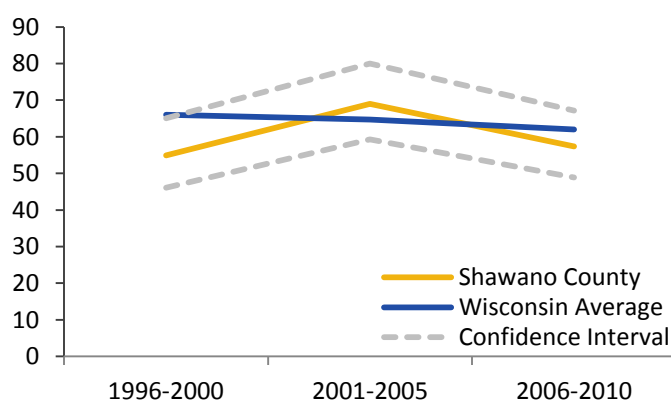
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



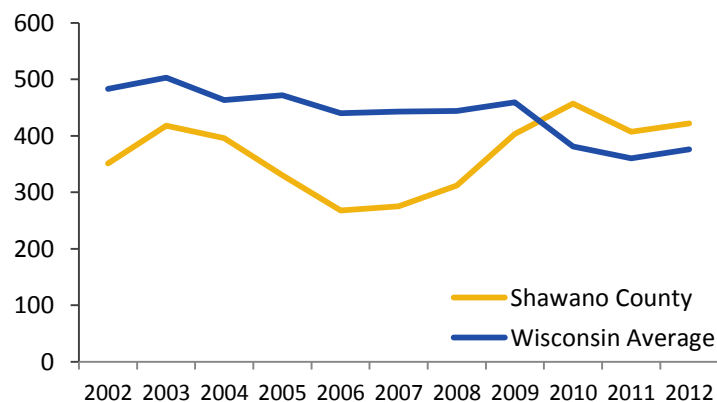
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



SHEBOYGAN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

SHEBOYGAN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 9.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.7 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.3

Nitrate

● 0.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 11.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 8.9% | Percent with blood lead $\geq 5 \mu\text{g/L}$
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 19.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 22.2 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 57.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 227.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY SHEBOYGAN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 9.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

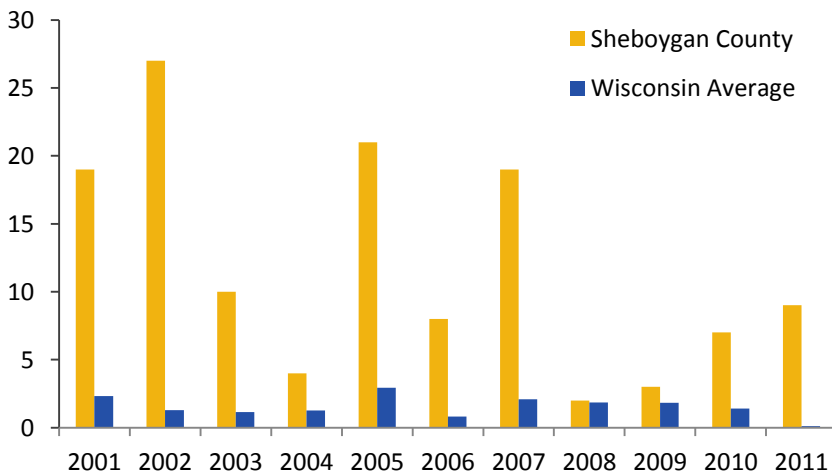
● 10.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

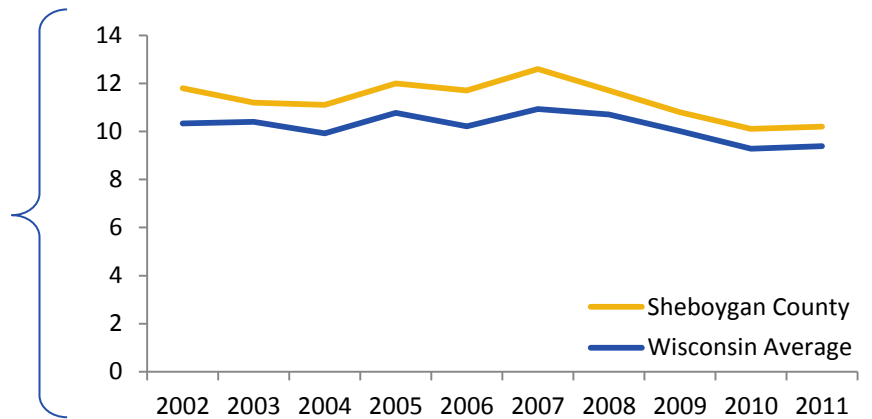
SHEBOYGAN COUNTY

PARTICULATE MATTER 2.5

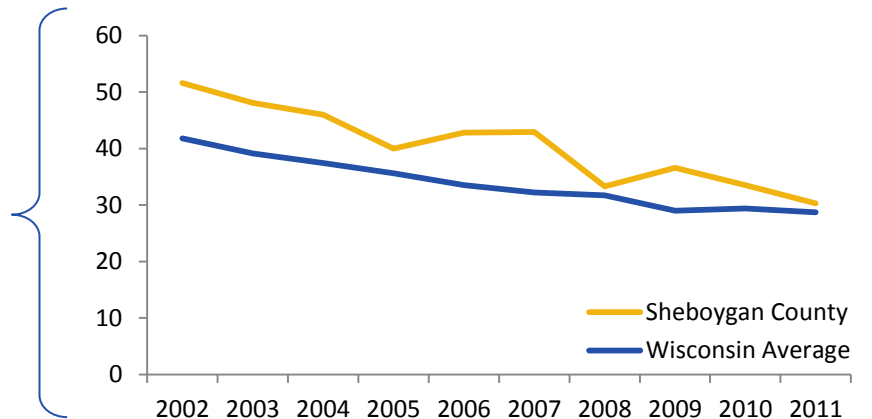
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

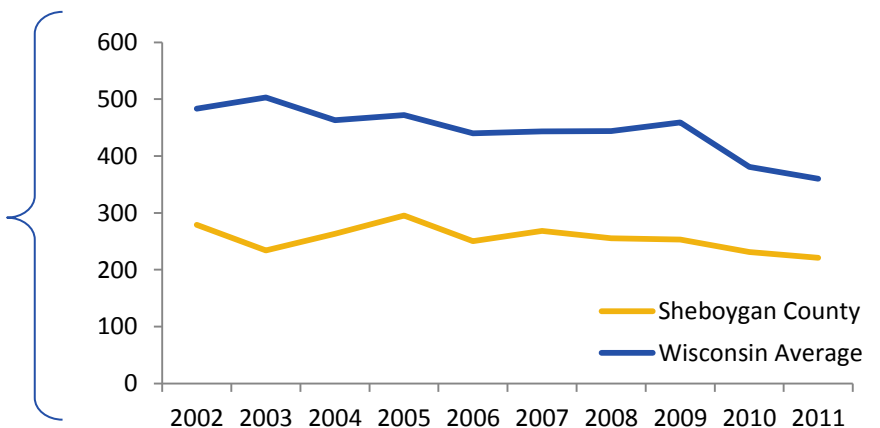
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



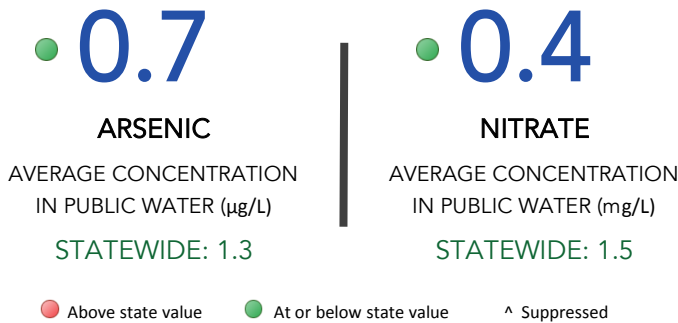
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY SHEBOYGAN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

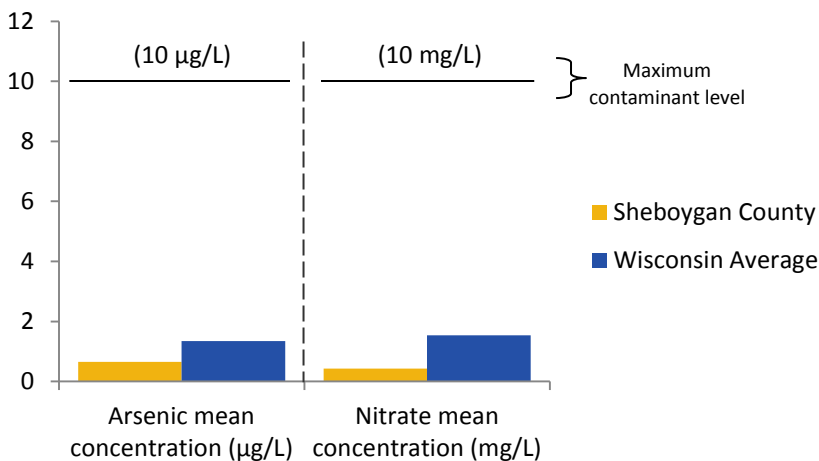
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY SHEBOYGAN COUNTY

PRIVATE DRINKING WATER

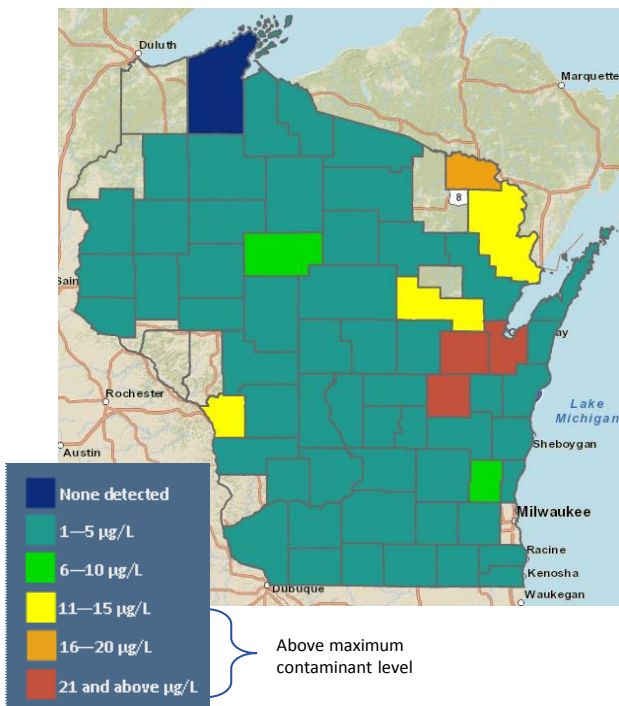
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

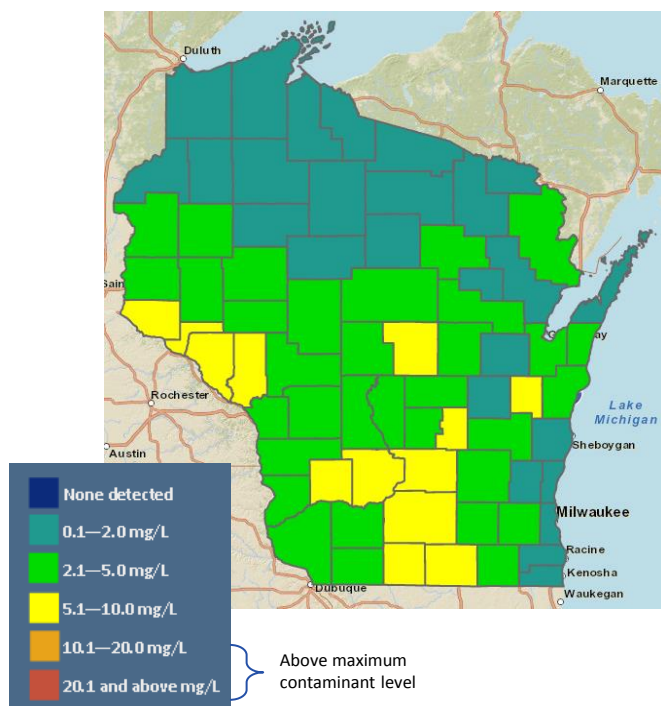
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

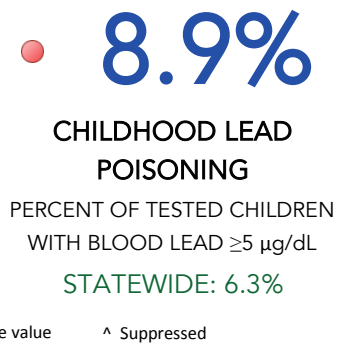
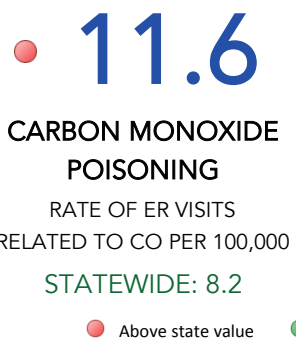


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

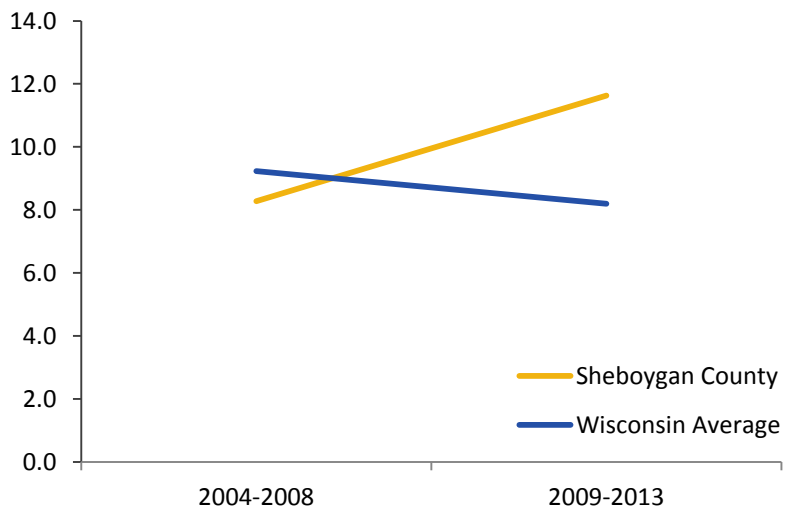


HOME HAZARDS SHEBOYGAN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht 



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

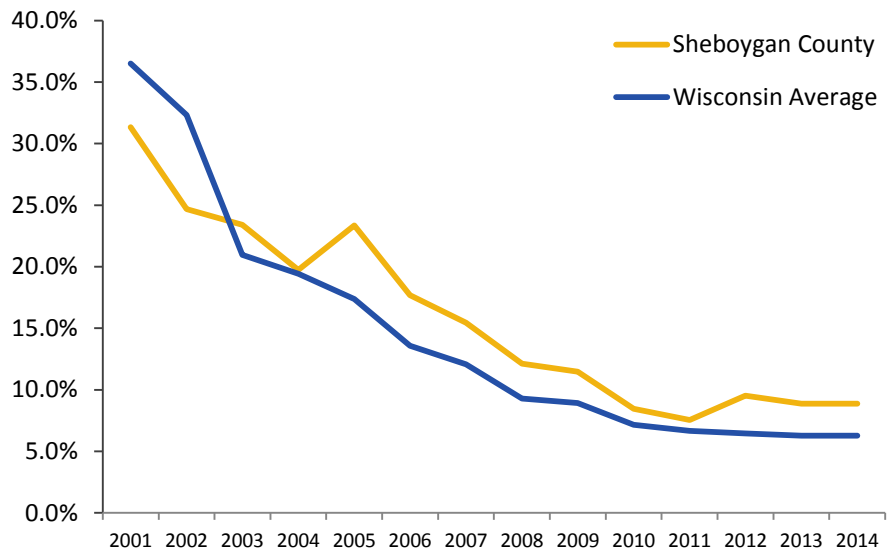
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

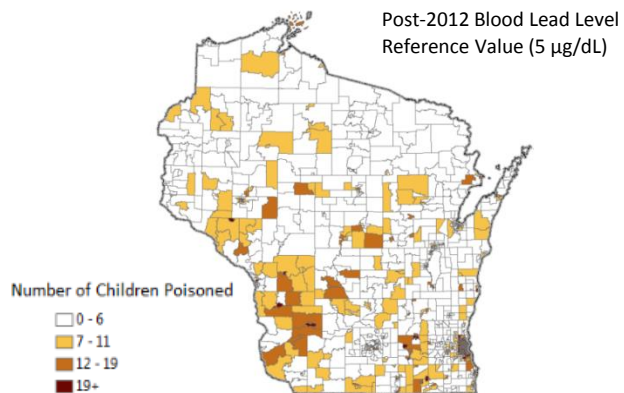
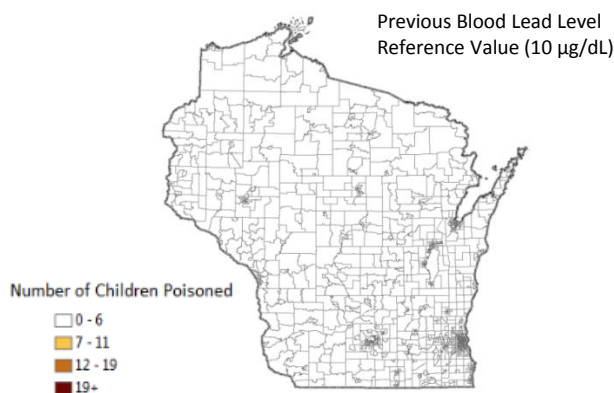
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES SHEBOYGAN COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **5.2%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.7%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

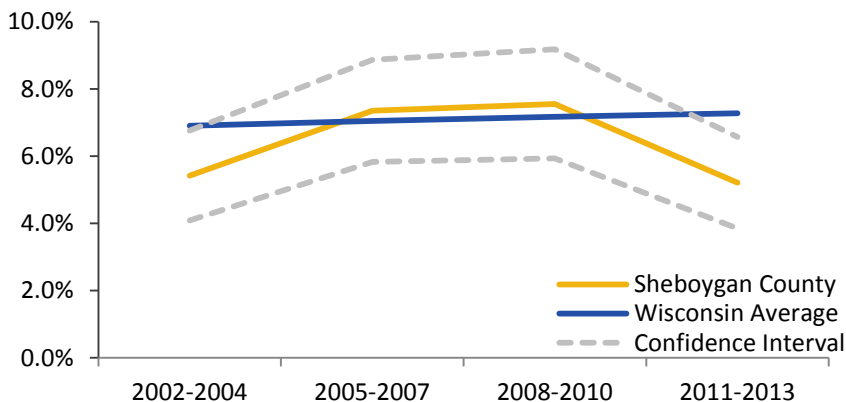
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES SHEBOYGAN COUNTY

PRETERM BIRTH

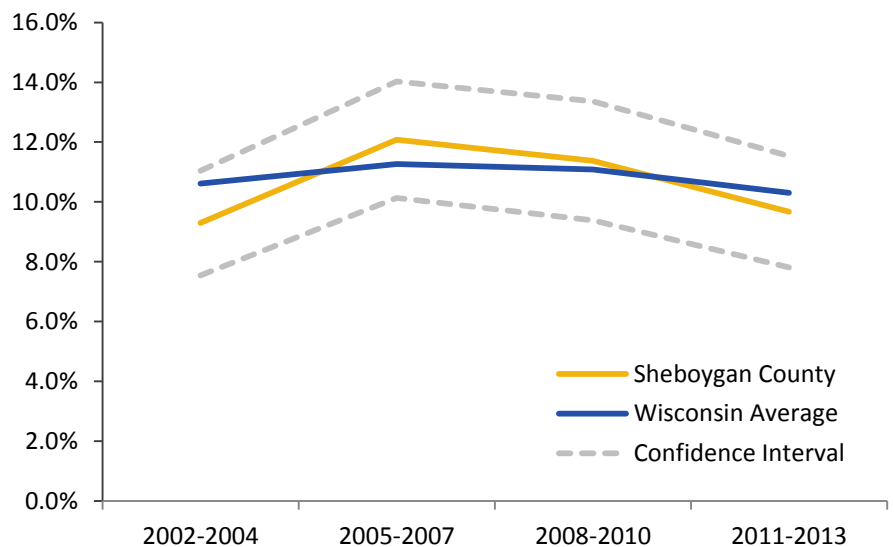
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS SHEBOYGAN COUNTY

Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

● **19.8**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

● **22.2**

MELANOMA
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 18.4

● **57.4**

LUNG CANCER
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 62

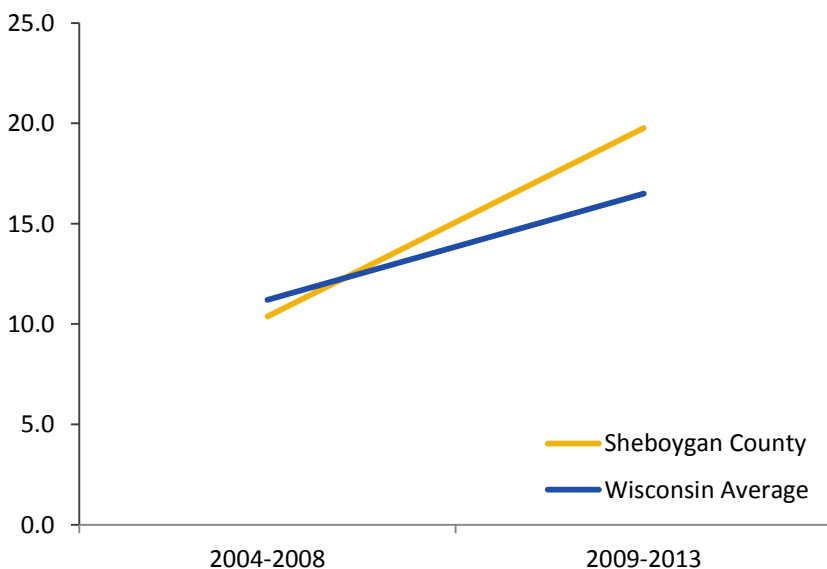
● **227.0**

ASTHMA
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 376

● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



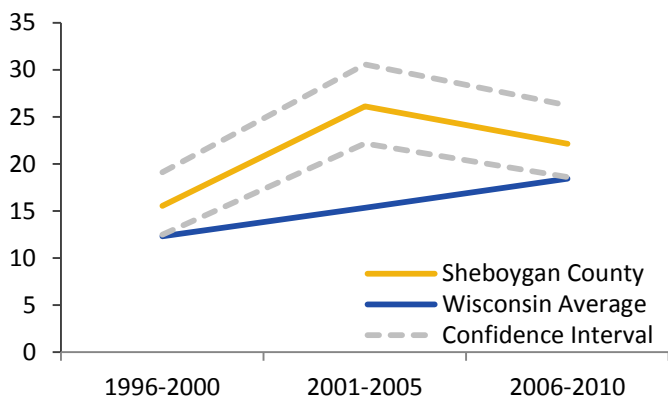


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



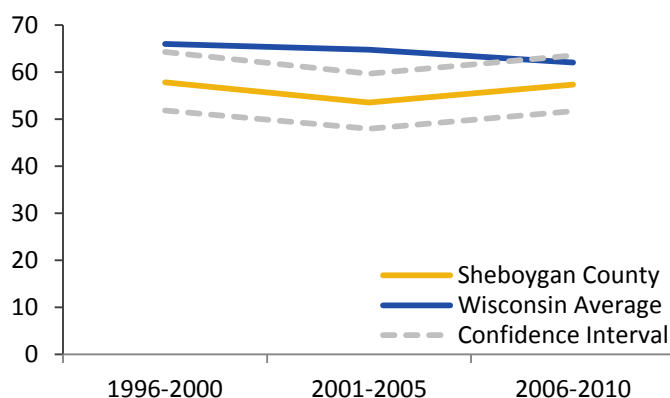
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



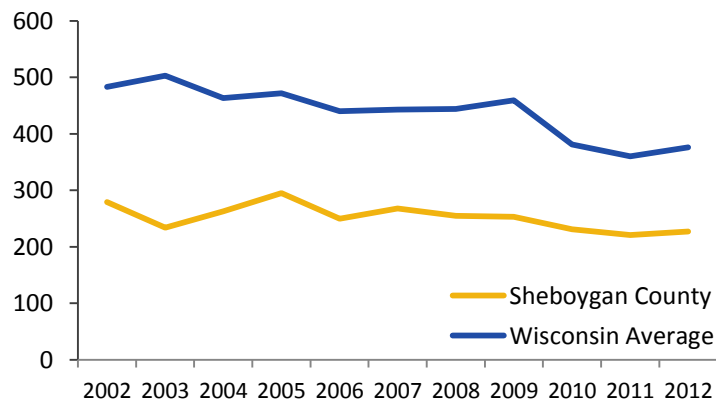
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



ST.CROIX COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

ST. CROIX COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

1.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

0.7 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

3.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

6.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

0.7% | Percent with blood lead ≥ 5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

6.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

8.0% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

17.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

11.4 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

34.9 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

239.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY ST.CROIX COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

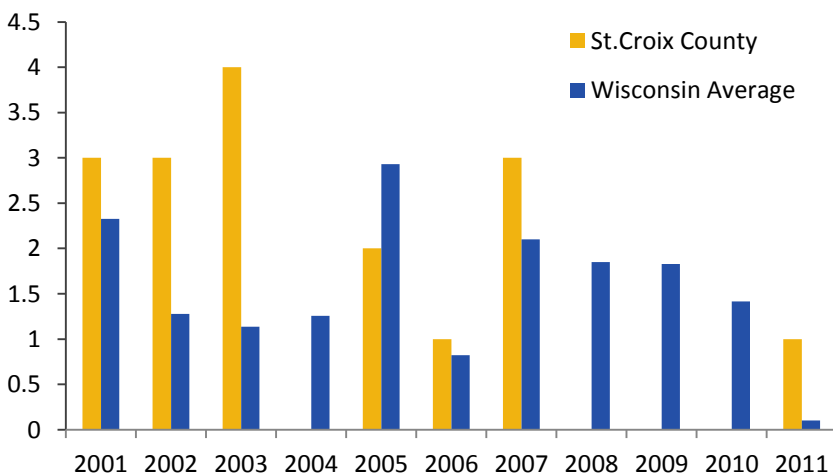
● **1.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **9.9**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

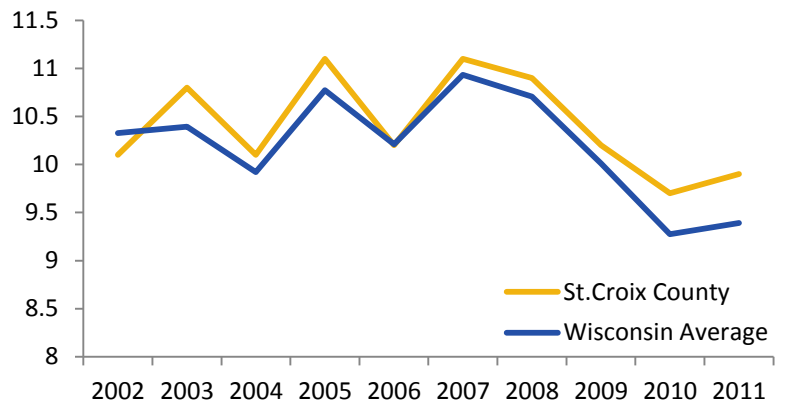
ST. CROIX COUNTY

PARTICULATE MATTER 2.5

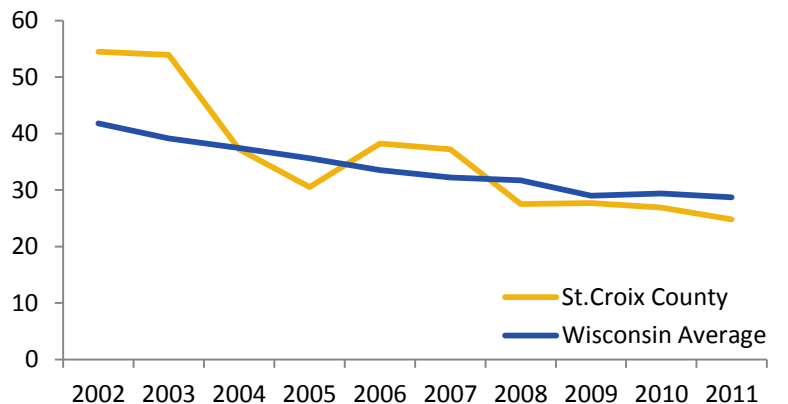
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

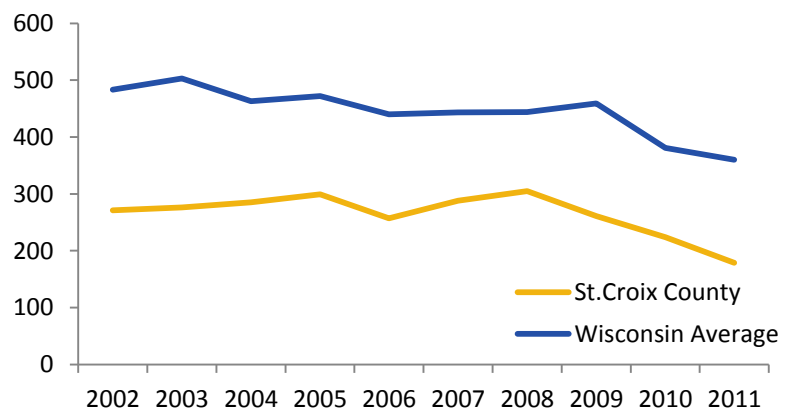
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



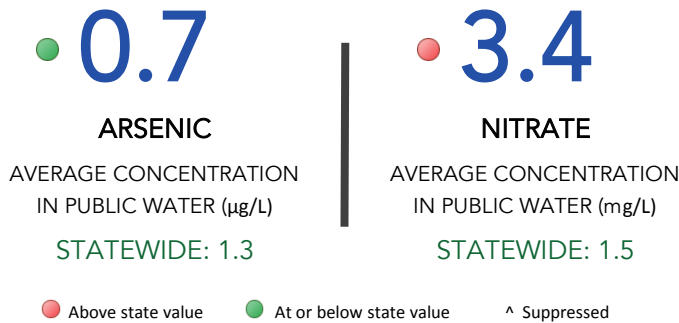
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY ST.CROIX COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

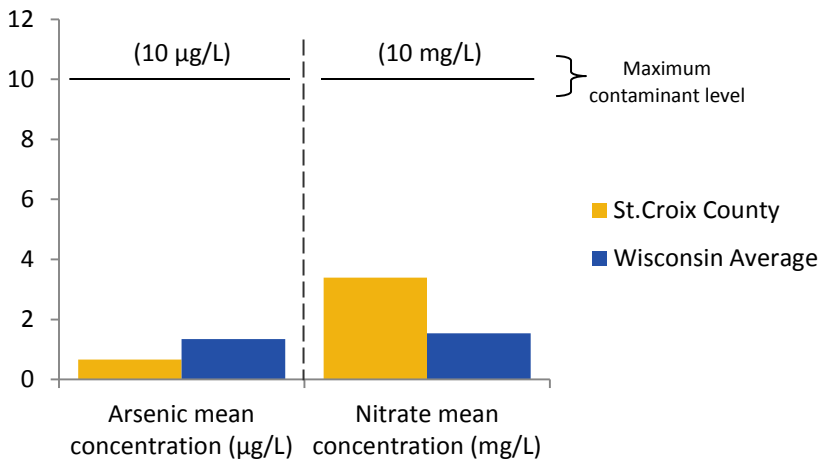
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY ST. CROIX COUNTY

PRIVATE DRINKING WATER

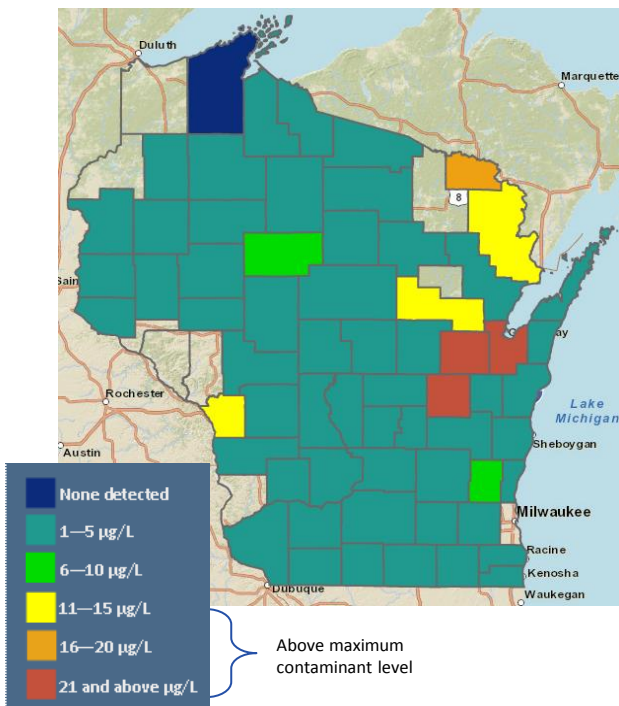
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

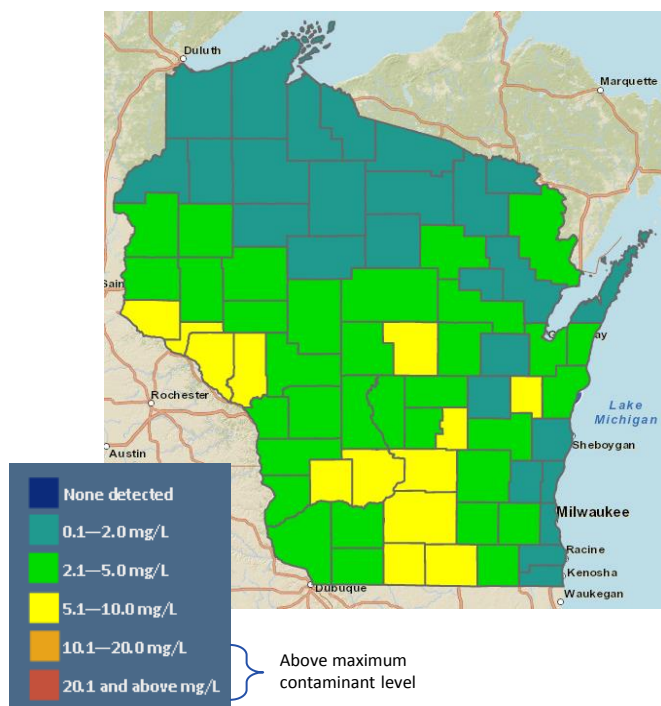
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS ST.CROIX COUNTY

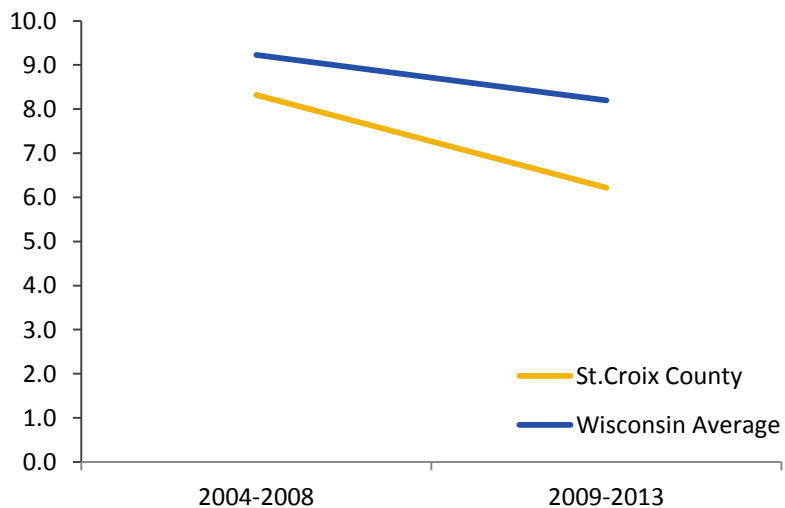
Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.2**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2

● **0.7%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$
 STATEWIDE: 6.3%

● Above state value ● At or below state value ▲ Suppressed

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

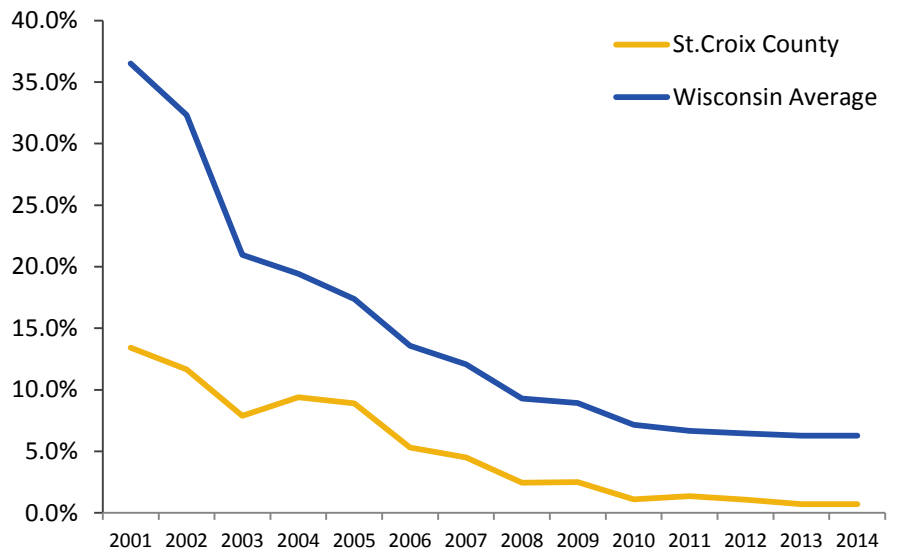
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

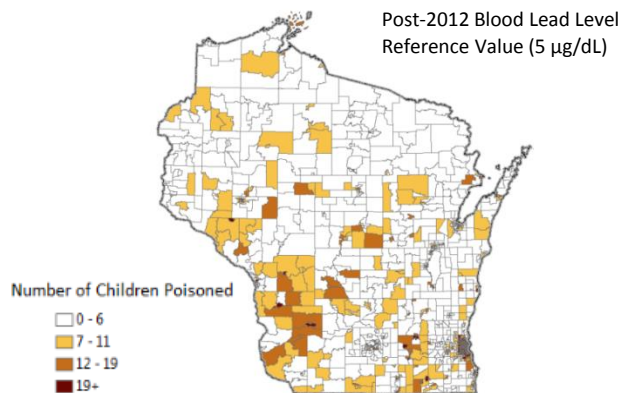
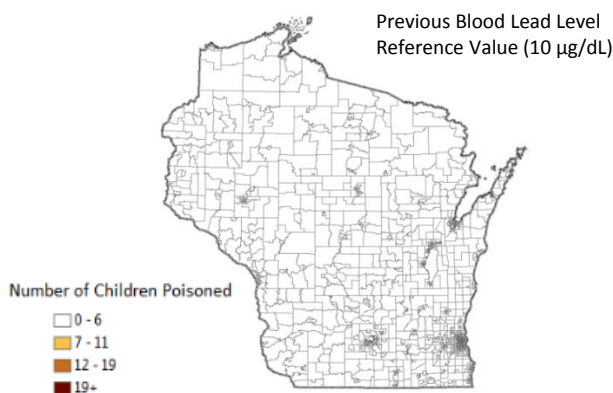
CHILDHOOD LEAD POISONING

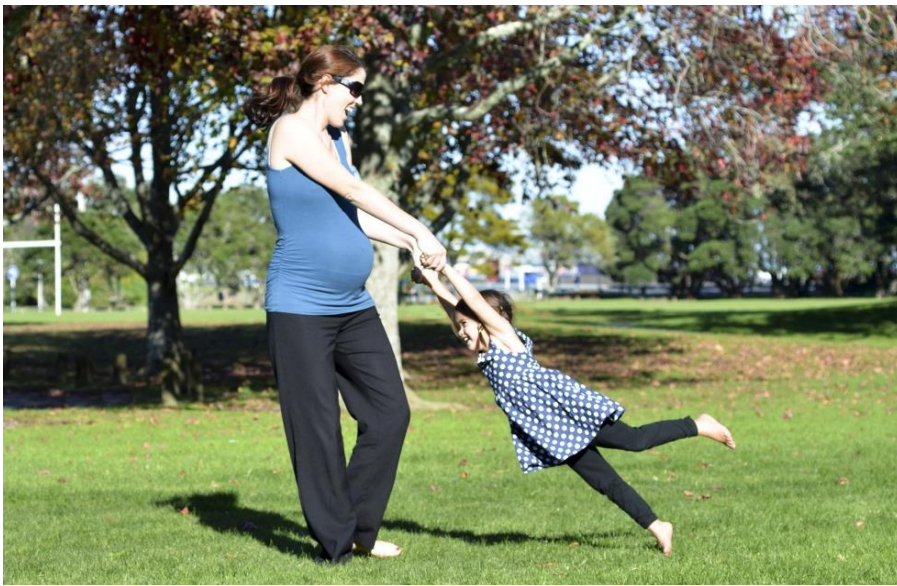
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES ST.CROIX COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.7%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.0%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

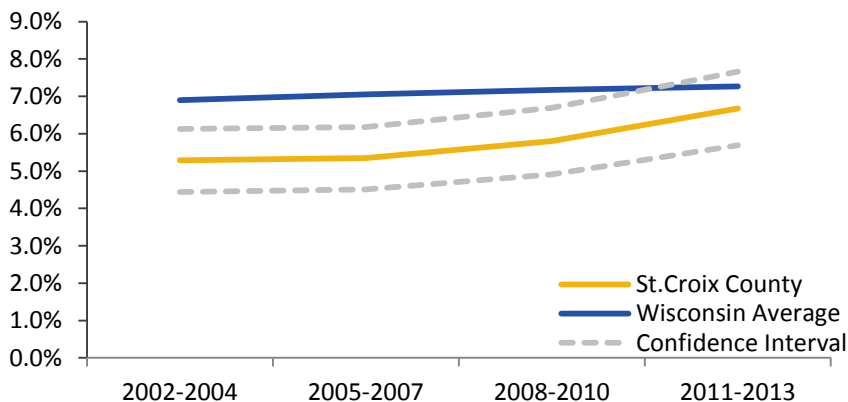
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

ST. CROIX COUNTY

PRETERM BIRTH

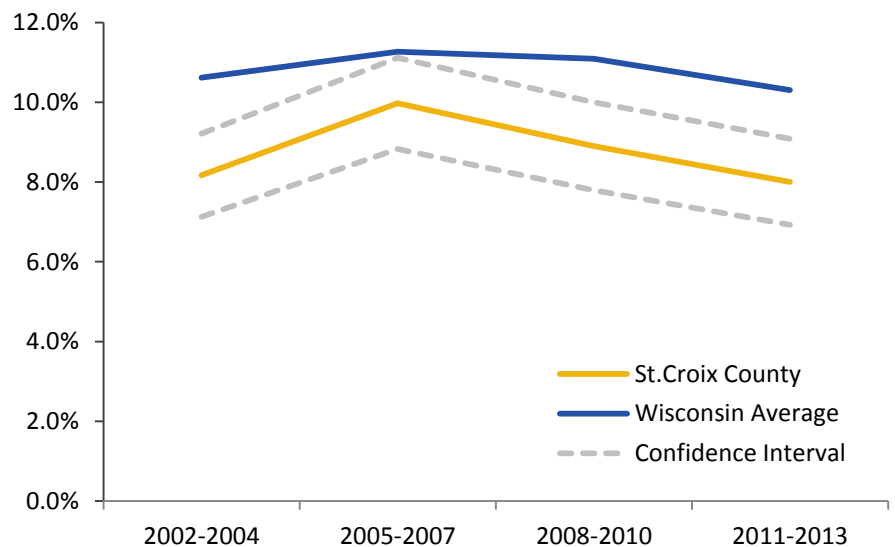
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS ST.CROIX COUNTY

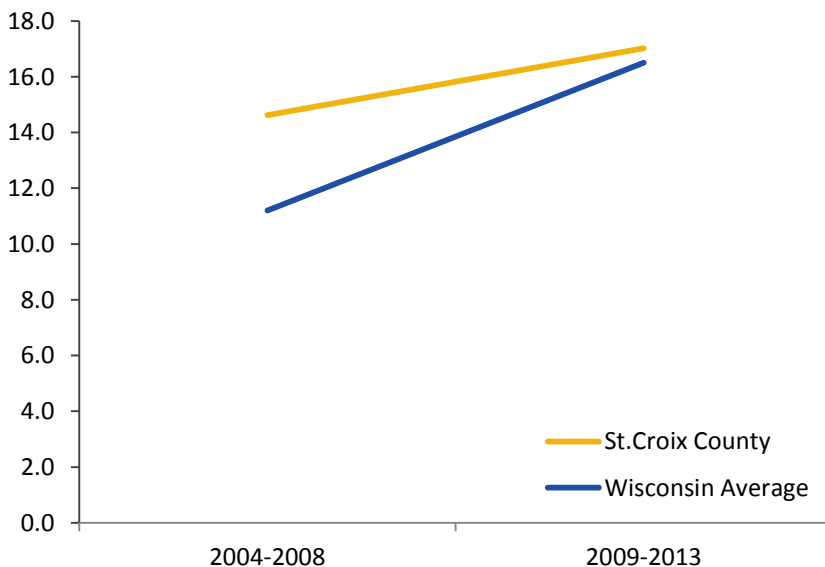
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 17.0</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 11.4</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 34.9</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 239.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



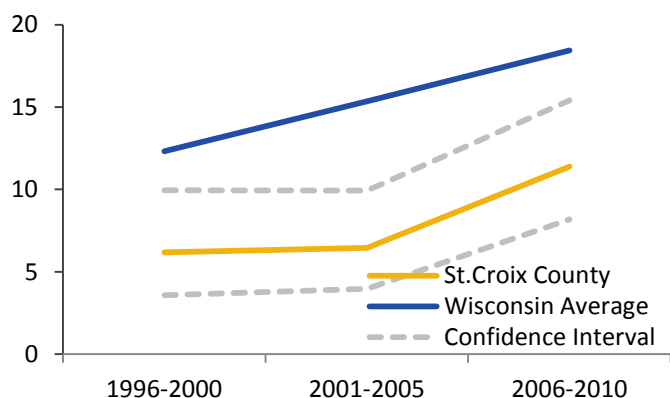


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



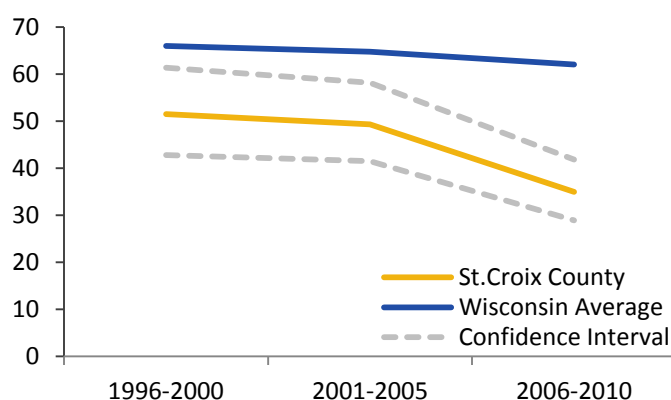
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



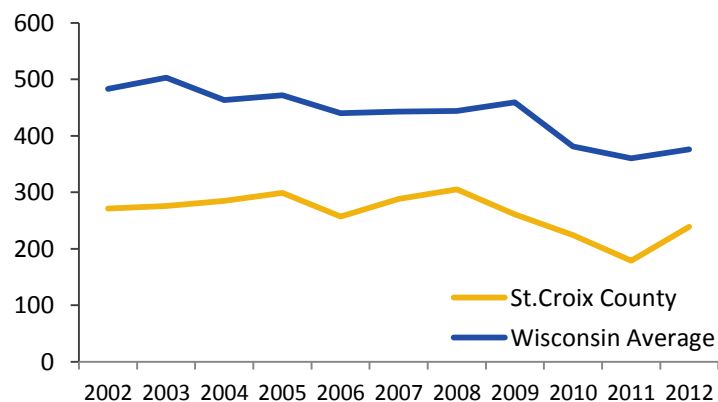
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

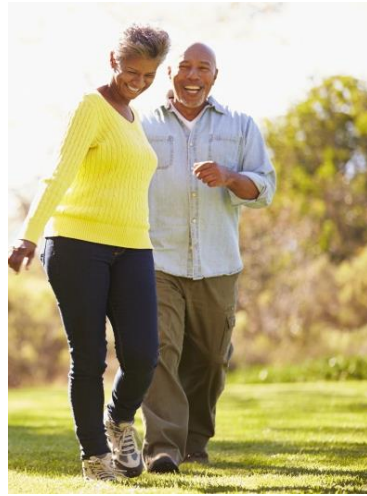
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



TAYLOR COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



TAYLOR COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.1 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.7 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 9.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.0% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 3.4% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 5.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 10.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 11.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 52.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 118.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY TAYLOR COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

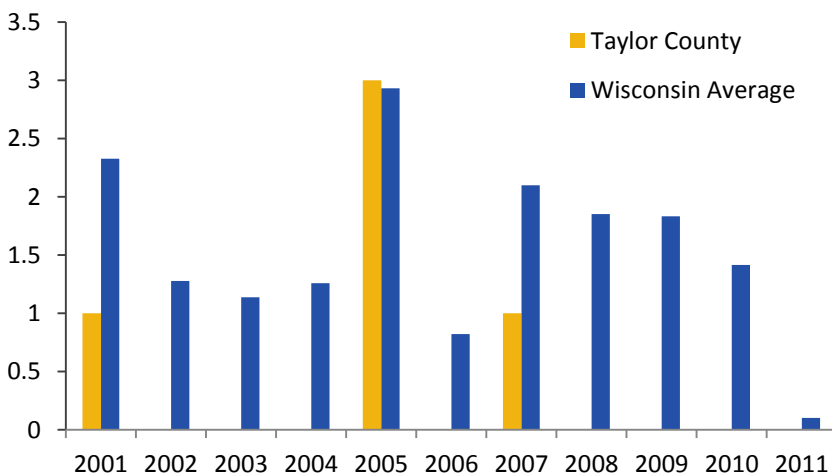
● 8.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





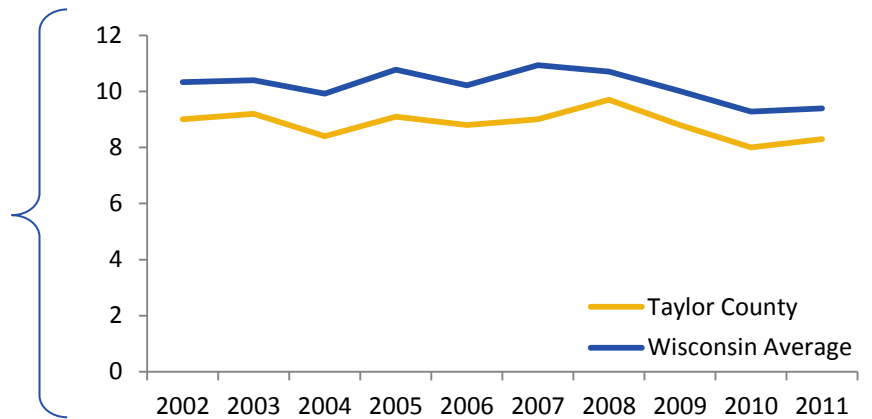
AIR QUALITY TAYLOR COUNTY

PARTICULATE MATTER 2.5

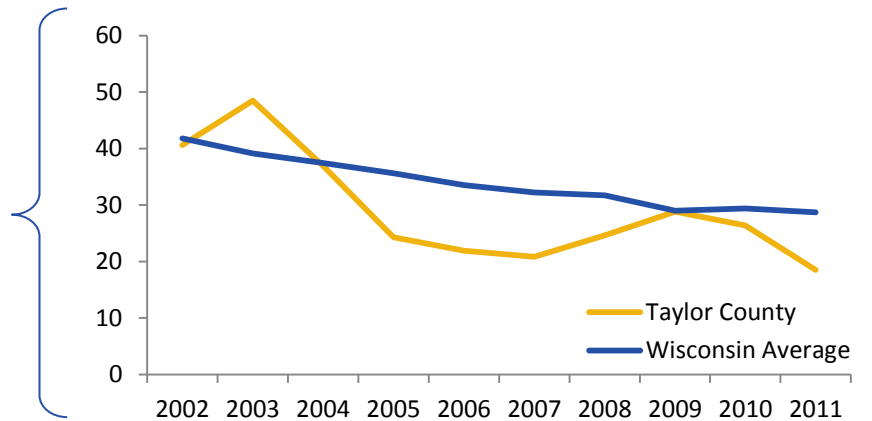
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

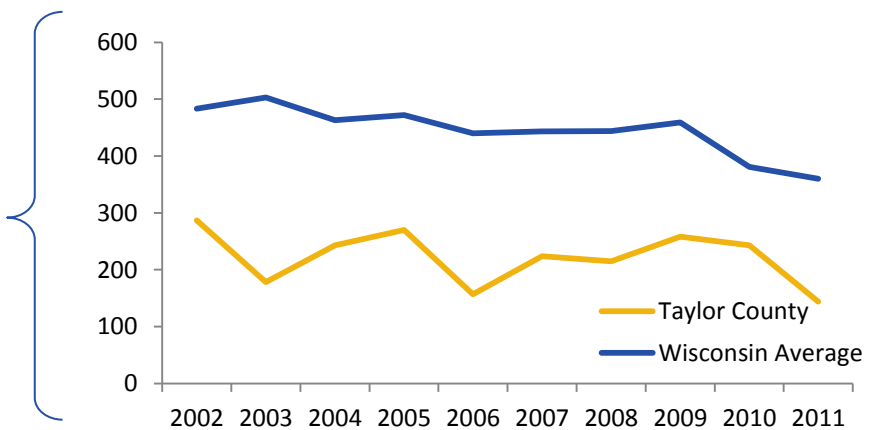
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY TAYLOR COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● 1.1

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● 0.7

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

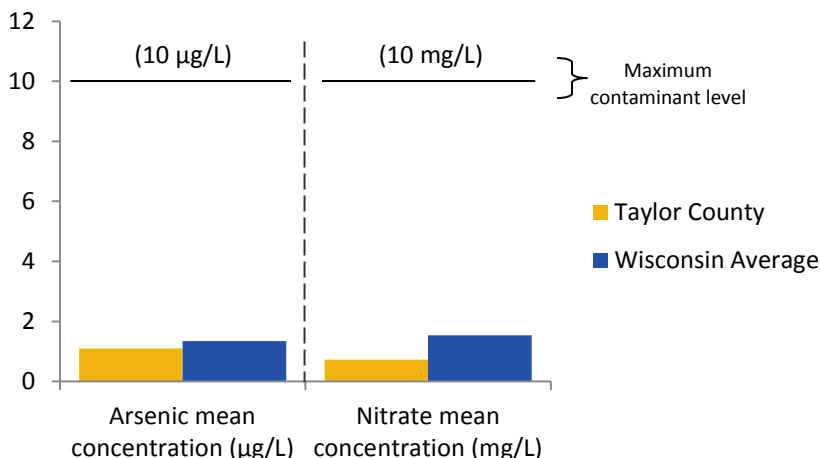
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY TAYLOR COUNTY

PRIVATE DRINKING WATER

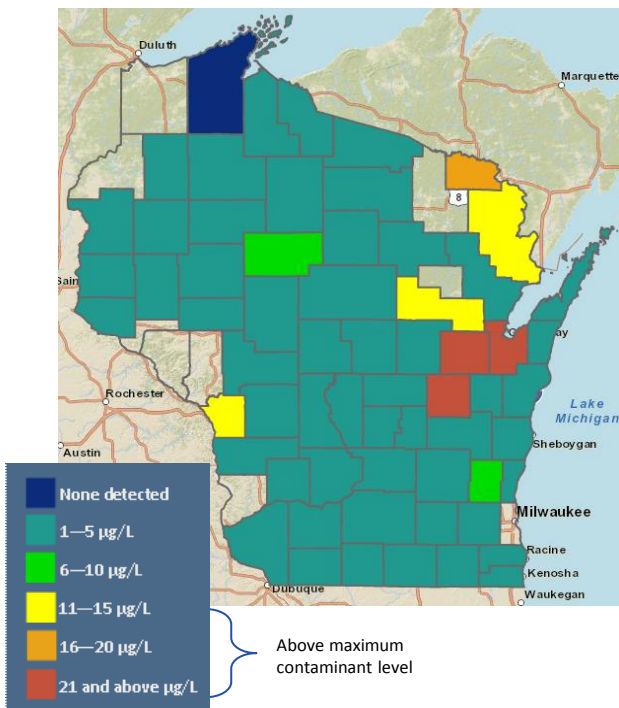
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

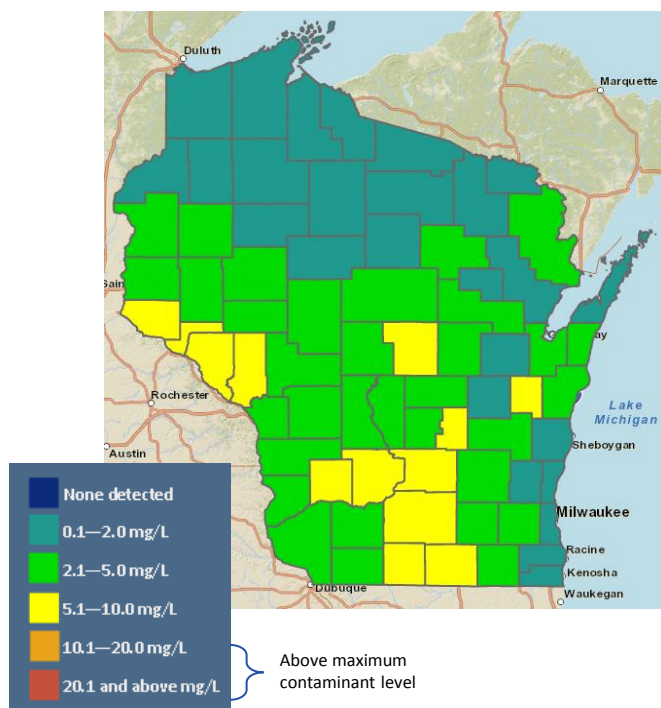
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

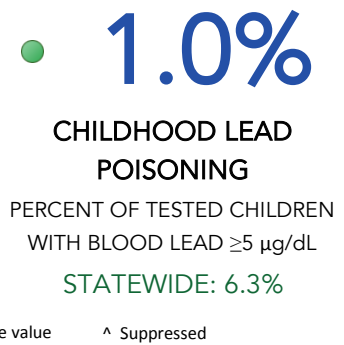
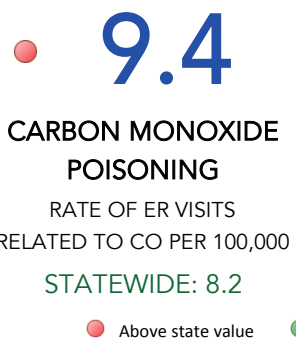


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS TAYLOR COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

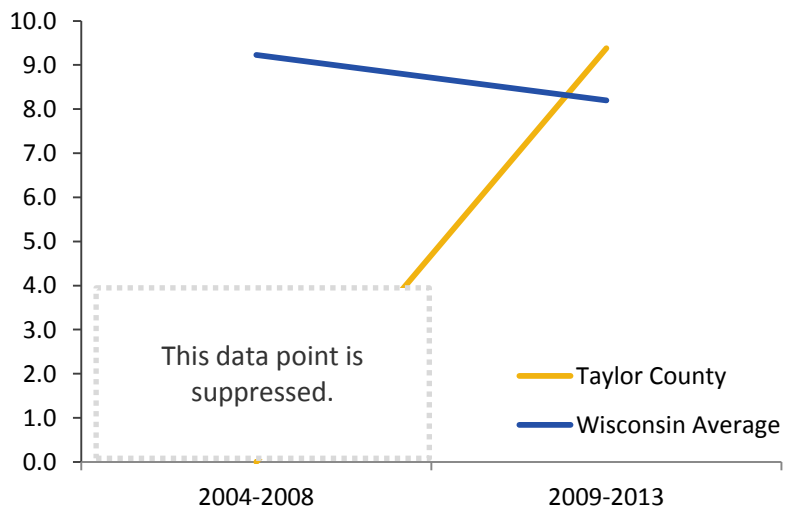


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

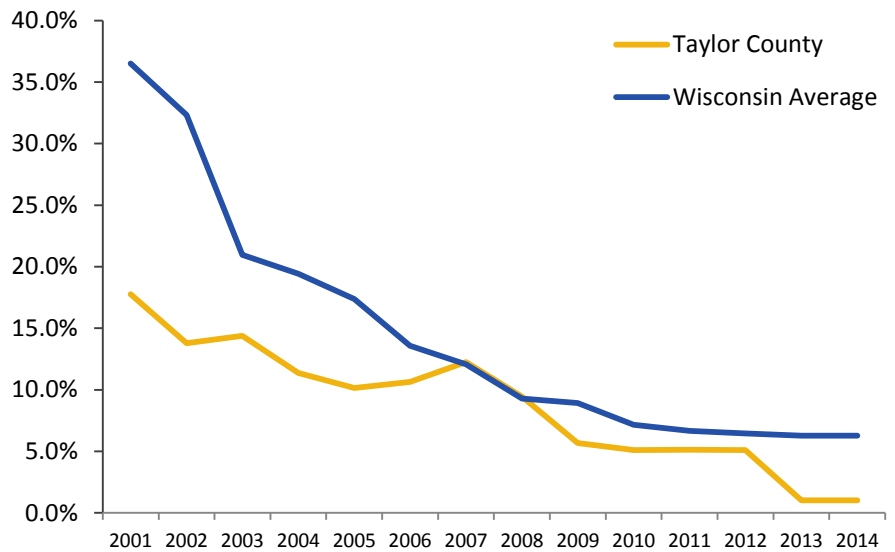
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

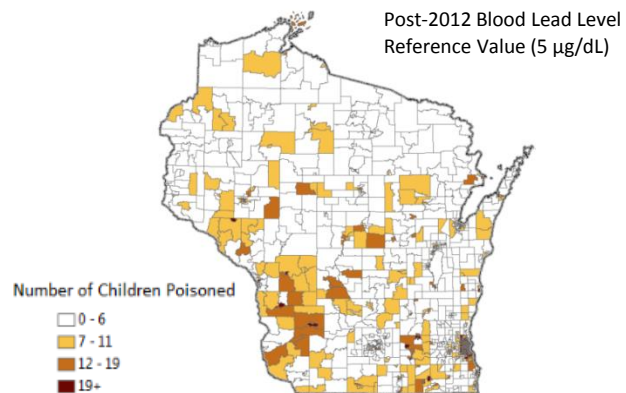
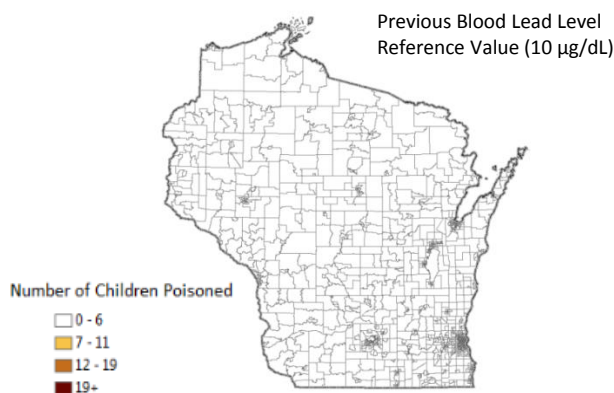
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

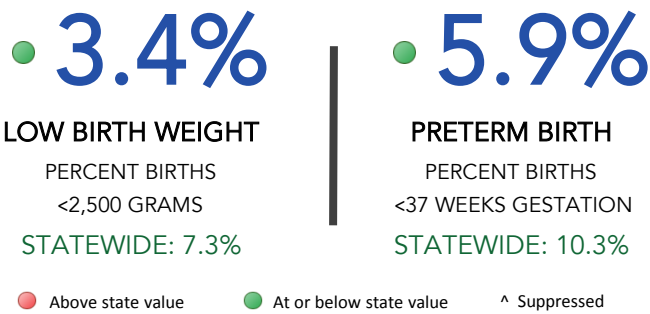
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES TAYLOR COUNTY

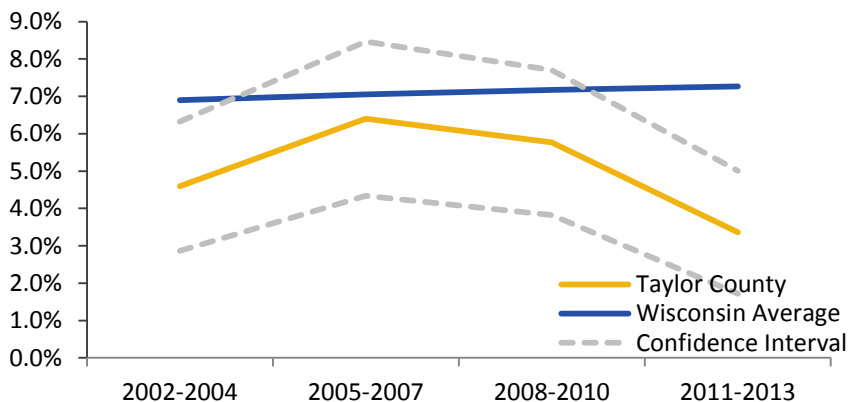
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES TAYLOR COUNTY

PRETERM BIRTH

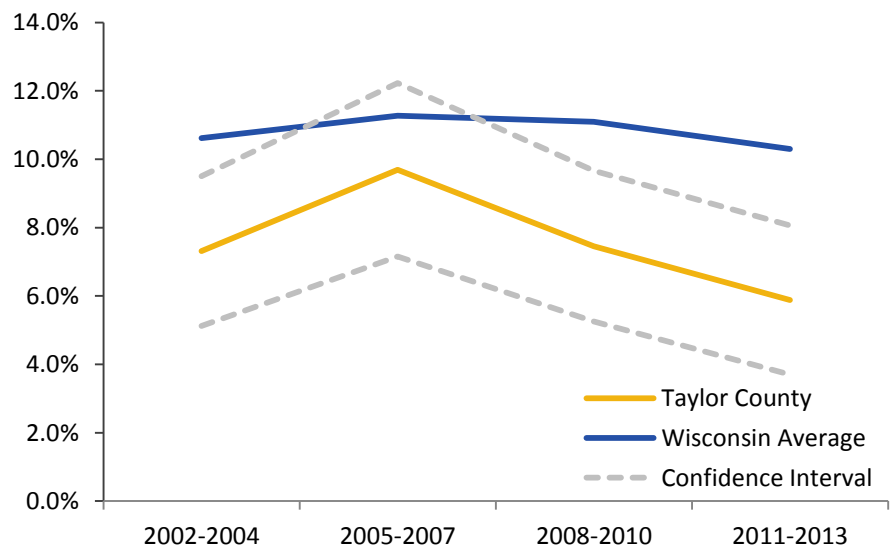
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS TAYLOR COUNTY

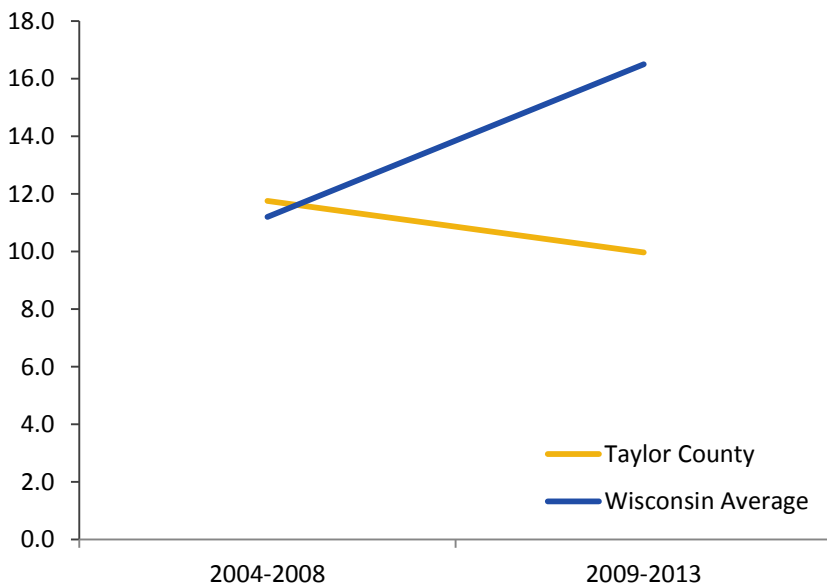
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 10.0</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 11.6</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 52.4</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 118.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



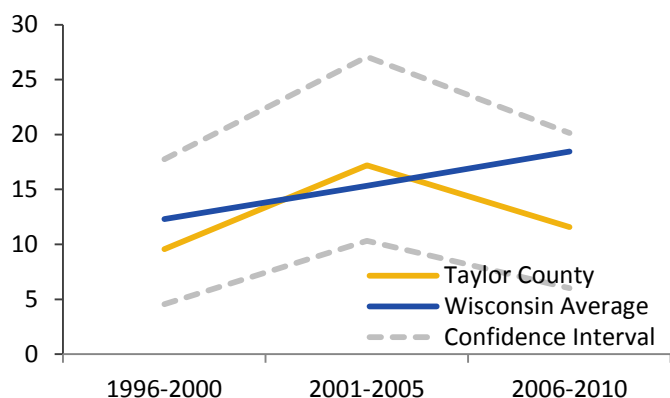


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



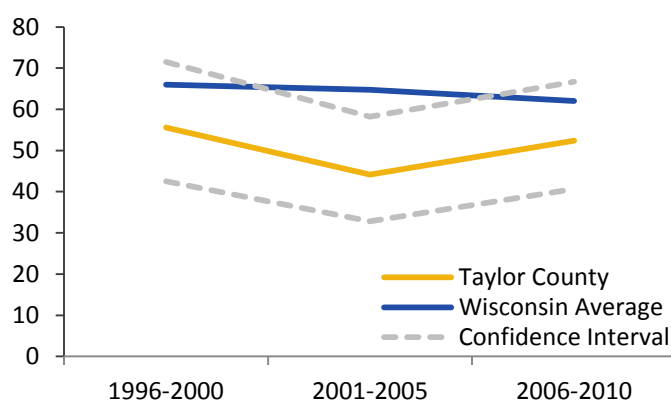
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



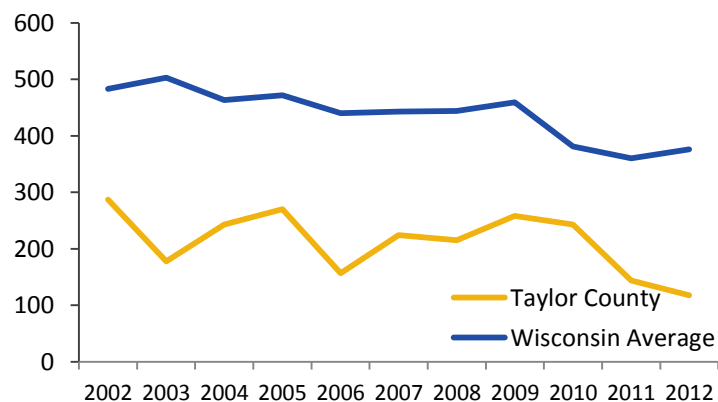
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
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MAY 2015 | P-00719



TREMPEALEAU COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



TREMPEALEAU COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.1 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 18.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.7% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 7.3% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 22.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 21.0 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 45.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 180.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY TREMPEALEAU COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

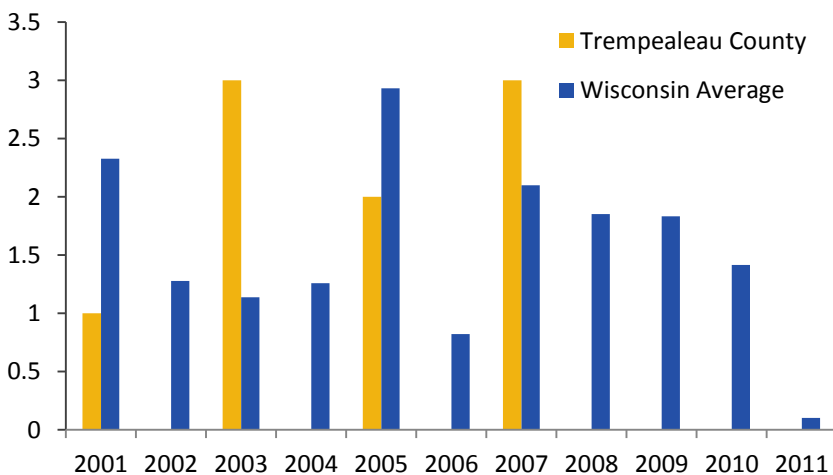
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **9.5**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m3)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

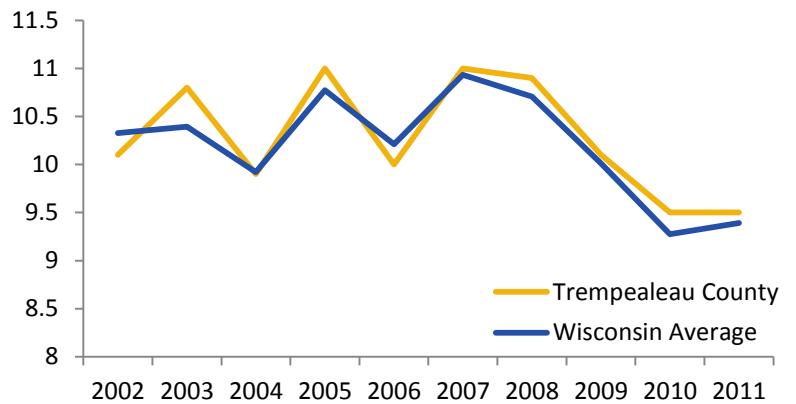
TREMPEALEAU COUNTY

PARTICULATE MATTER 2.5

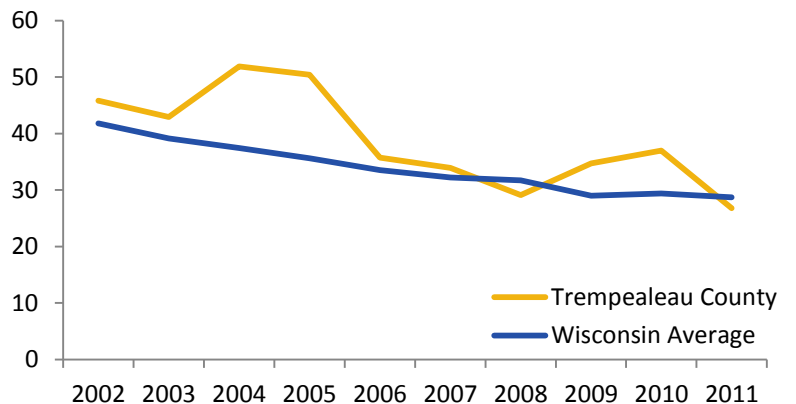
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

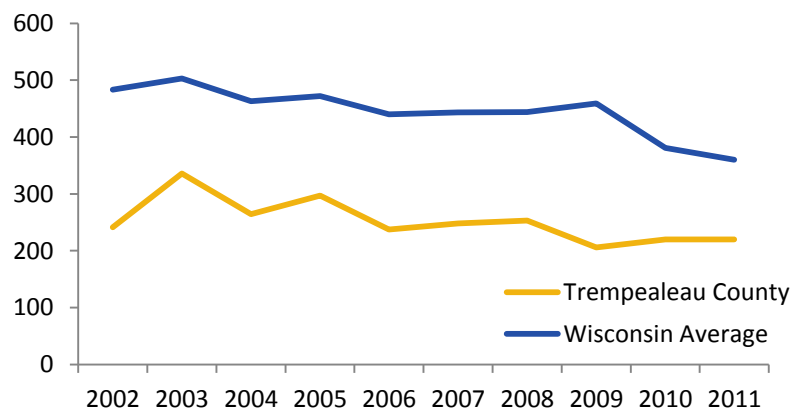
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



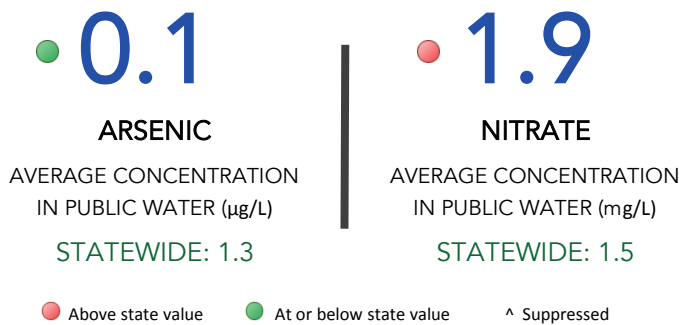
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY TREMPEALEAU COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

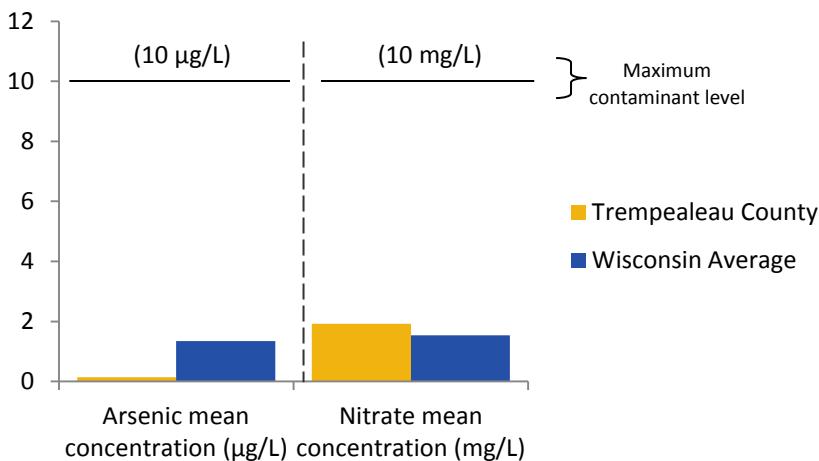
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY TREMPEALEAU COUNTY

PRIVATE DRINKING WATER

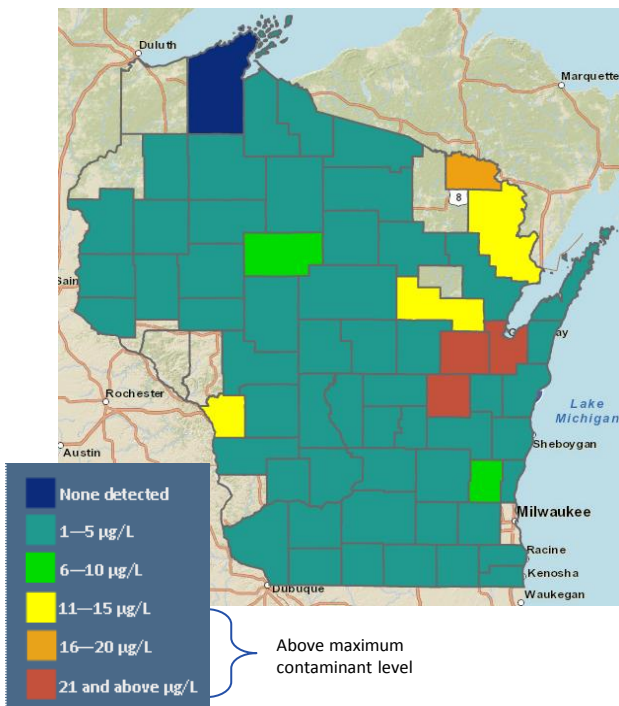
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

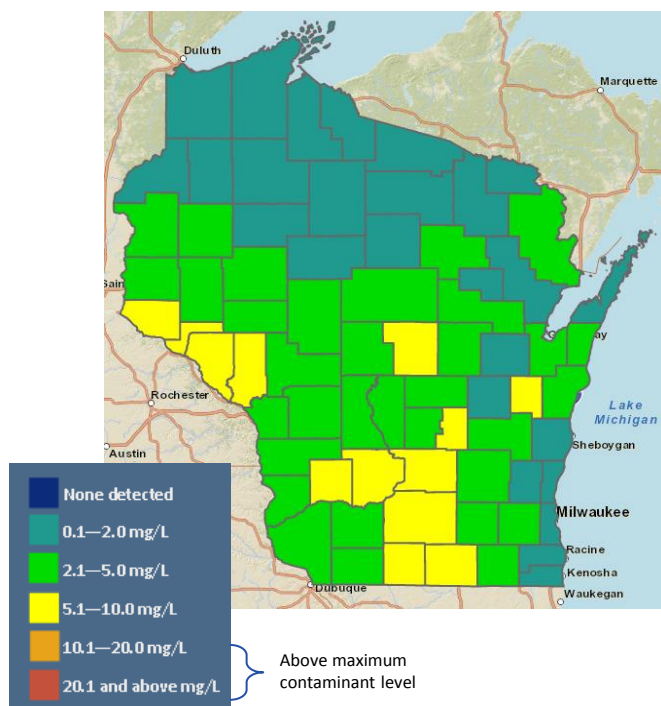
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

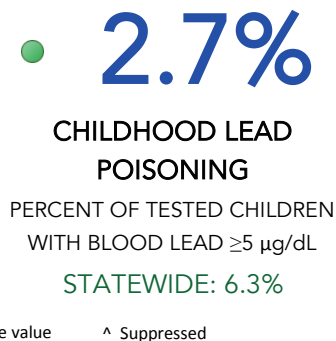
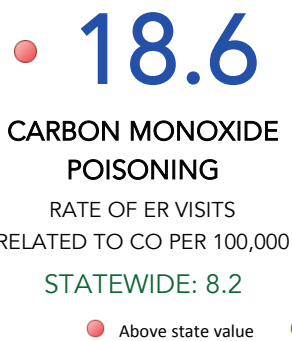


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.

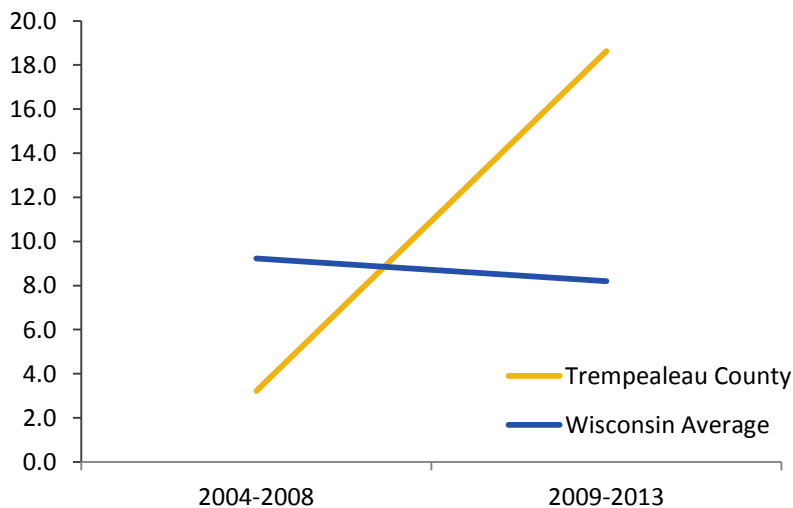


HOME HAZARDS TREMPEALEAU COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE




CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht 



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

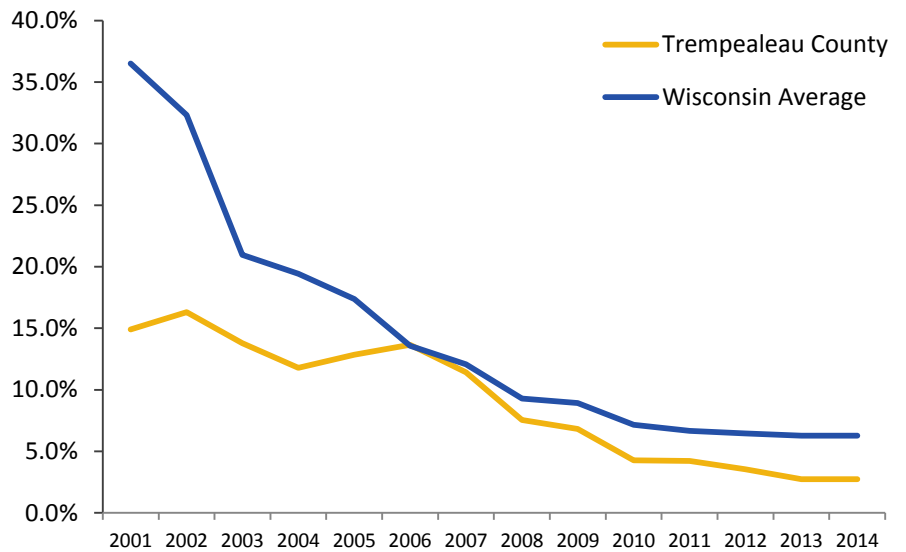
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

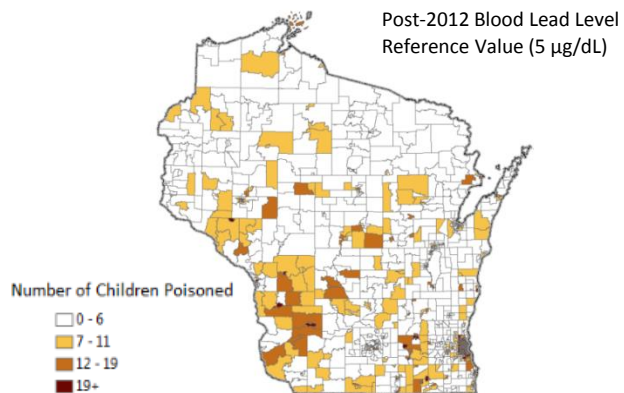
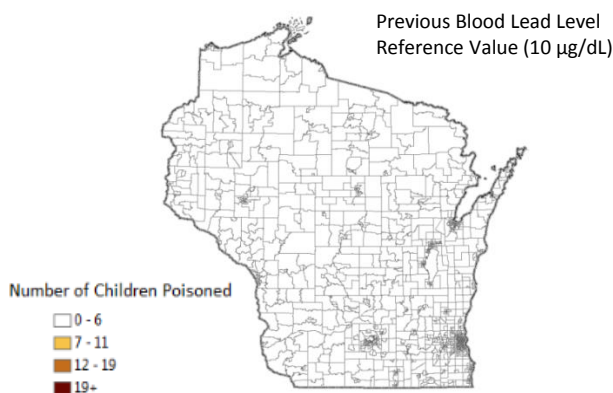
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

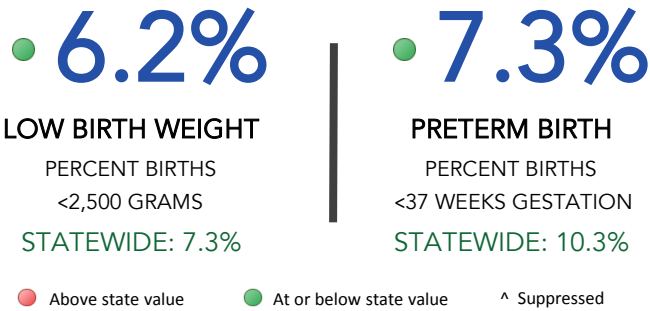
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES TREMPEALEAU COUNTY

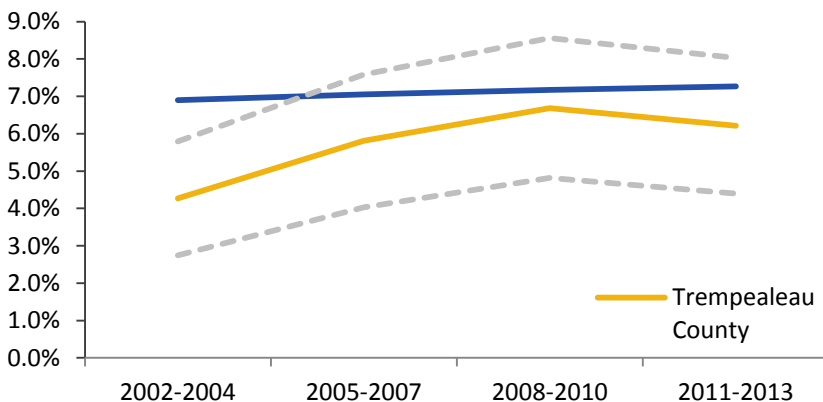
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

TREMPEALEAU COUNTY

PRETERM BIRTH

A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

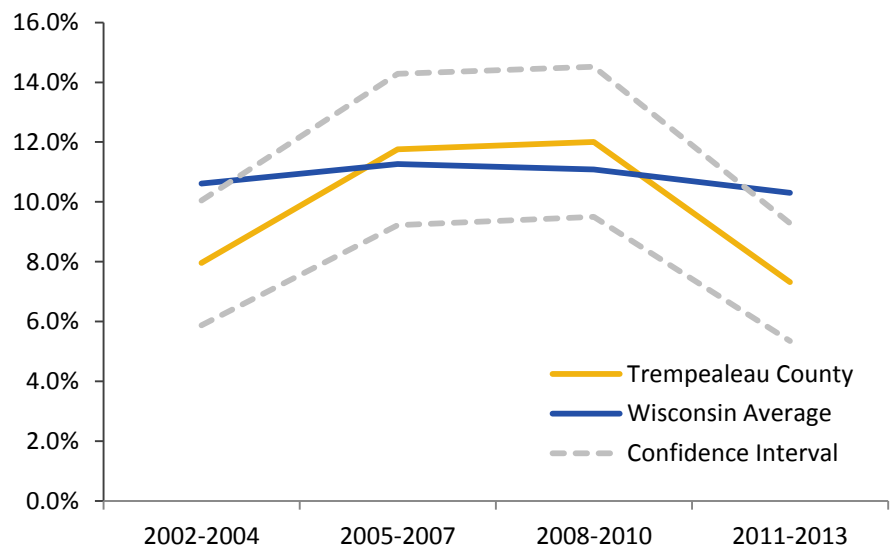
The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS

PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

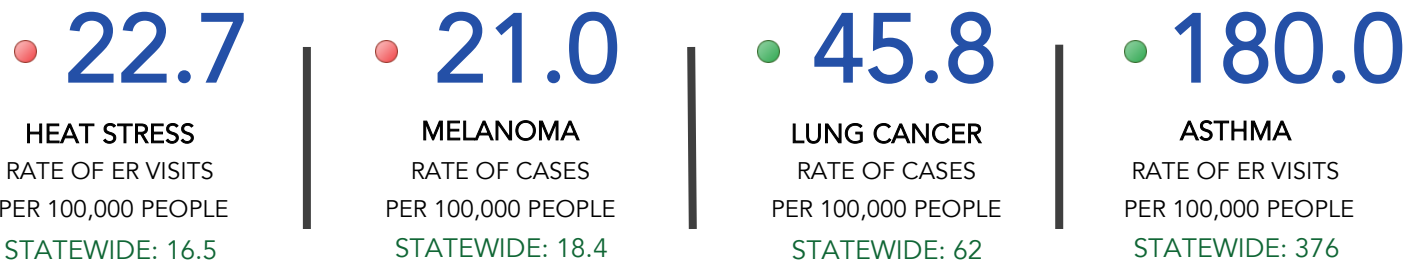
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS TREMPEALEAU COUNTY

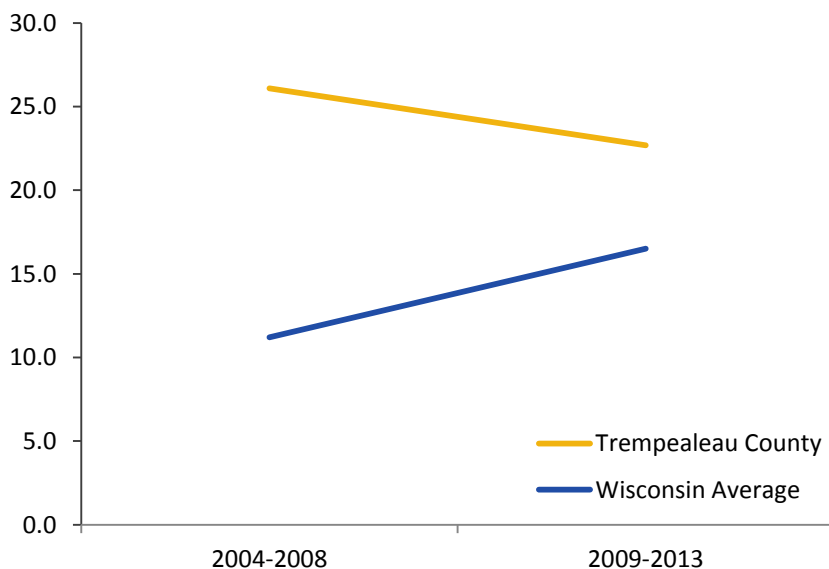
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



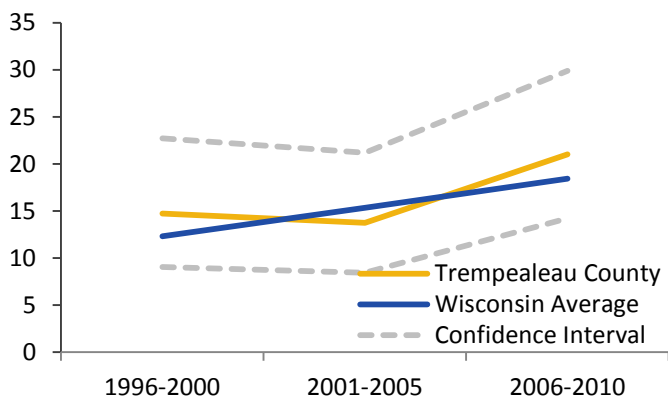


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



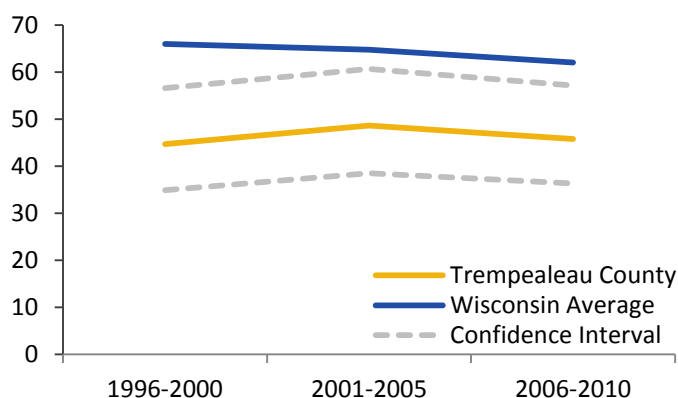
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



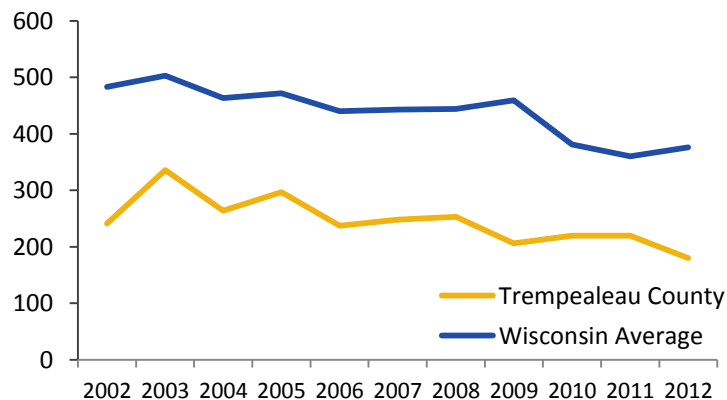
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

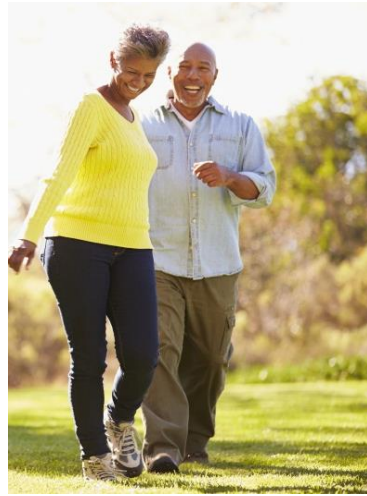
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



VERNON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

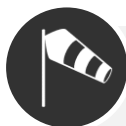
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



VERNON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.1 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.9 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 6.8 | Rate of ER visits per 100,000 people
Wisconsin: 8.7

Childhood Lead Poisoning

● 5.4% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 4.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 6.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 25.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 17.7 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 57.5 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 277.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Due to small numbers, aggregated rates were calculated for this county.
Years displayed in this profile: Aggregated data from 2004-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY VERNON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

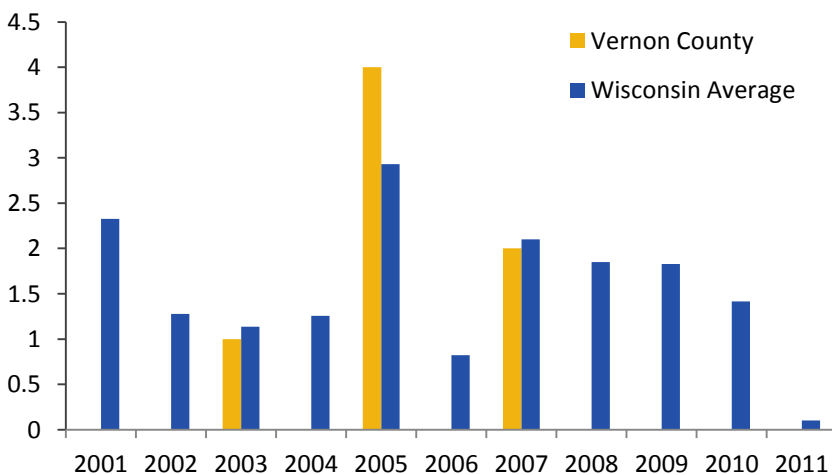
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **9.6**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

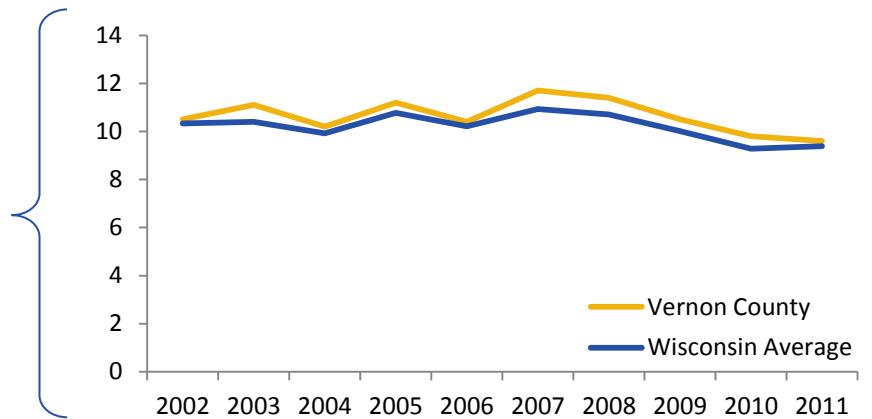
VERNON COUNTY

PARTICULATE MATTER 2.5

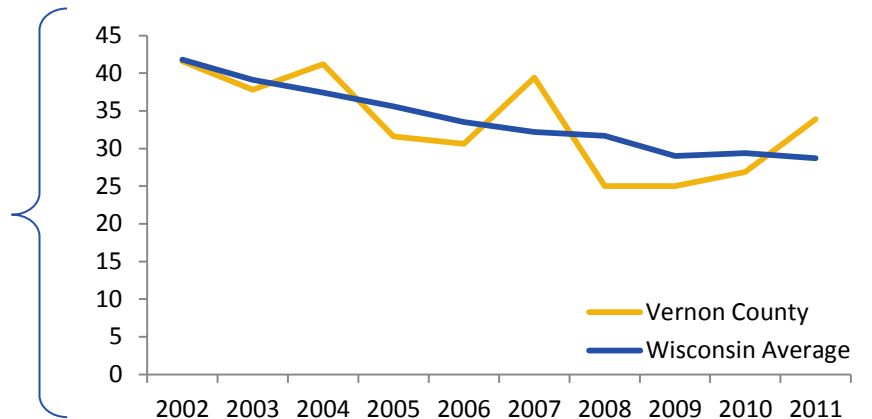
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

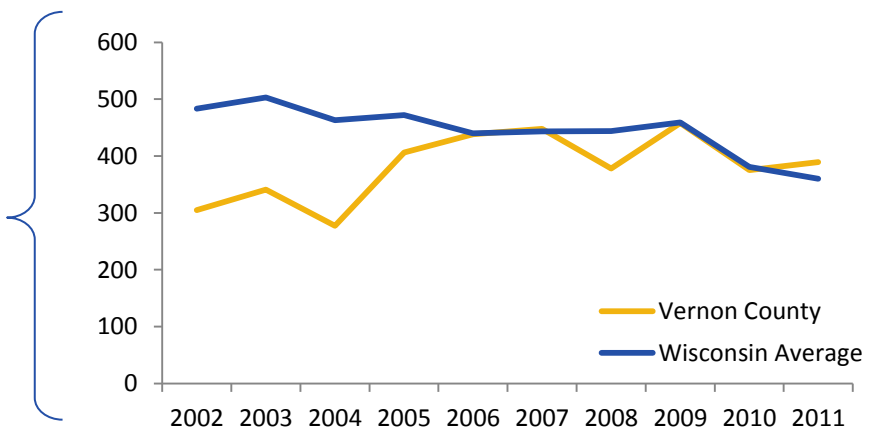
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



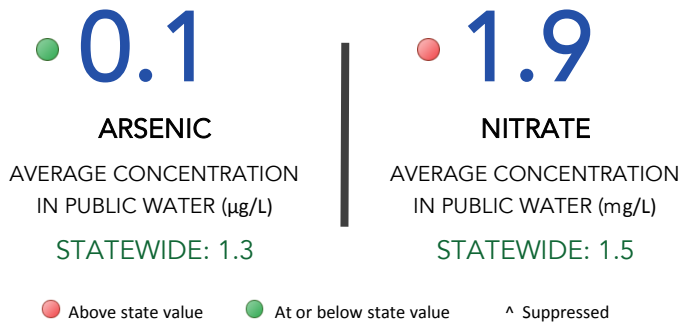
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY VERNON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

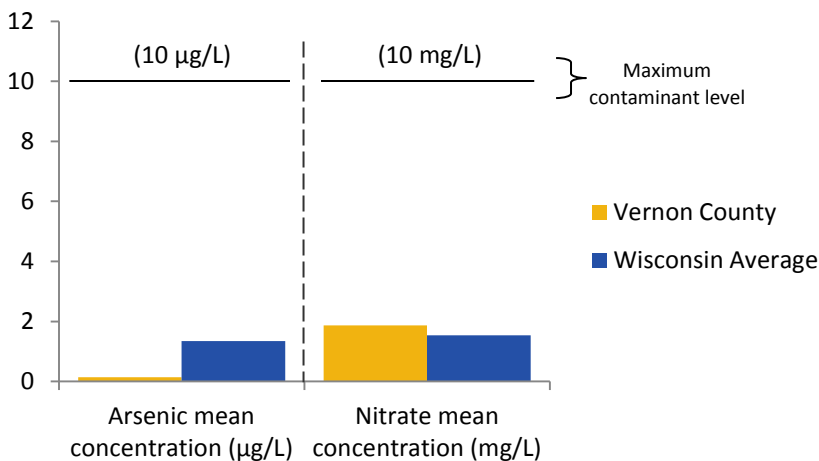
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY VERNON COUNTY

PRIVATE DRINKING WATER

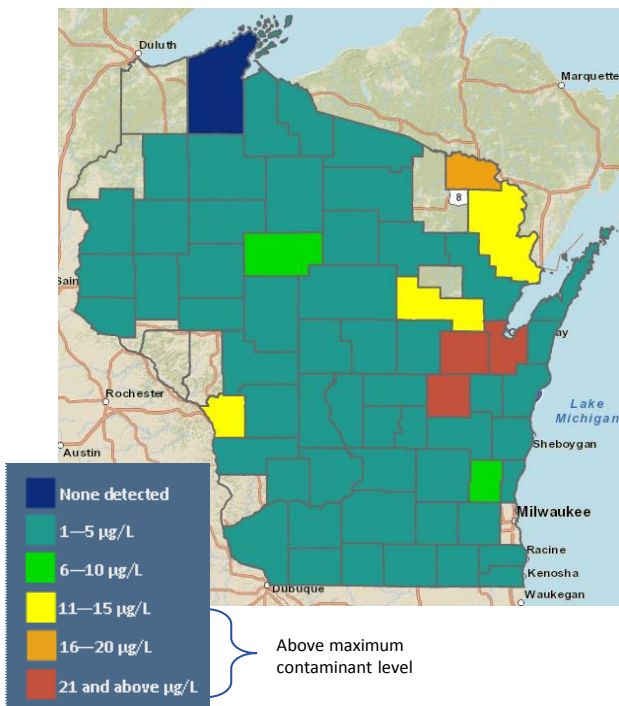
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

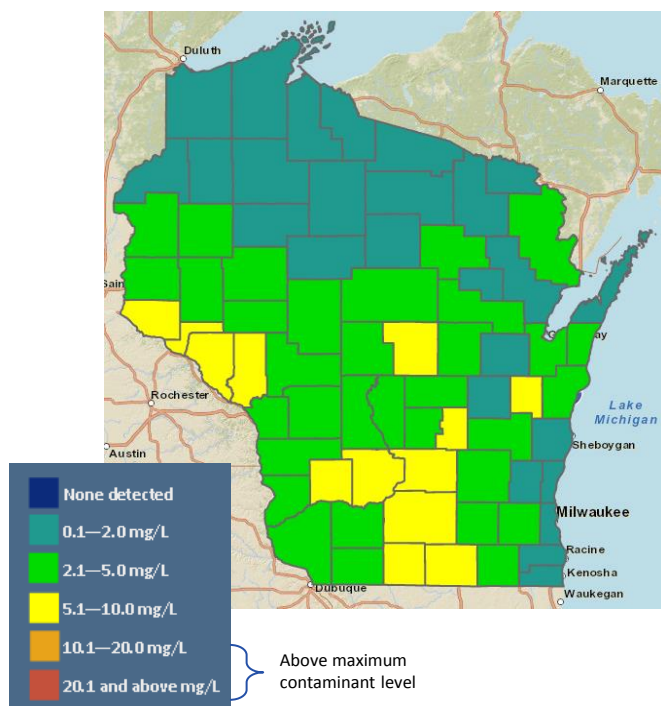
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS VERNON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.8**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.7

● **5.4%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

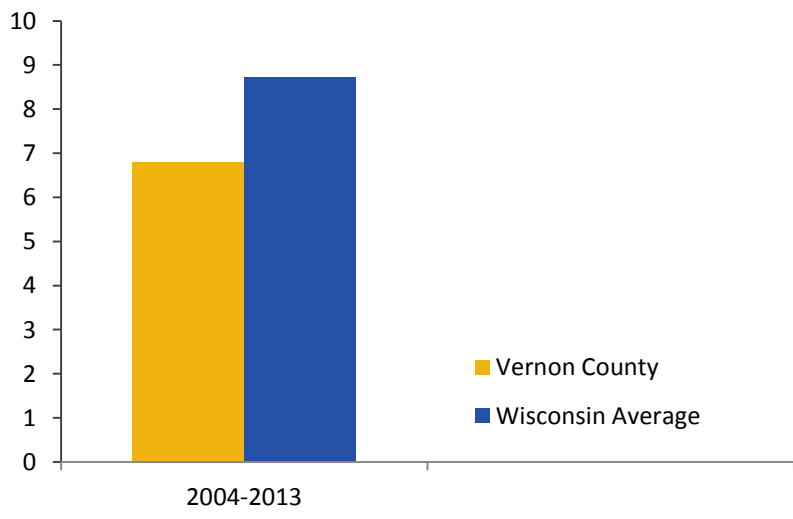
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

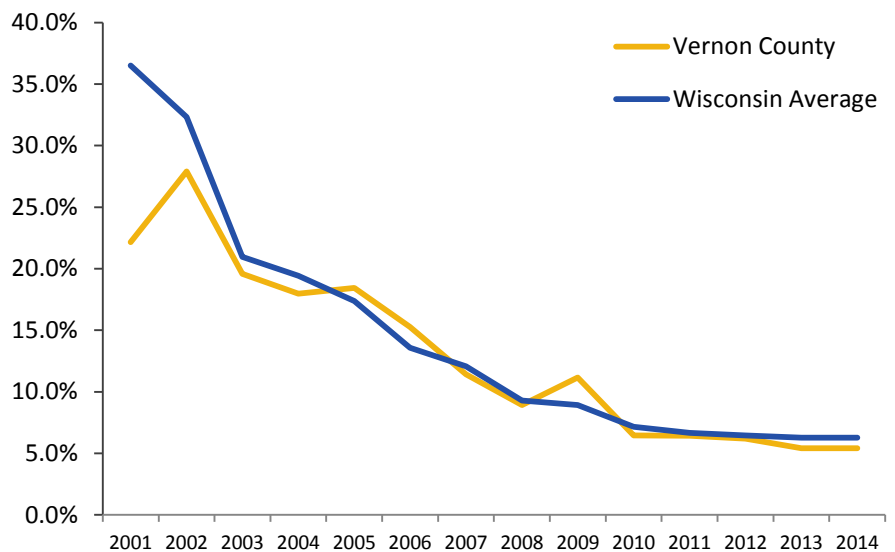
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

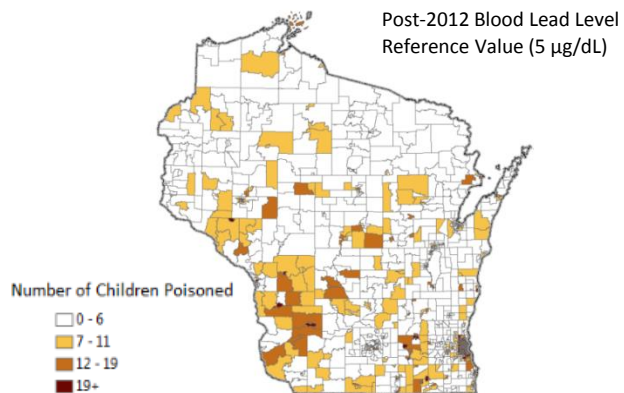
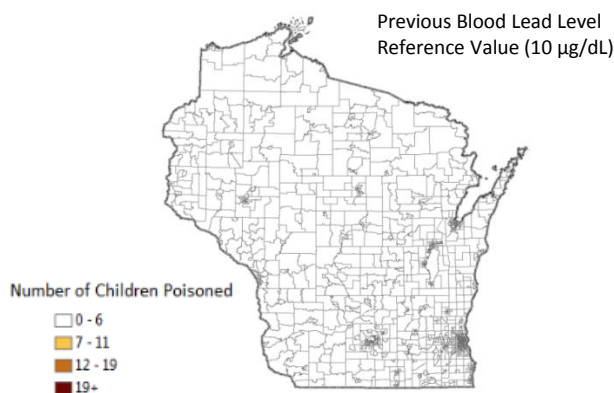
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES VERNON COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **4.7%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **6.4%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

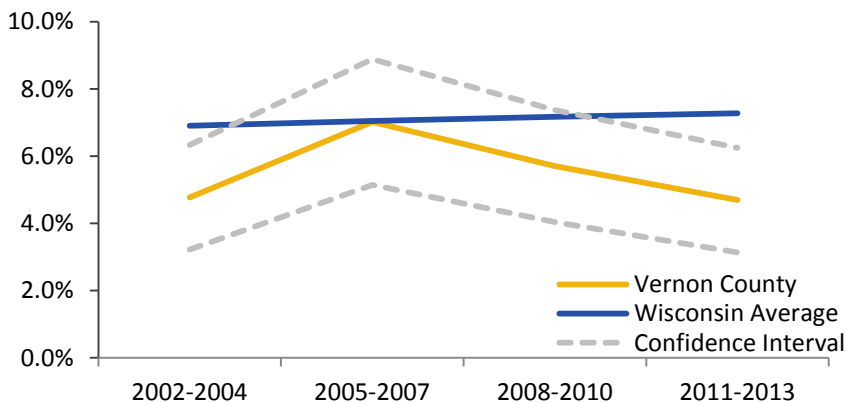
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

VERNON COUNTY

PRETERM BIRTH

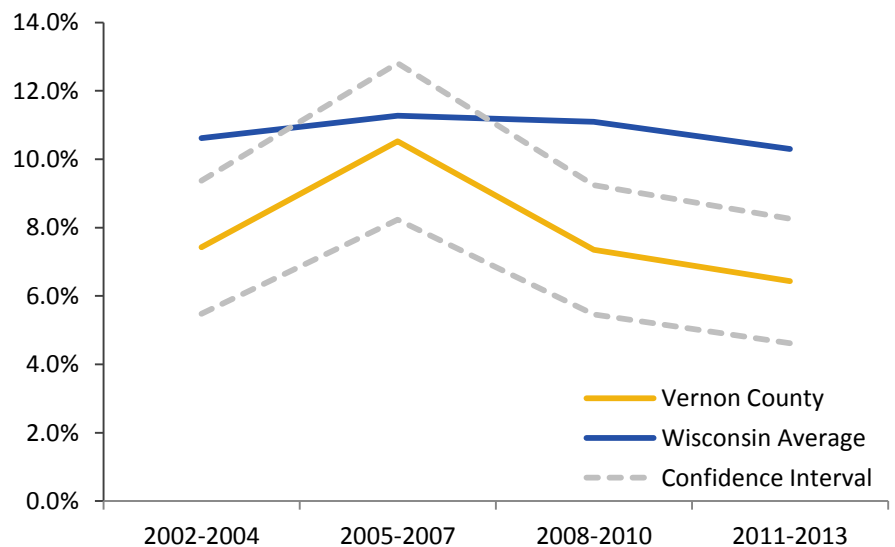
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS VERNON COUNTY

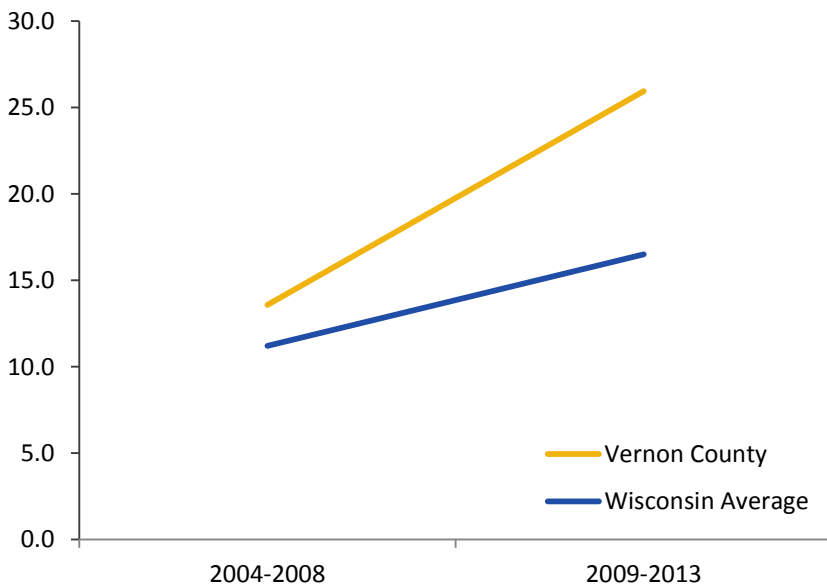
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 25.9</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 17.7</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 57.5</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 277.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



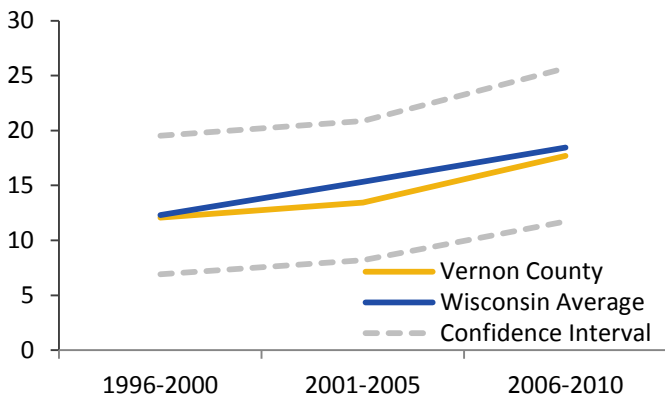


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



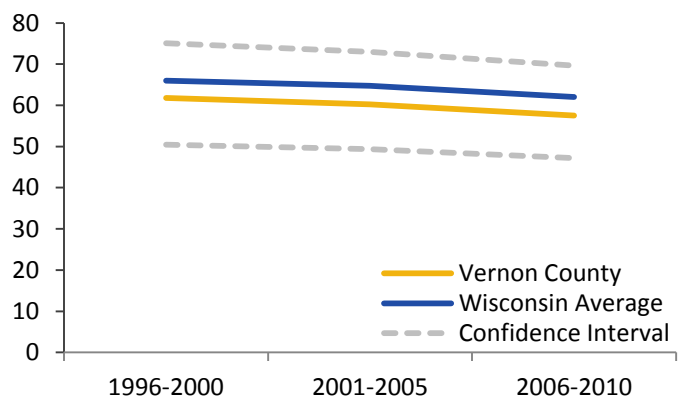
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



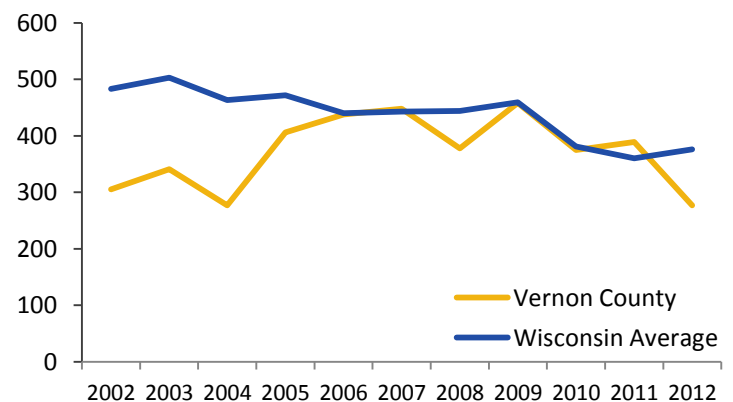
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data aggregated from 2004-2013 displayed on the dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. Due to small numbers, aggregated rates were calculated for this county.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
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Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



VILAS COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

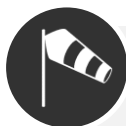
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



VILAS COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.7 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 16.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.6% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.6% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.7% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 25.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 11.4 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 67.6 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 382.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY VILAS COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

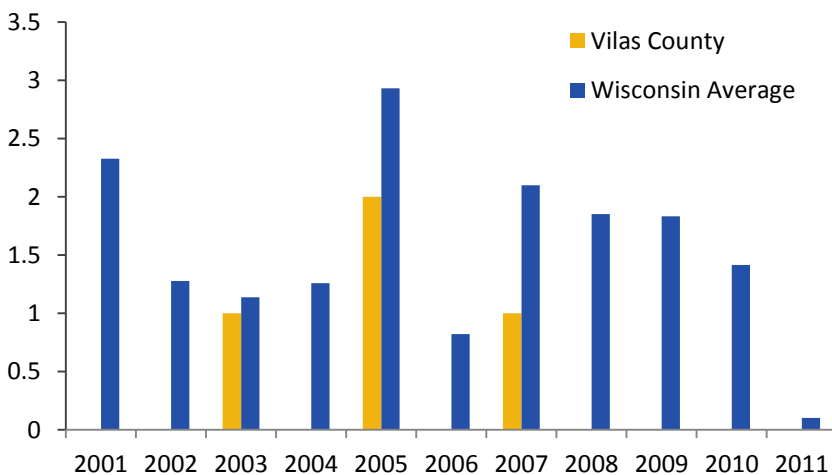
● 7.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

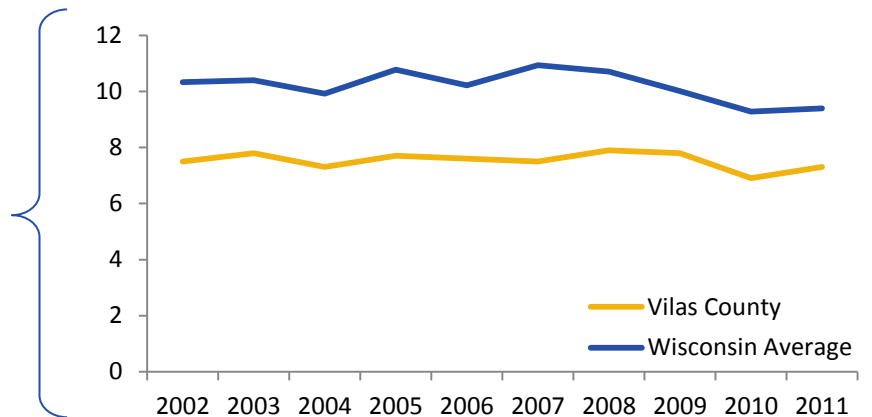
VILAS COUNTY

PARTICULATE MATTER 2.5

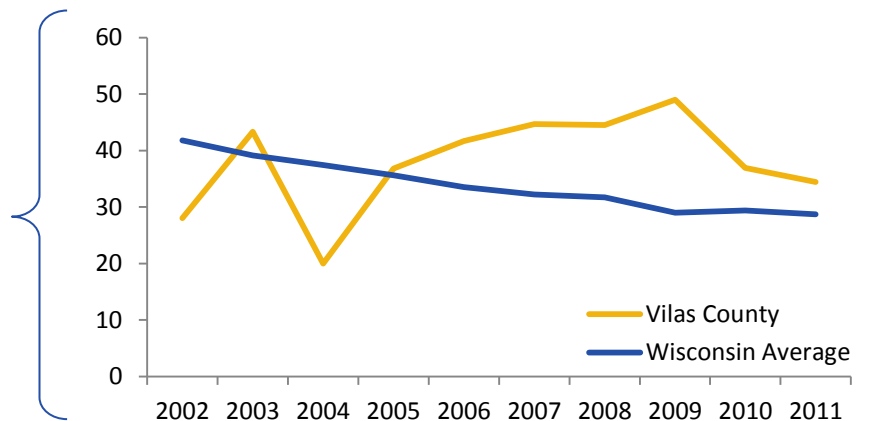
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

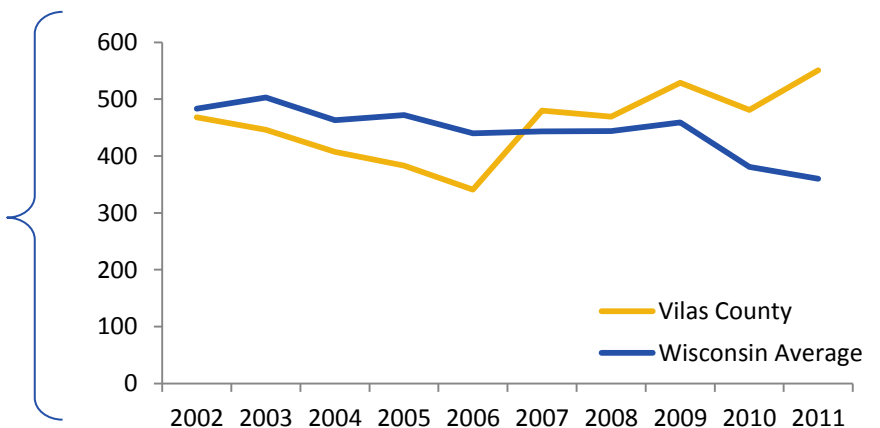
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



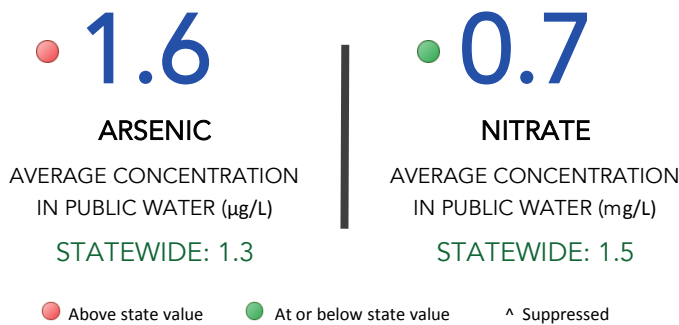
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY VILAS COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

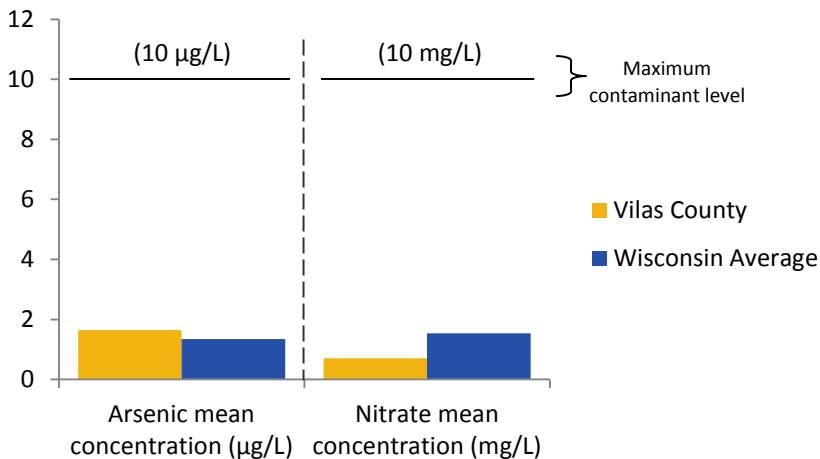
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY VILAS COUNTY

PRIVATE DRINKING WATER

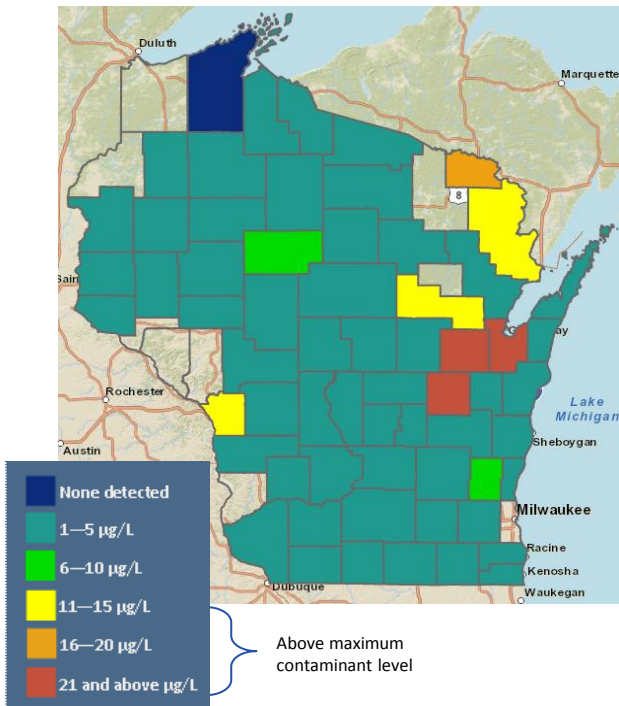
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

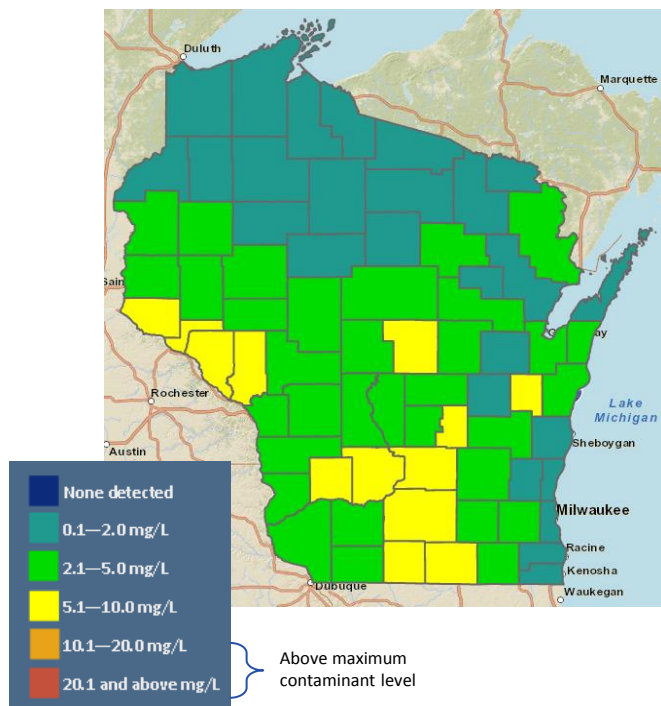
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

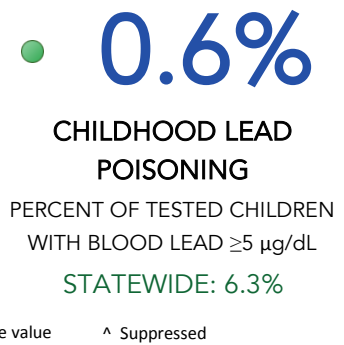
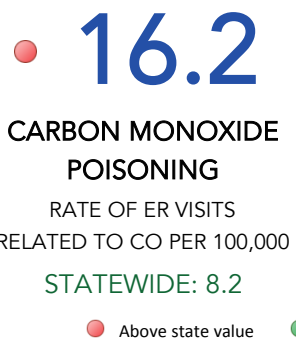


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS VILAS COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

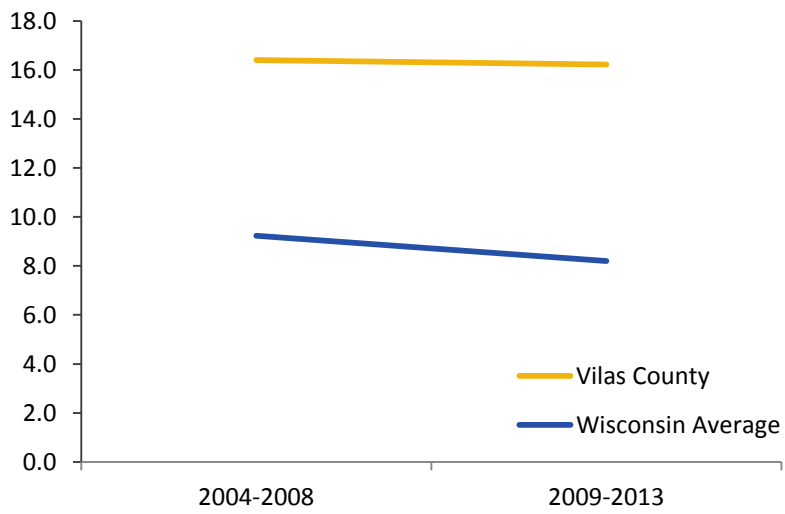


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

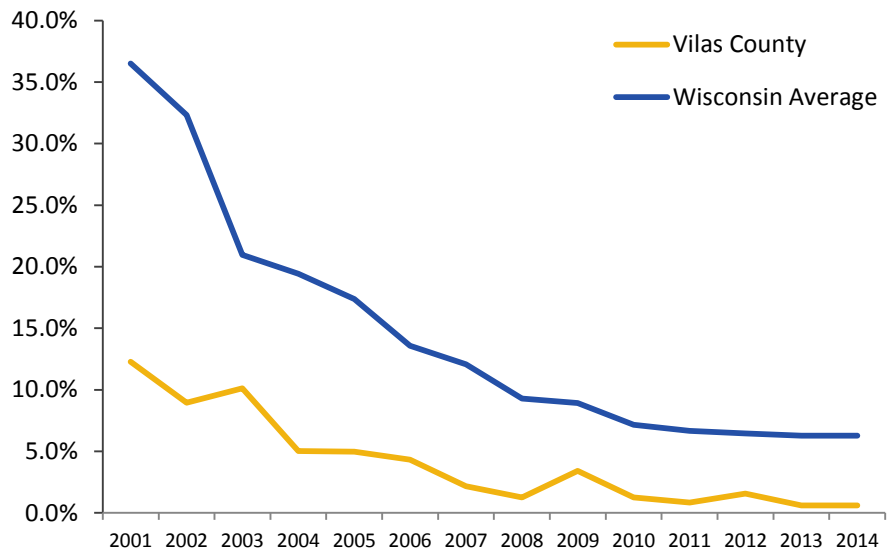
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

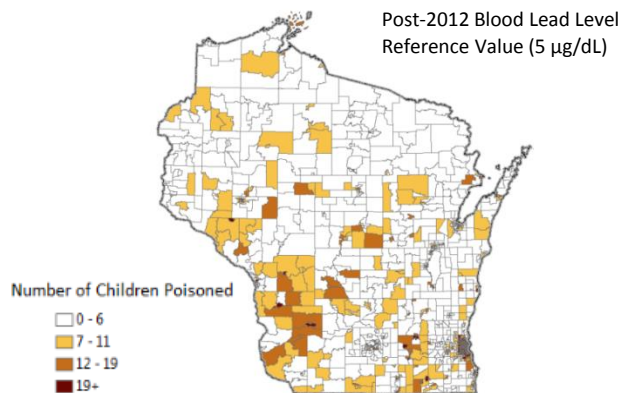
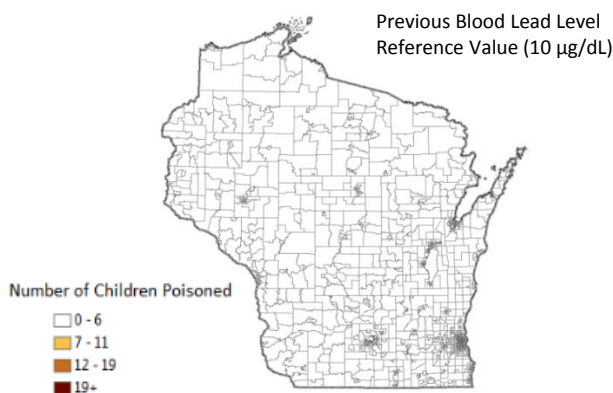
CHILDHOOD LEAD POISONING

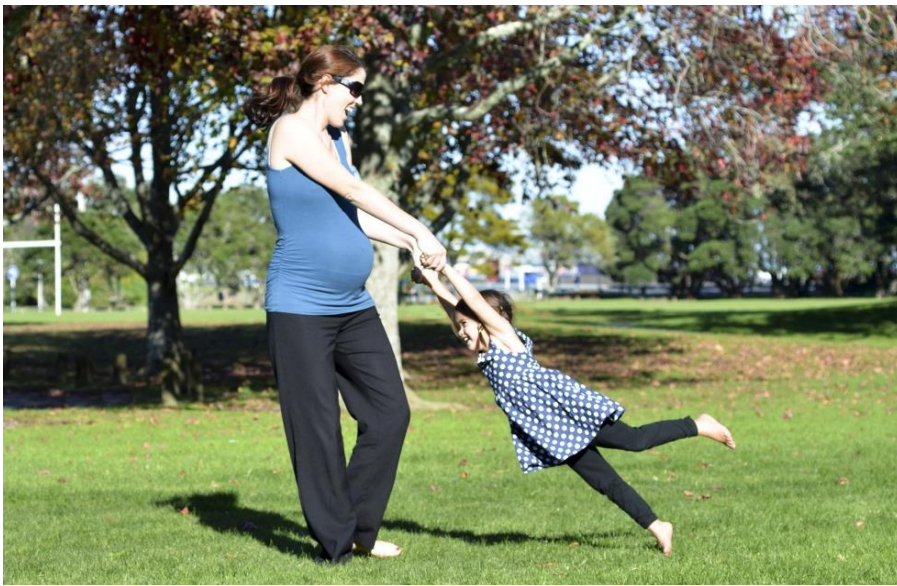
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES VILAS COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.6%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **8.7%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

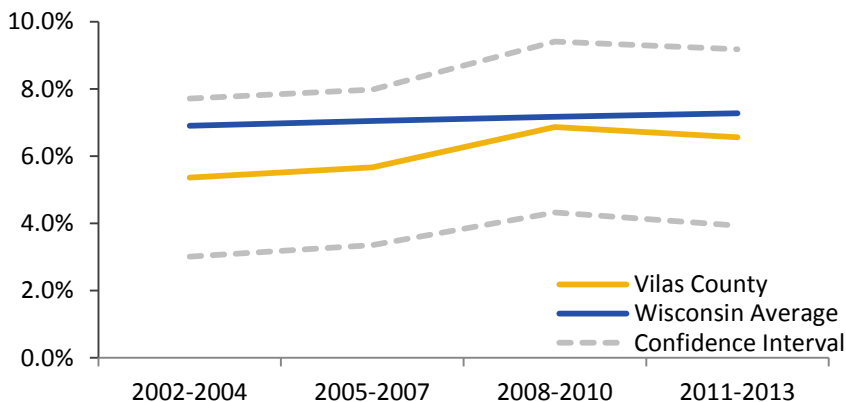
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

VILAS COUNTY

PRETERM BIRTH

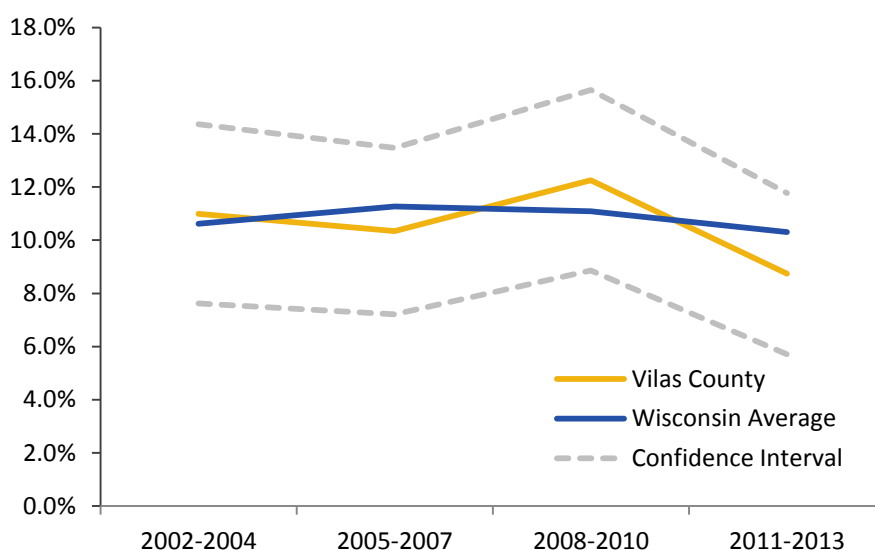
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

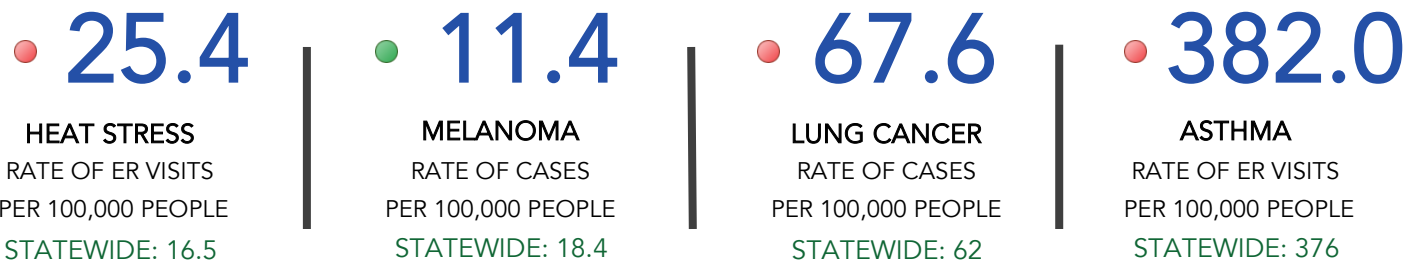
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS VILAS COUNTY

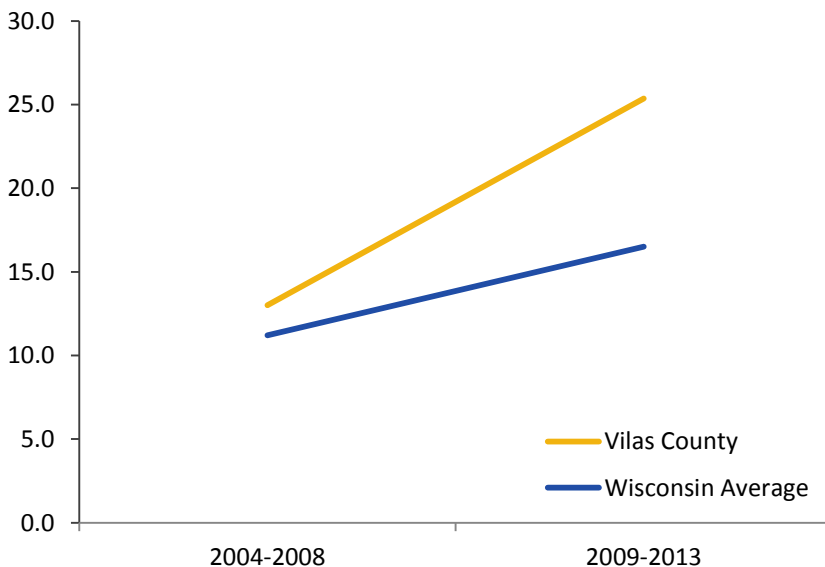
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



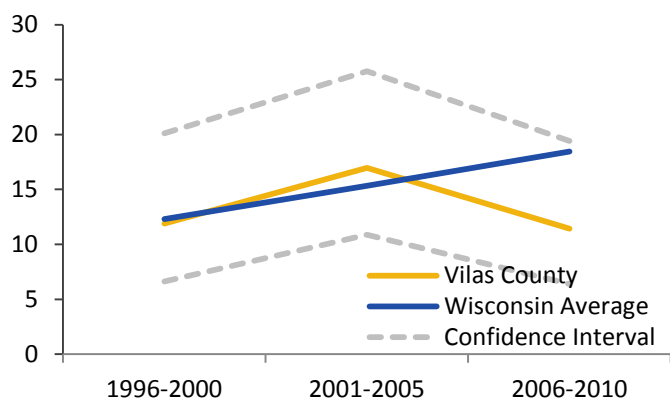


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



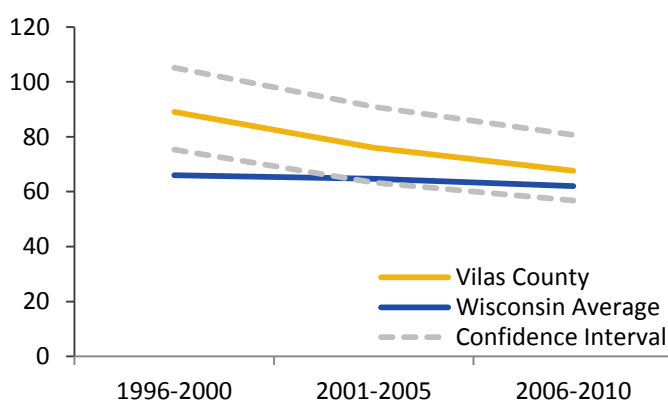
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



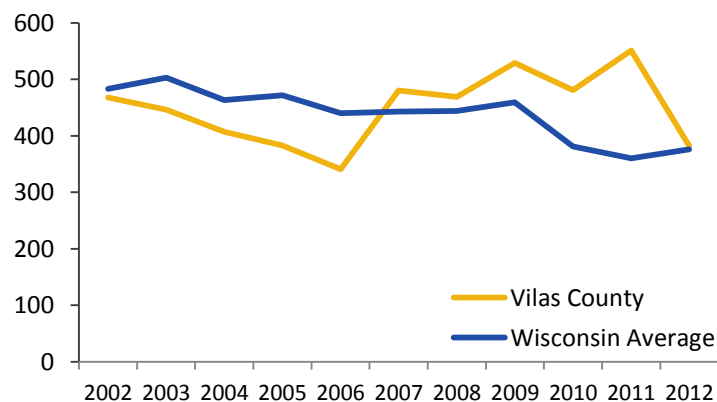
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

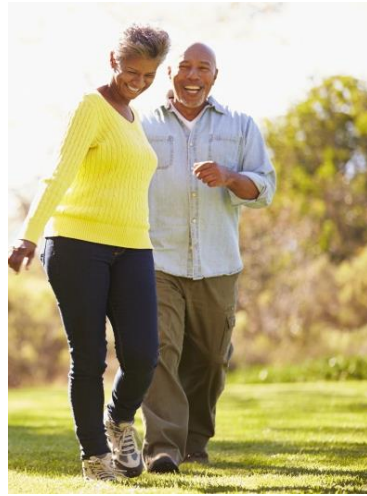
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WALWORTH COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

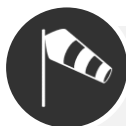
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WALWORTH COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 5.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.5% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.2% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.4% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 16.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 22.9 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 65.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 291.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WALWORTH COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

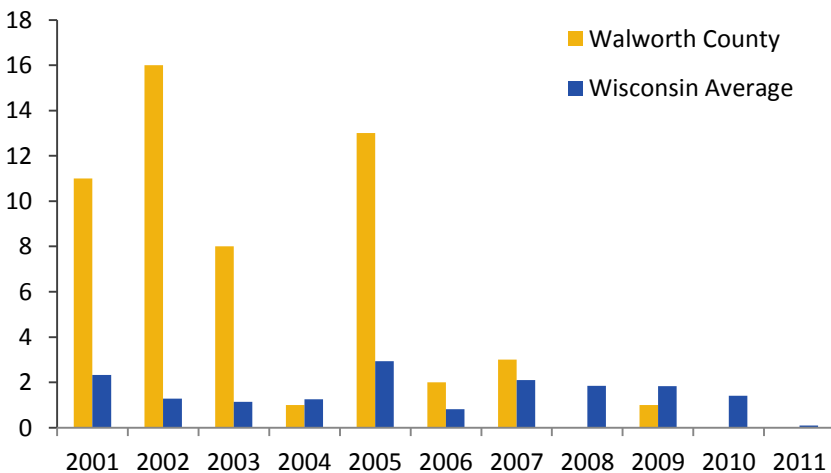
● 10.9

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

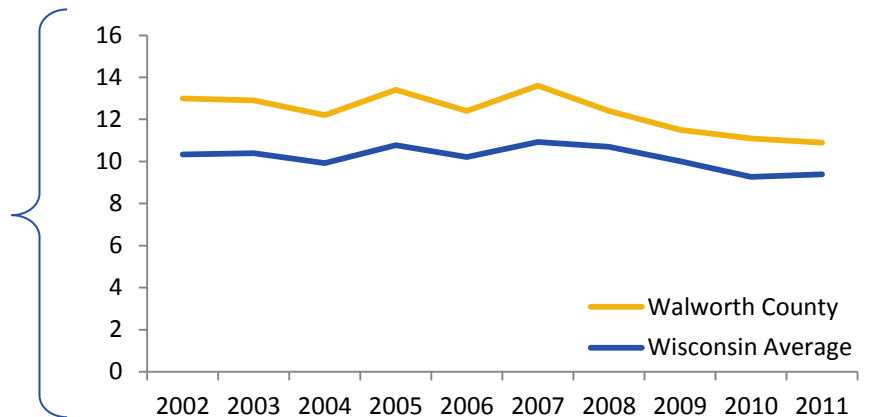
WALWORTH COUNTY

PARTICULATE MATTER 2.5

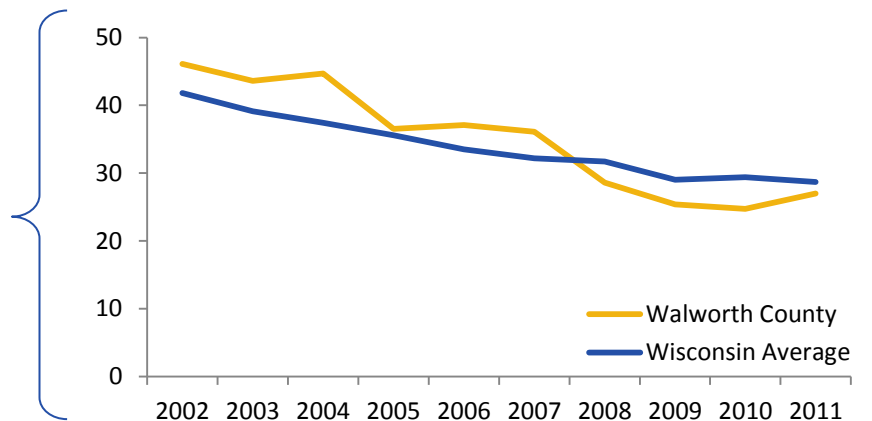
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

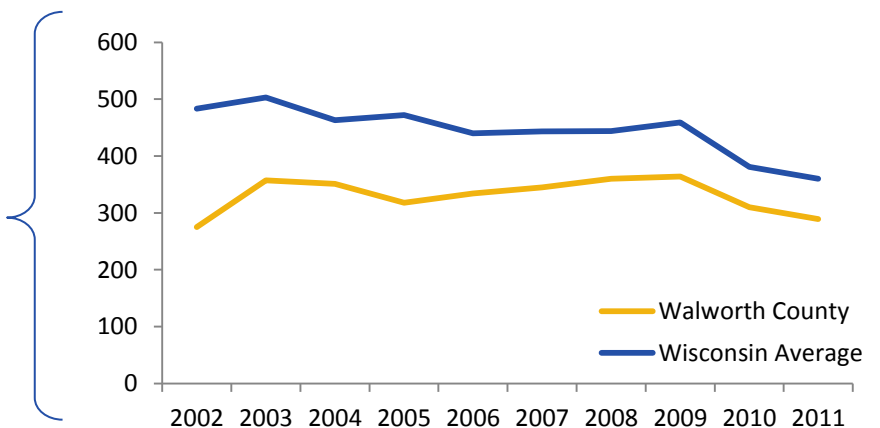
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



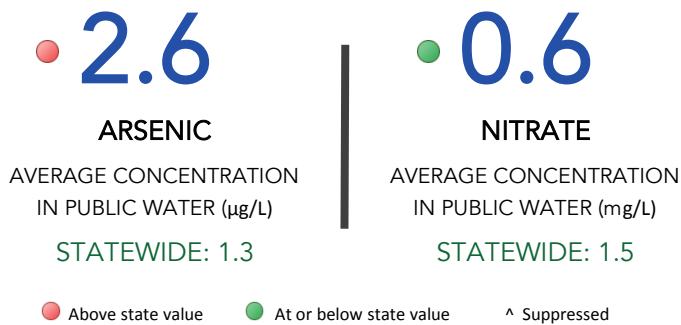
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WALWORTH COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

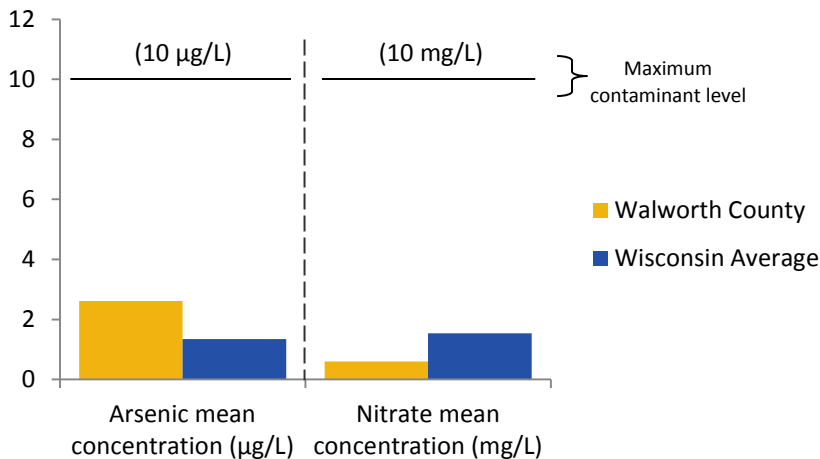
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY WALWORTH COUNTY

PRIVATE DRINKING WATER

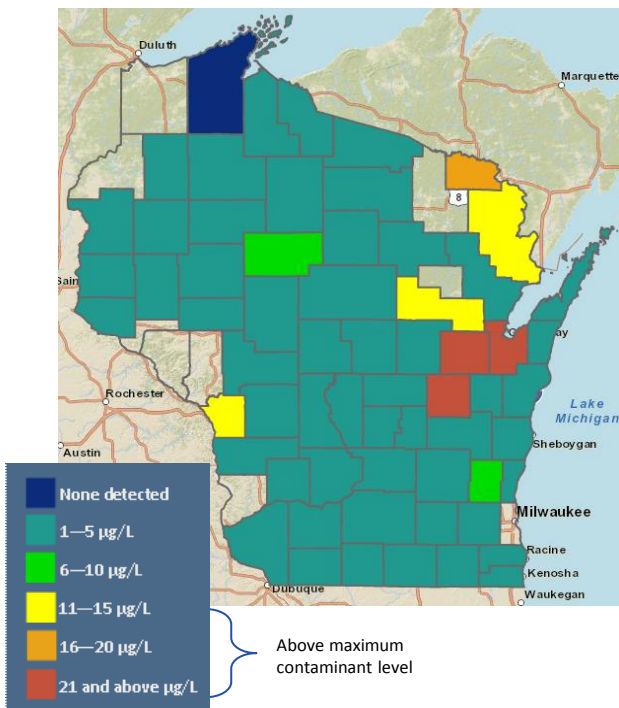
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

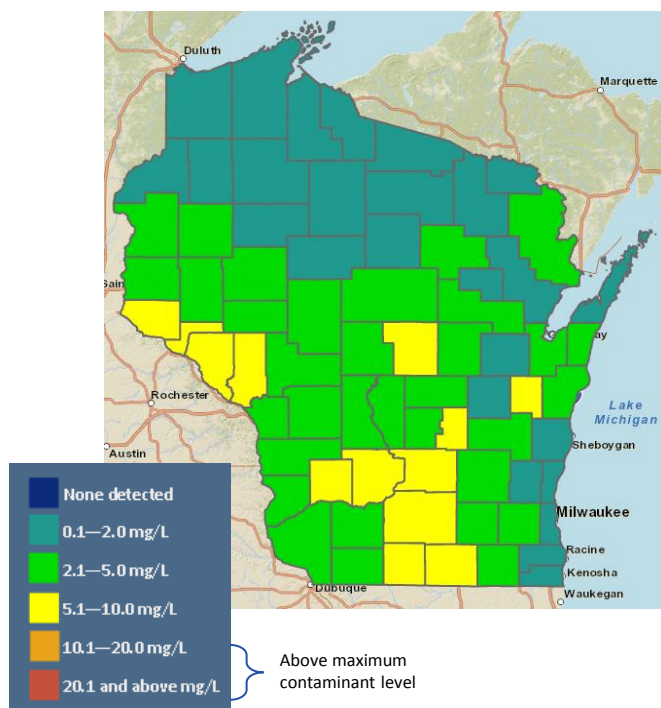
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WALWORTH COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **5.2**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **2.5%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

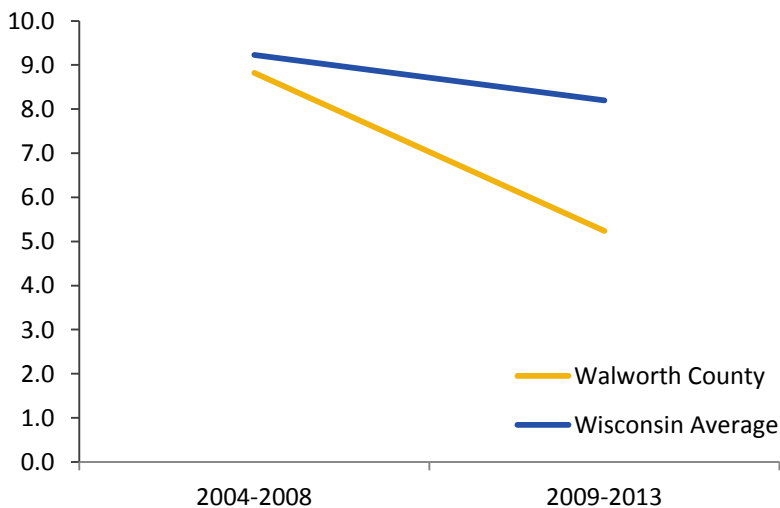
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

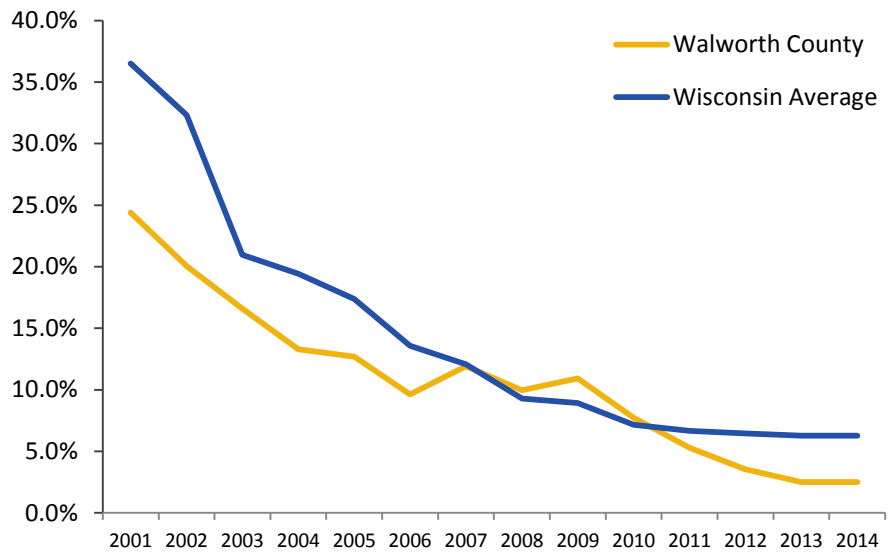
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

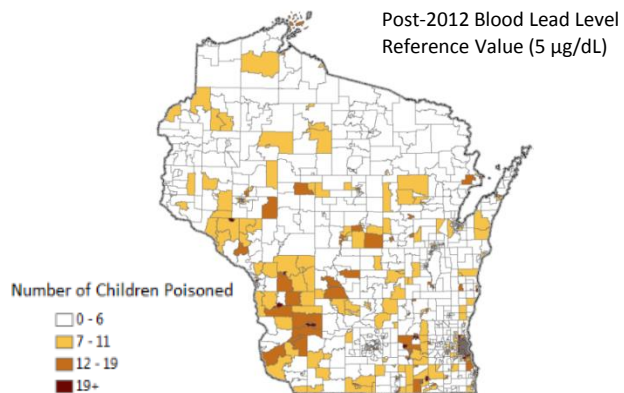
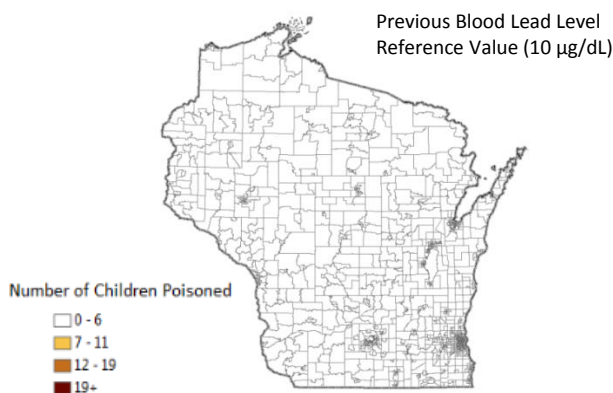
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

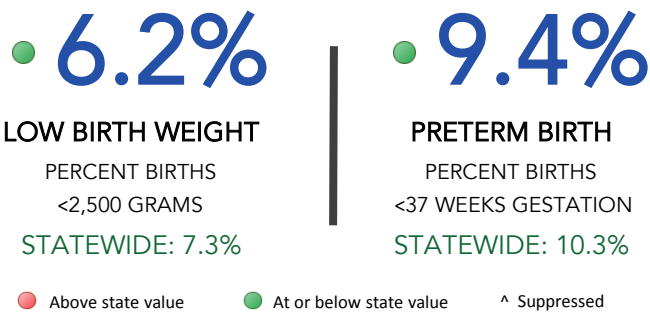
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WALWORTH COUNTY

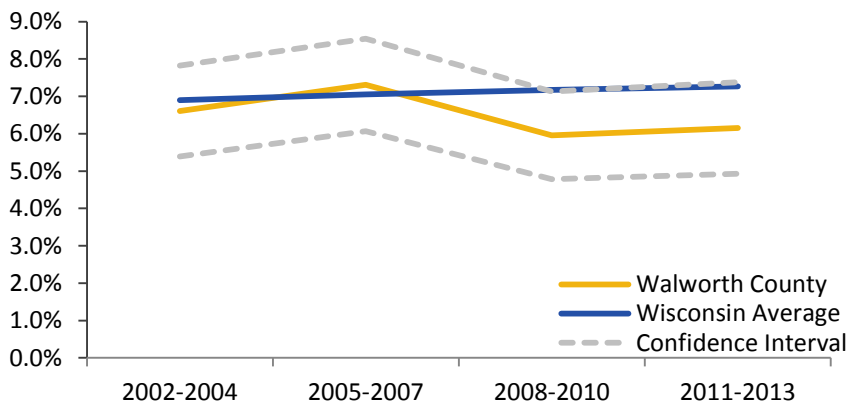
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

WALWORTH COUNTY

PRETERM BIRTH

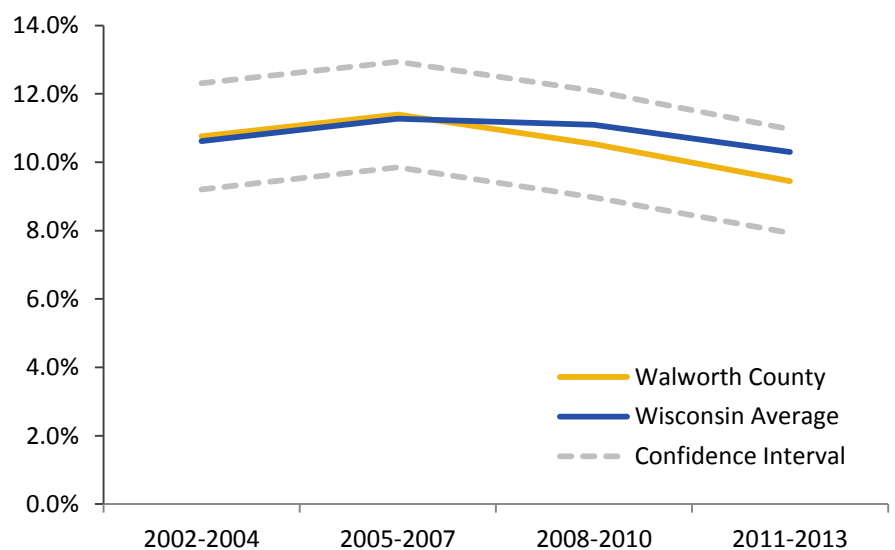
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WALWORTH COUNTY

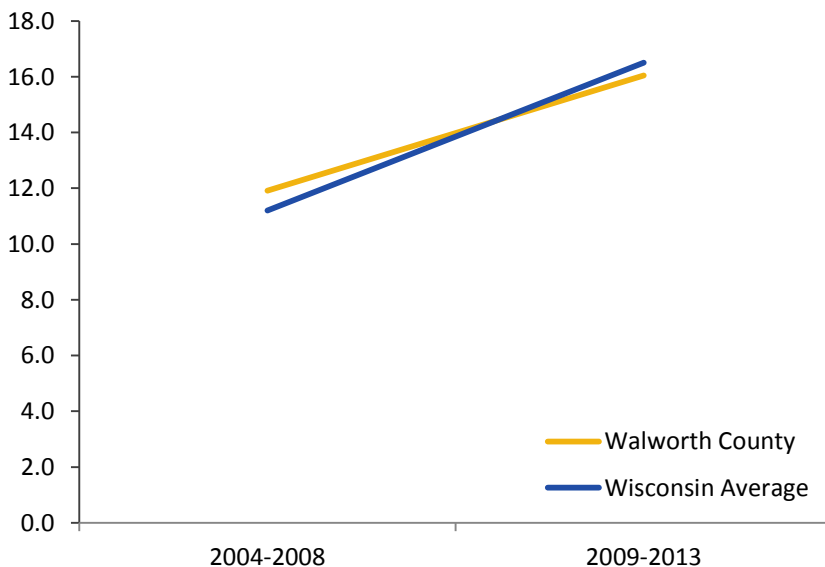
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.

<p>● 16.0</p> <p>HEAT STRESS RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 16.5</p>	<p>● 22.9</p> <p>MELANOMA RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 18.4</p>	<p>● 65.3</p> <p>LUNG CANCER RATE OF CASES PER 100,000 PEOPLE STATEWIDE: 62</p>	<p>● 291.0</p> <p>ASTHMA RATE OF ER VISITS PER 100,000 PEOPLE STATEWIDE: 376</p>
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● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



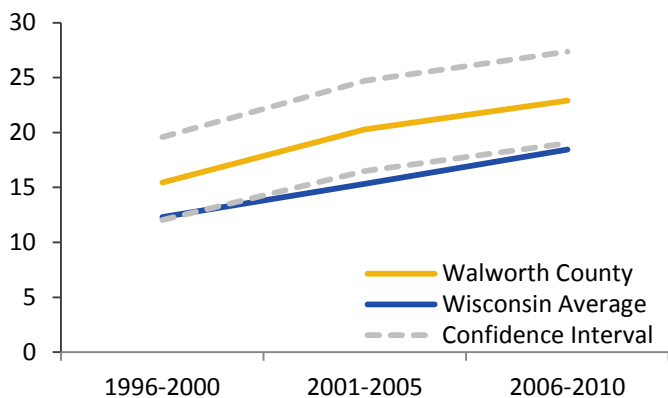


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



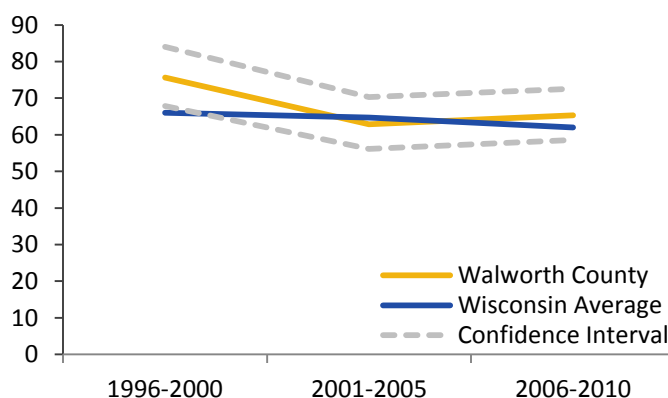
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



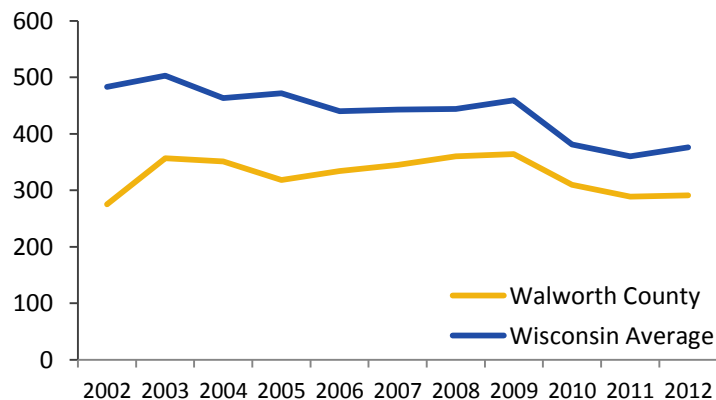
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WASHBURN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WASHBURN COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.1 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.8 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 32.9 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 0.0% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.7% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 12.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 19.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 10.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 62.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 583.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WASHBURN COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

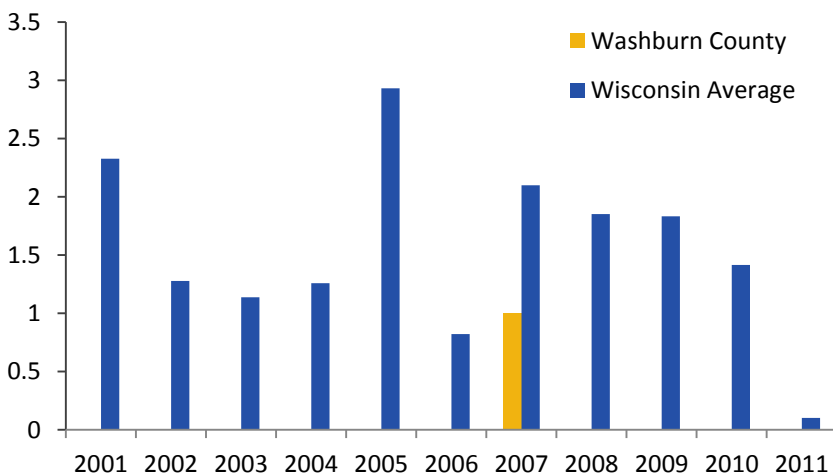
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **0.0**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **7.9**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

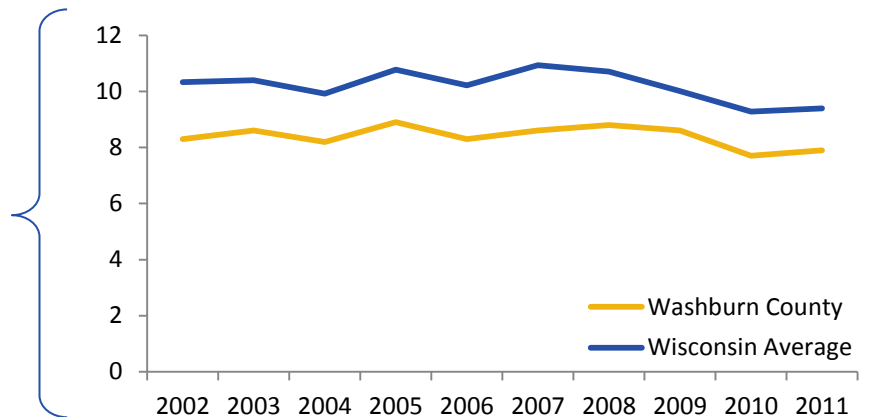
WASHBURN COUNTY

PARTICULATE MATTER 2.5

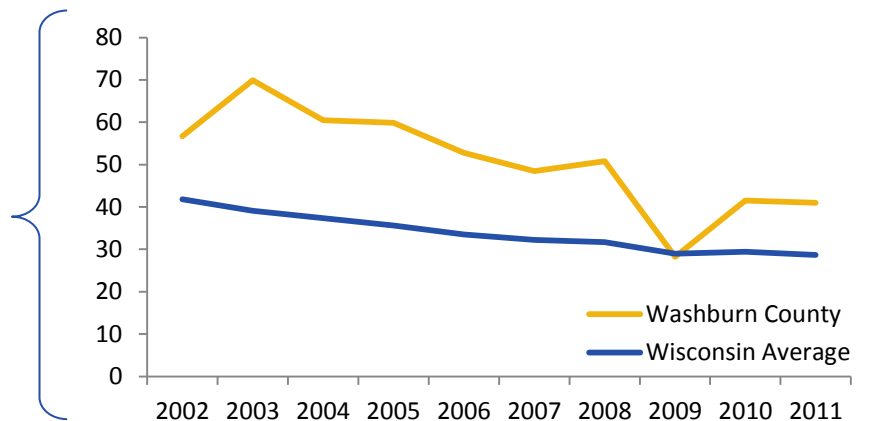
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

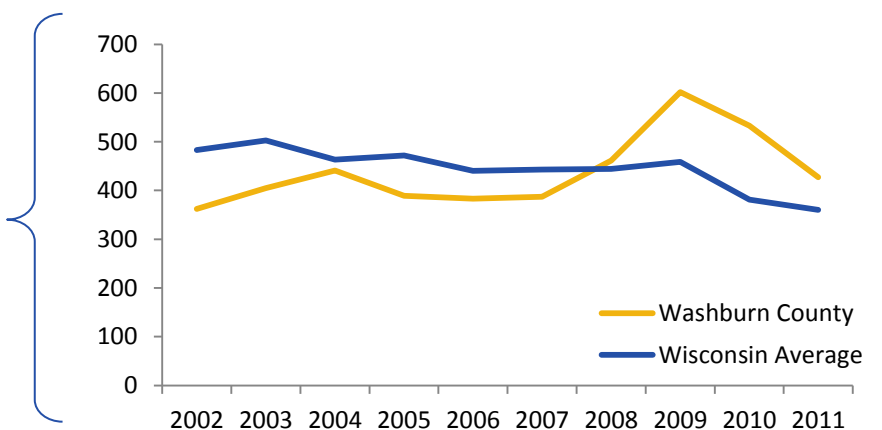
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



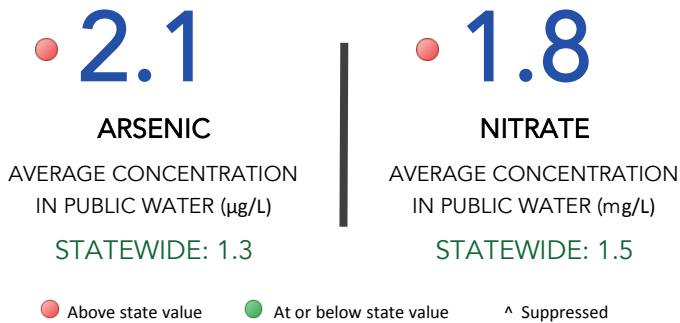
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WASHBURN COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

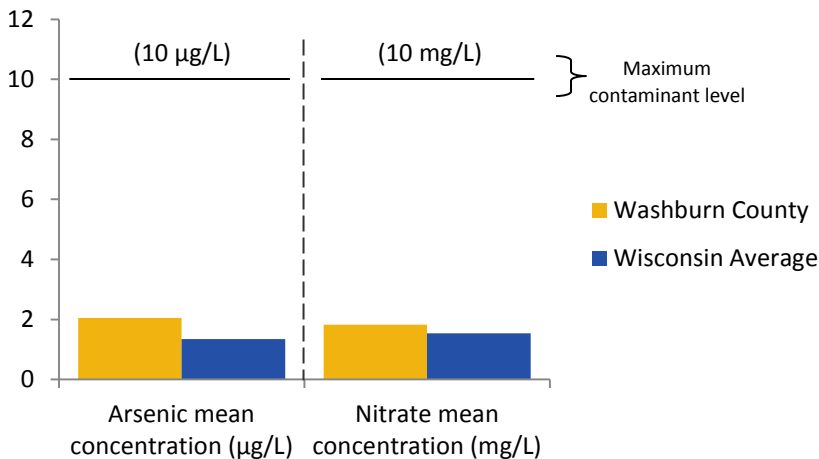
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY WASHBURN COUNTY

PRIVATE DRINKING WATER

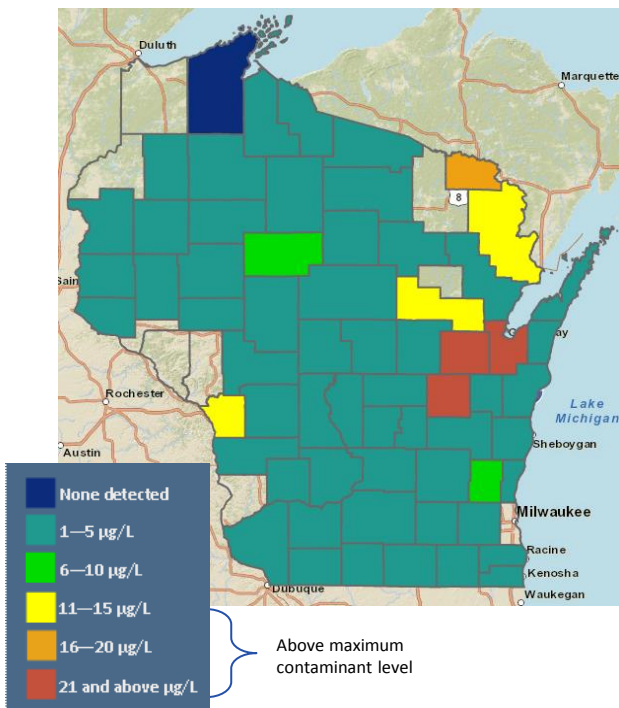
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

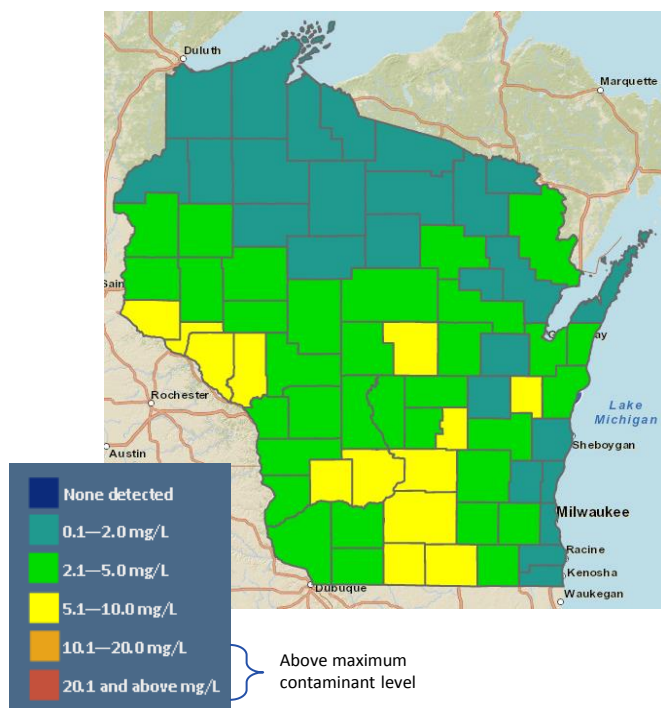
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WASHBURN COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **32.9**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **0.0%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

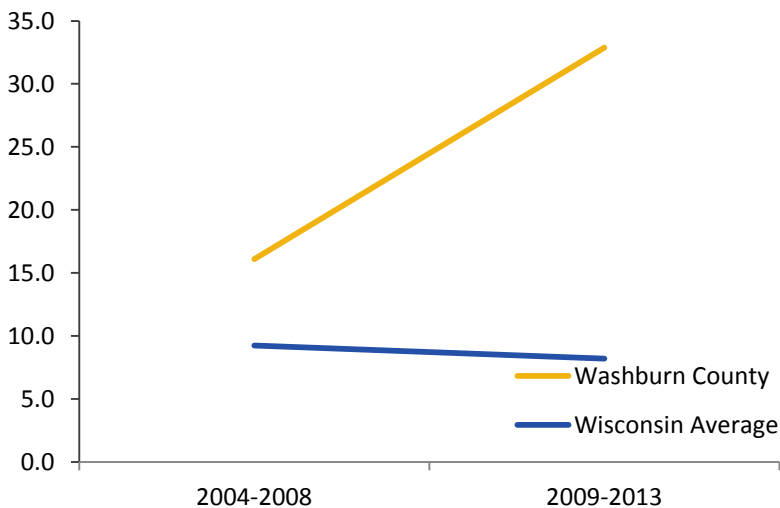
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

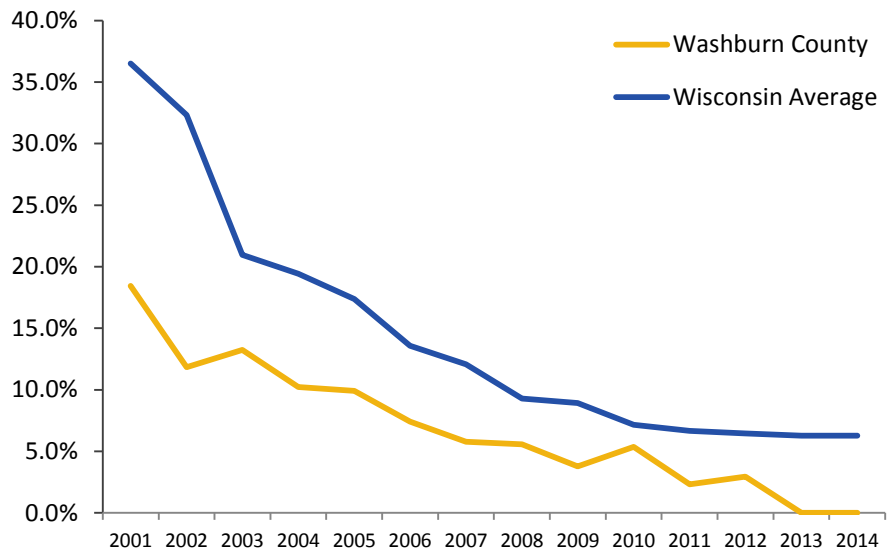
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

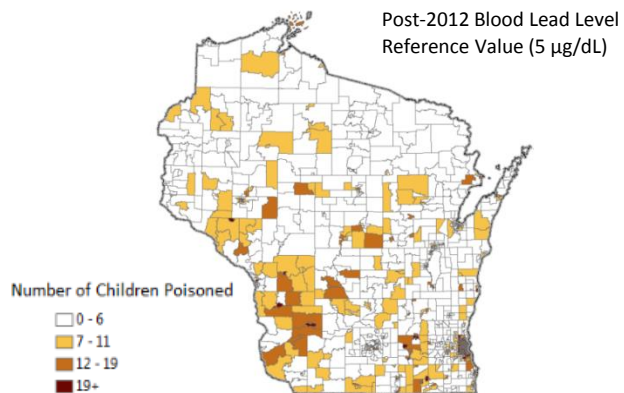
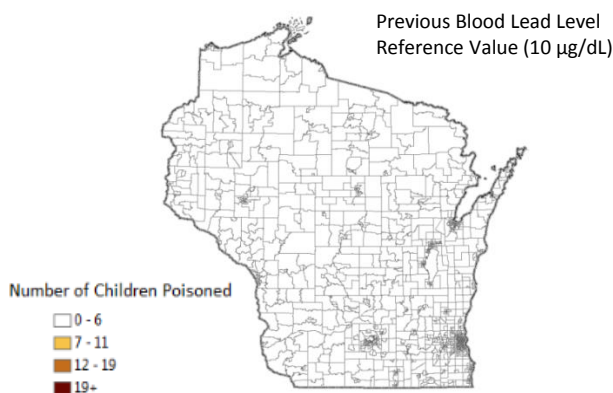
CHILDHOOD LEAD POISONING

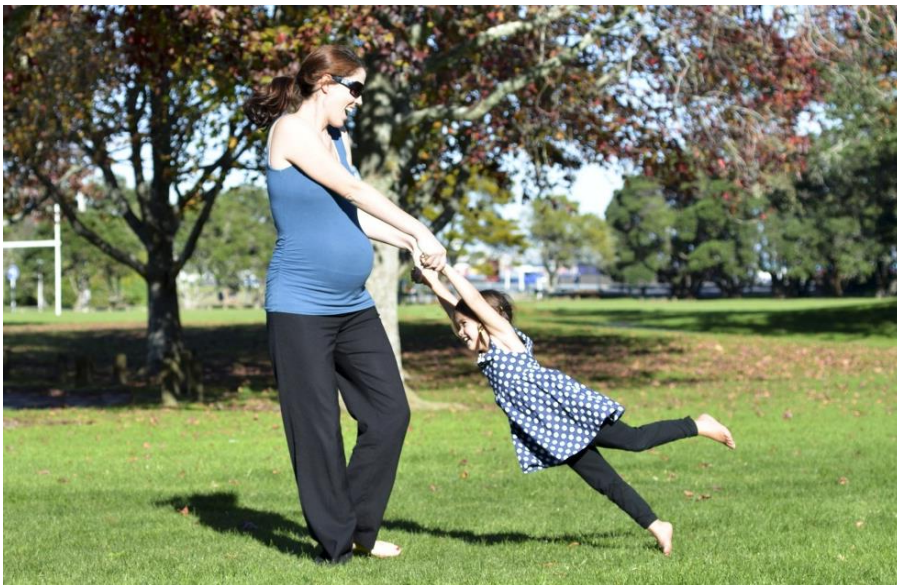
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

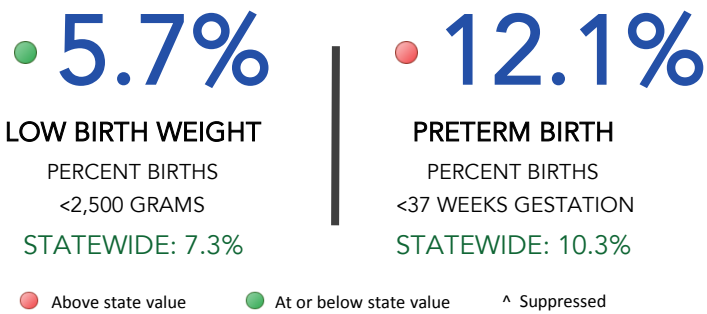
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WASHBURN COUNTY

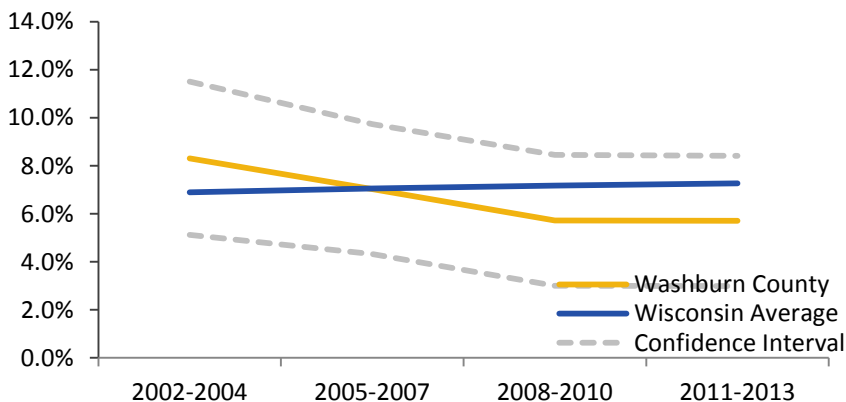
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES WASHBURN COUNTY

PRETERM BIRTH

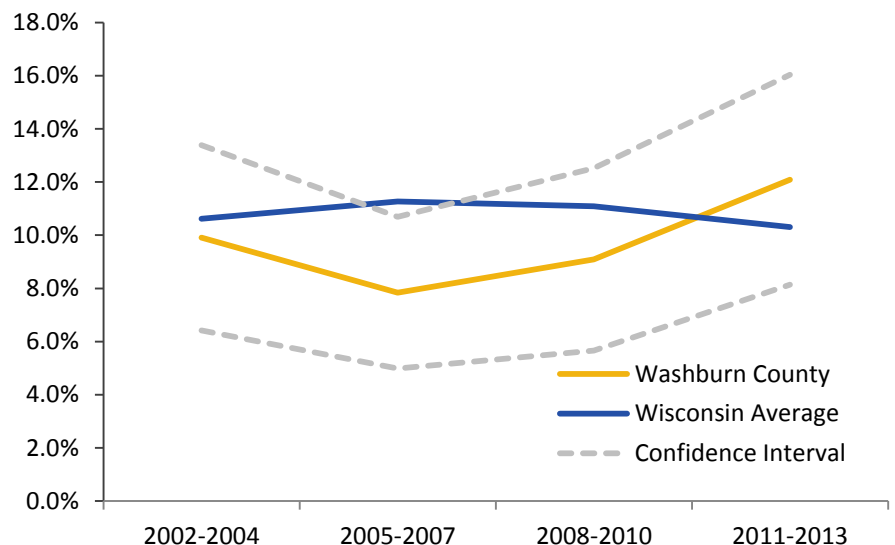
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

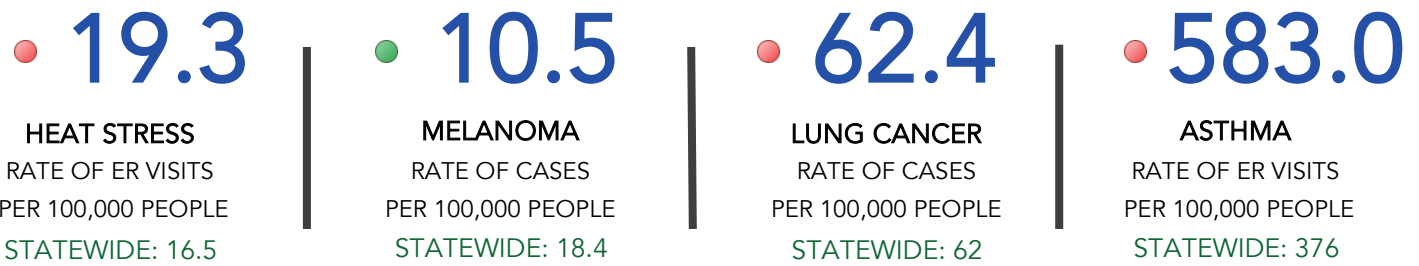
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WASHBURN COUNTY

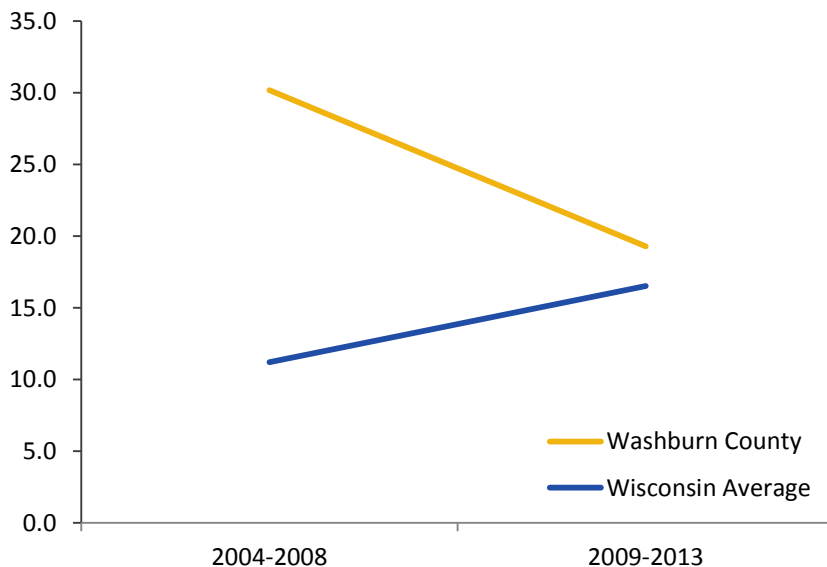
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



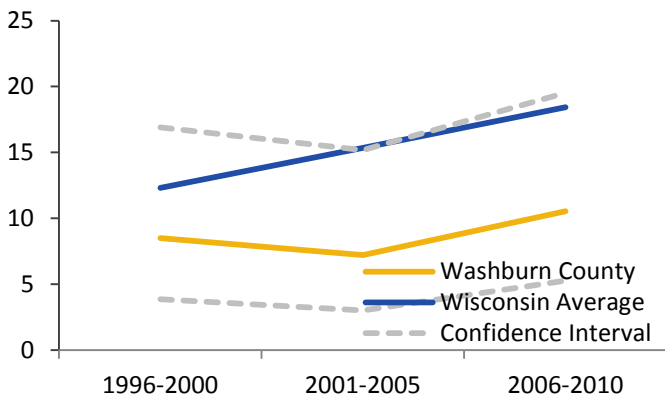


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



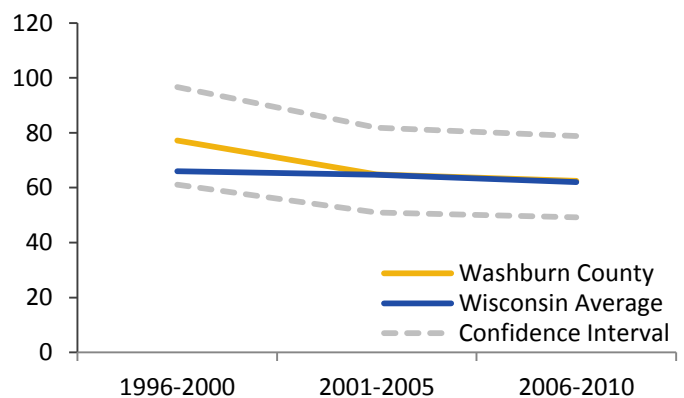
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



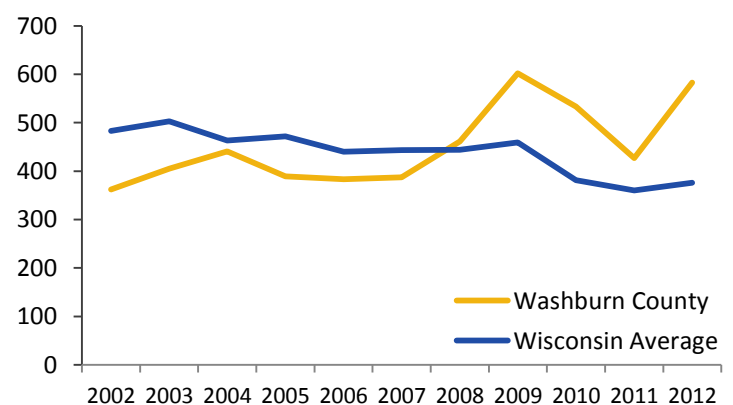
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

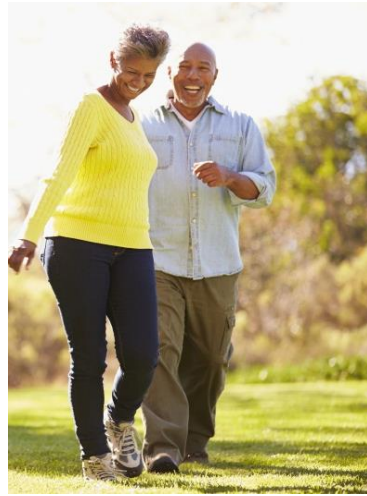
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WASHINGTON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

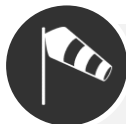
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WASHINGTON COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 1.6 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 6.3 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.3% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.8% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.1% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 10.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 20.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 58.3 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 175.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WASHINGTON COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 2.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

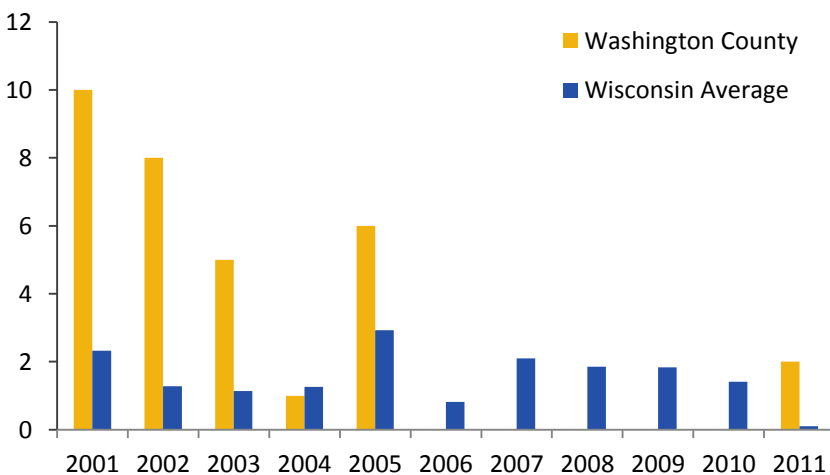
● 10.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

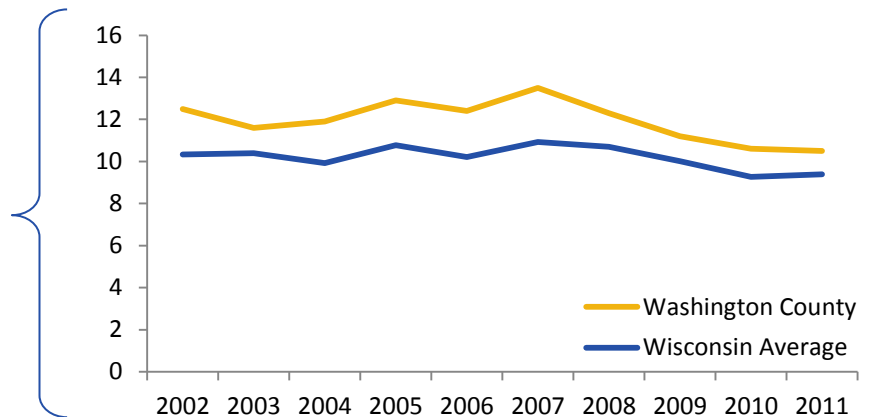
WASHINGTON COUNTY

PARTICULATE MATTER 2.5

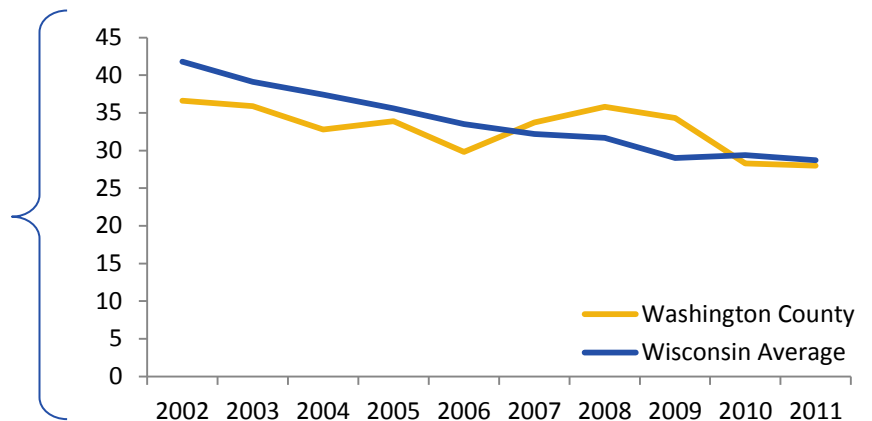
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

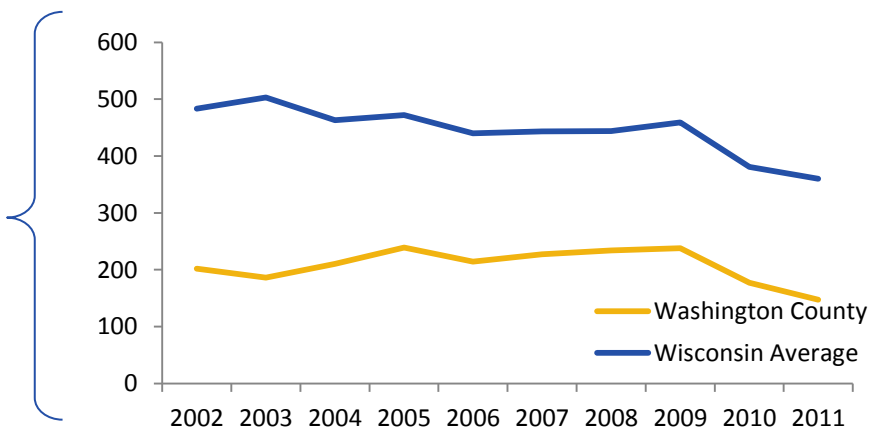
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



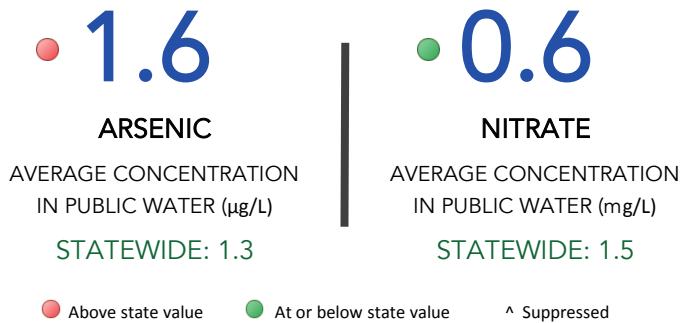
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WASHINGTON COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

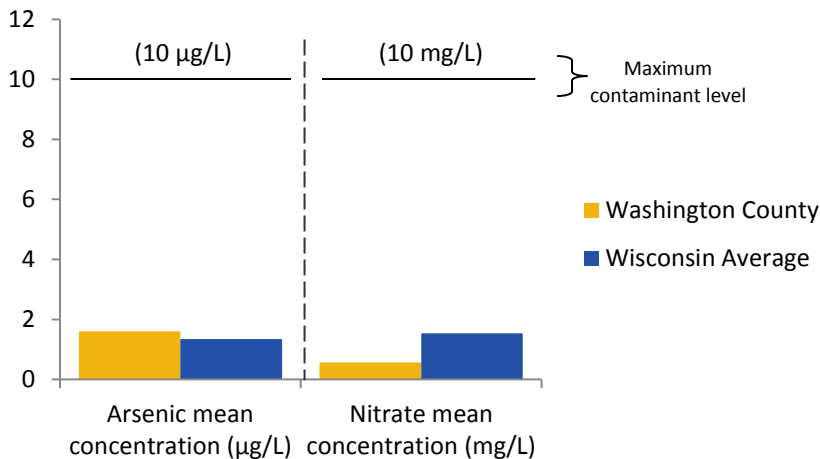
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY WASHINGTON COUNTY

PRIVATE DRINKING WATER

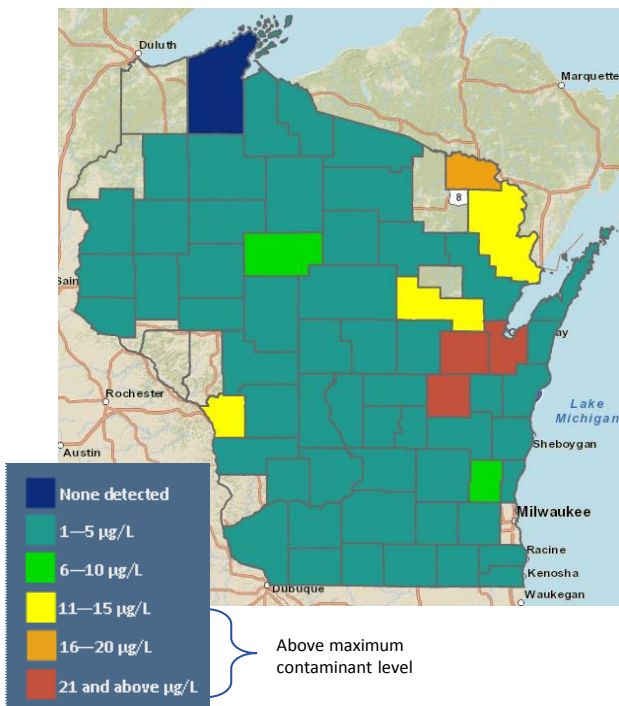
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

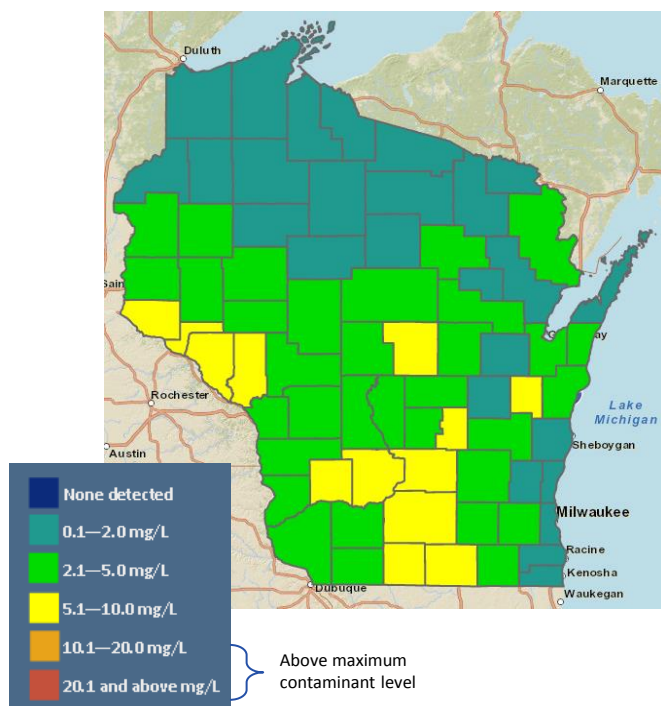
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WASHINGTON COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **6.3**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

● **1.3%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

STATEWIDE: 8.2

STATEWIDE: 6.3%

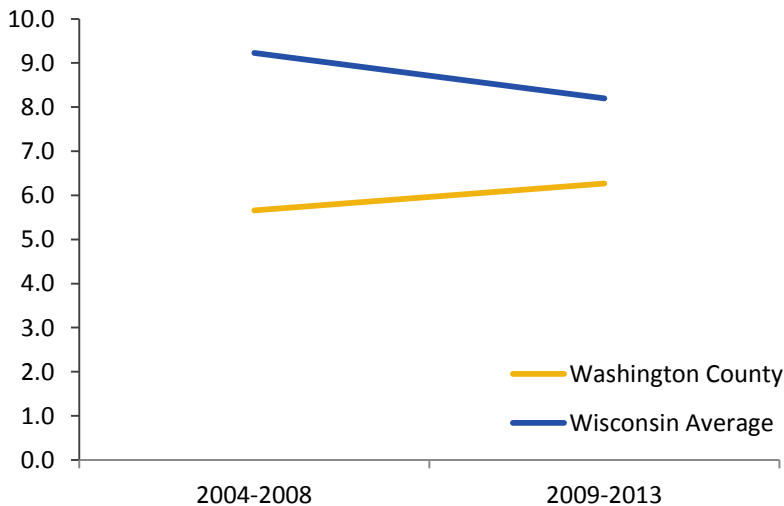
● Above state value ● At or below state value ^ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

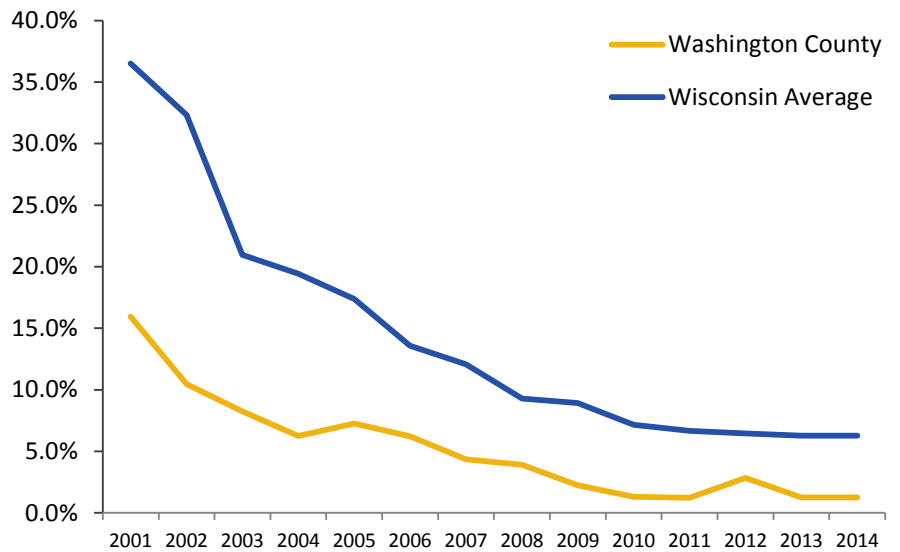
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

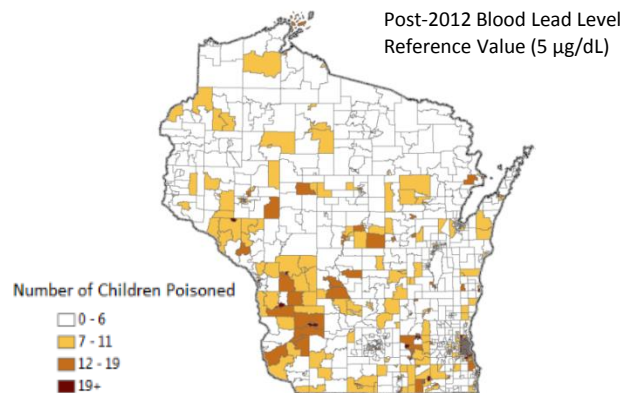
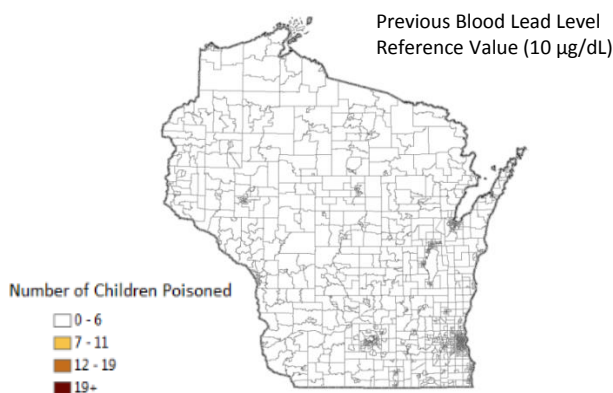
CHILDHOOD LEAD POISONING

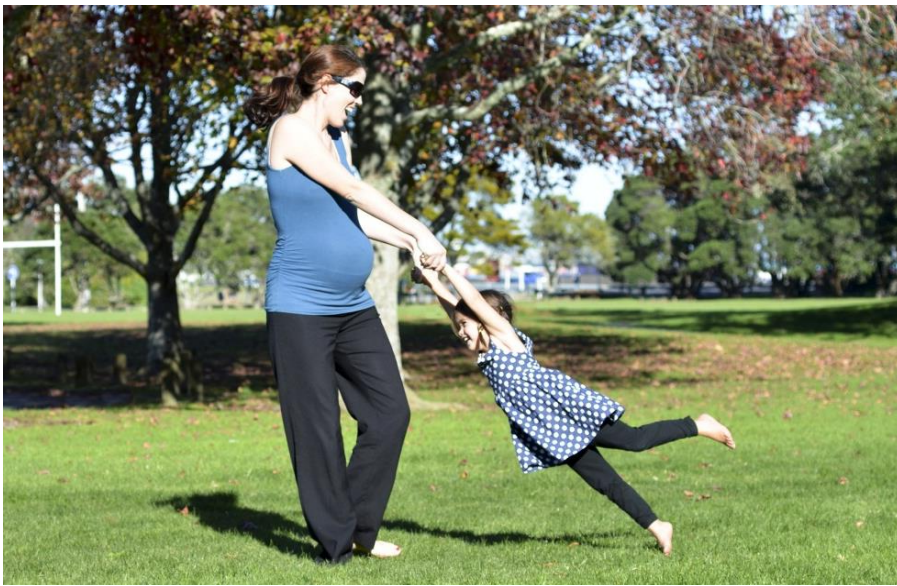
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

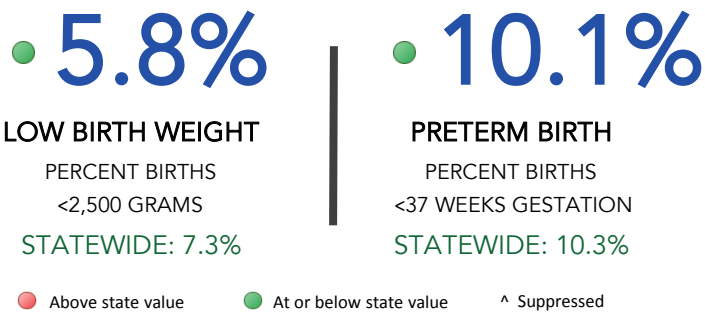
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WASHINGTON COUNTY

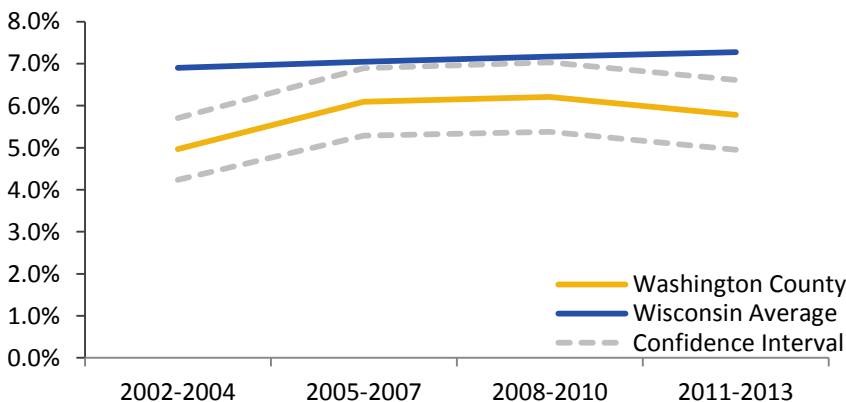
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES WASHINGTON COUNTY

PRETERM BIRTH

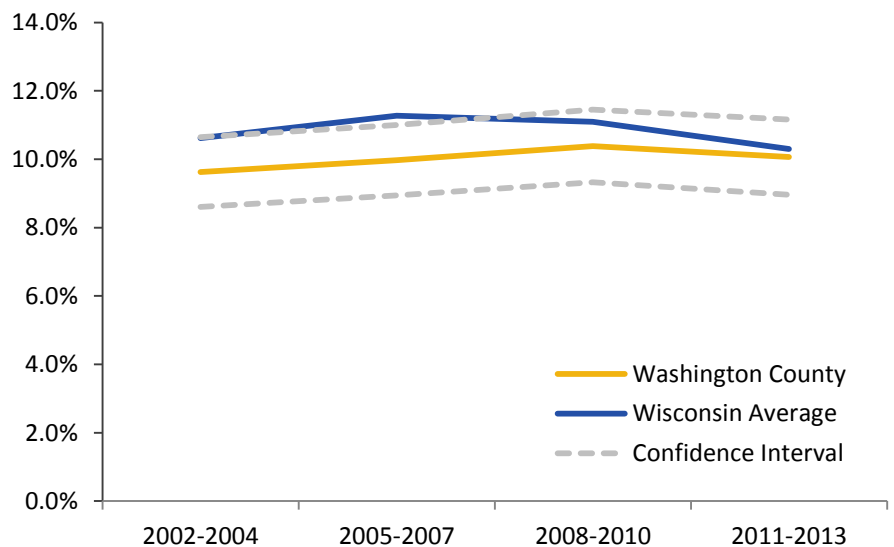
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

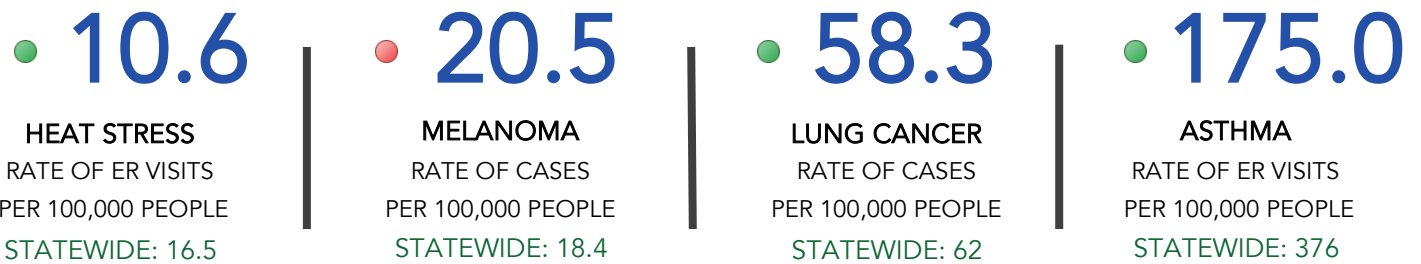
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WASHINGTON COUNTY

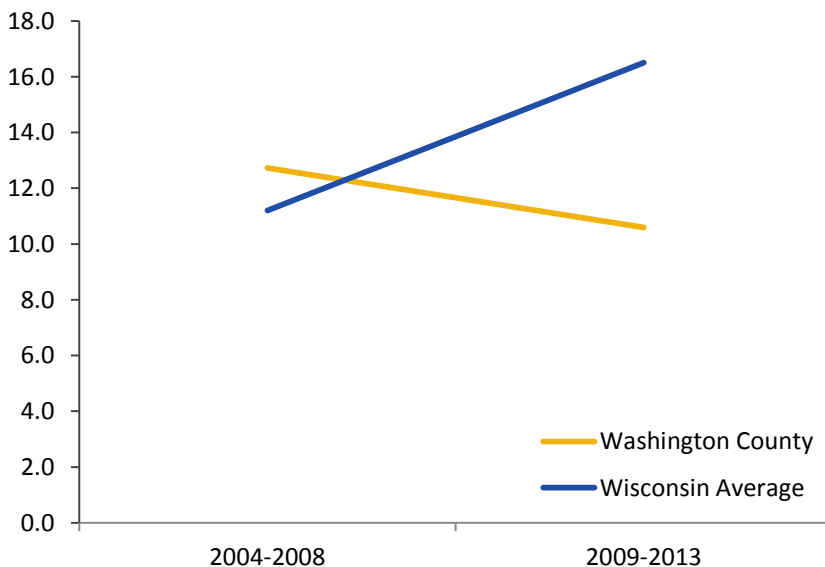
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht

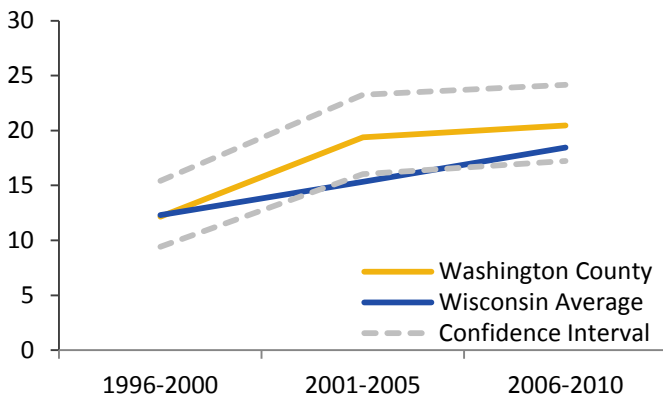


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



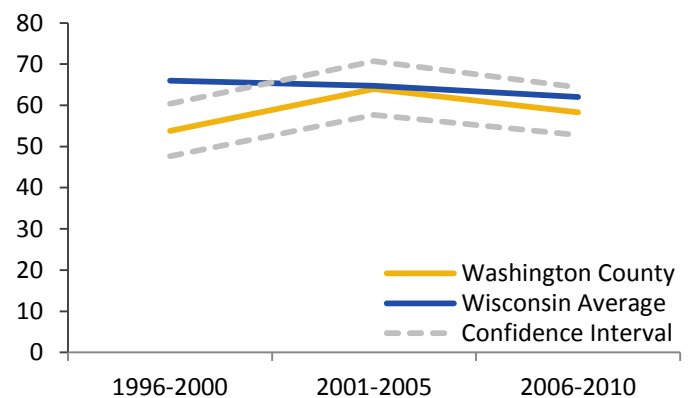
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



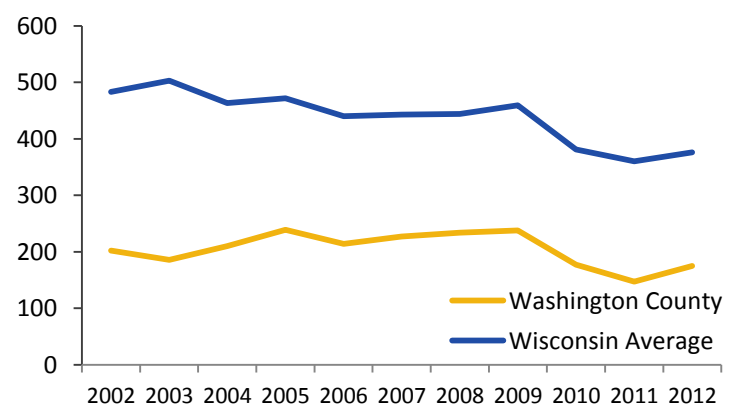
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WAUKESHA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

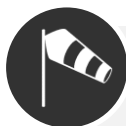
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WAUKESHA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 1.1 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 2.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.4 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.1 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 2.2% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 10.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 25.5 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 58.4 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 169.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WAUKESHA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

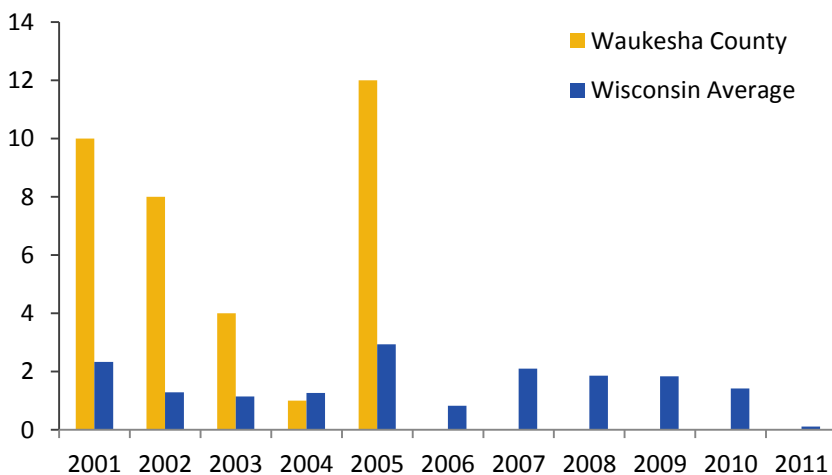
● **0.0**
OZONE
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.7

● **1.1**
PARTICULATE MATTER 2.5
 ANNUAL DAYS ABOVE STANDARD
 STATEWIDE: 0.1

● **11.1**
PARTICULATE MATTER 2.5
 ANNUAL AVERAGE (µg/m³)
 STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

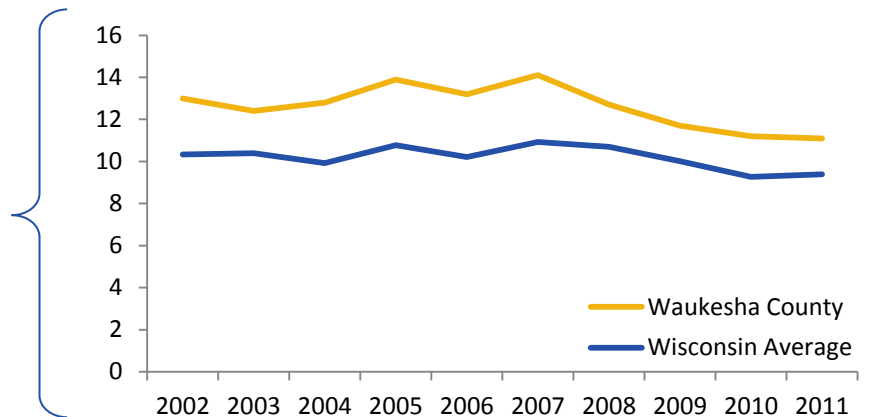
WAUKESHA COUNTY

PARTICULATE MATTER 2.5

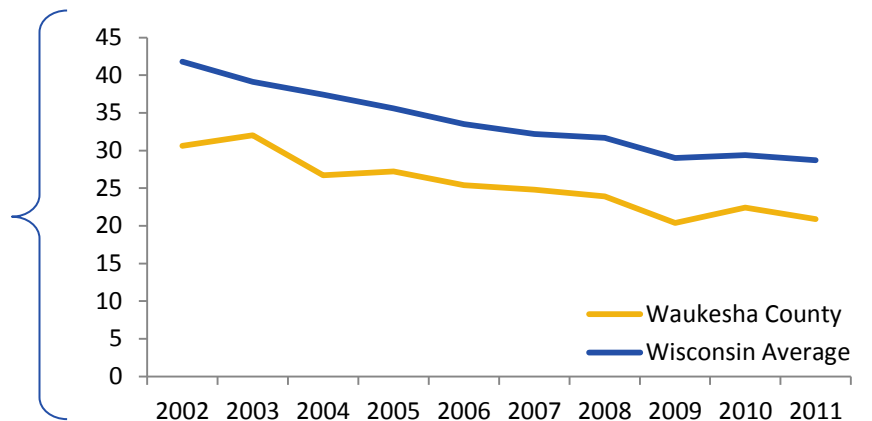
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

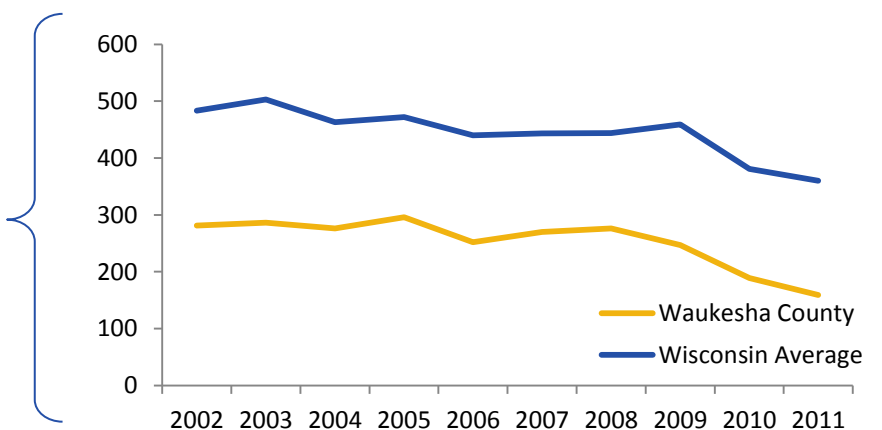
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



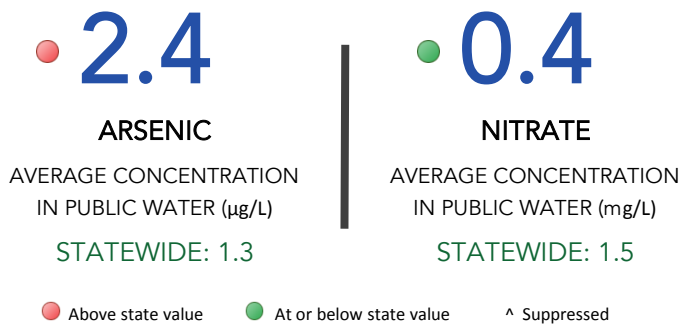
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WAUKESHA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

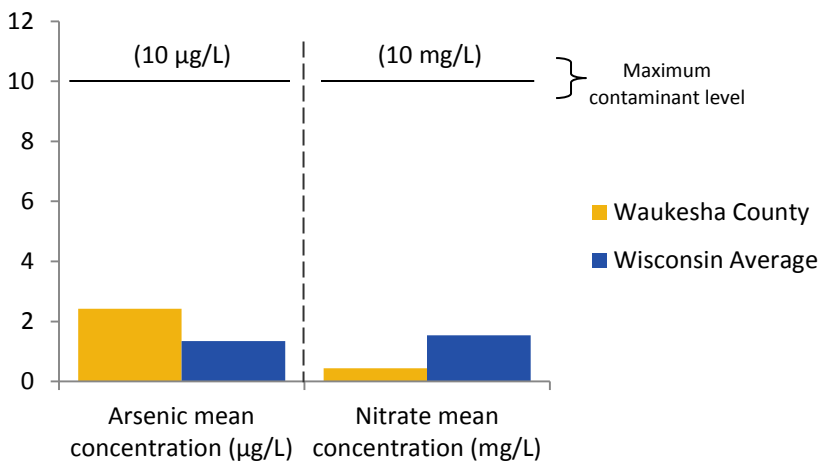
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY WAUKESHA COUNTY

PRIVATE DRINKING WATER

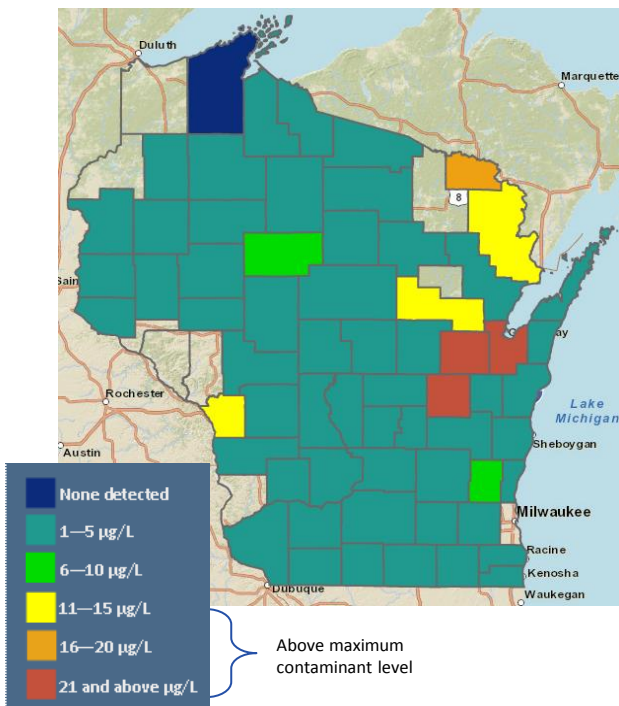
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

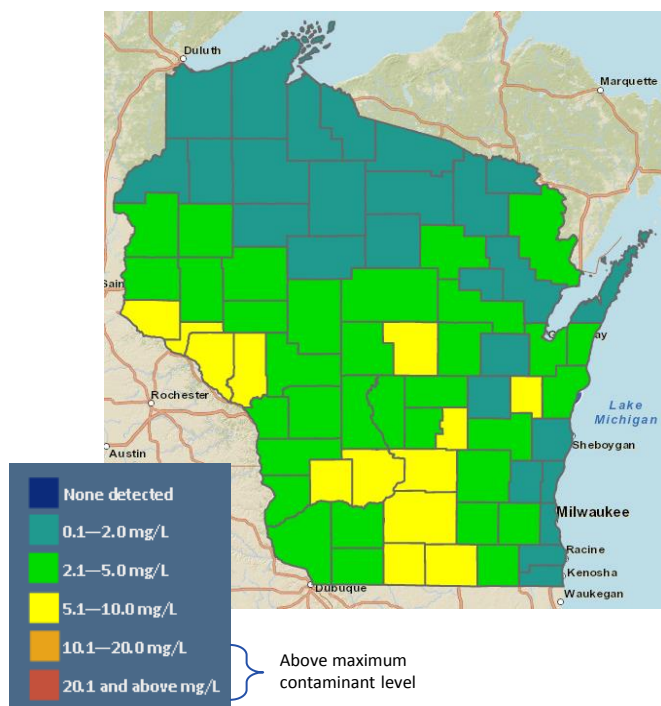
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

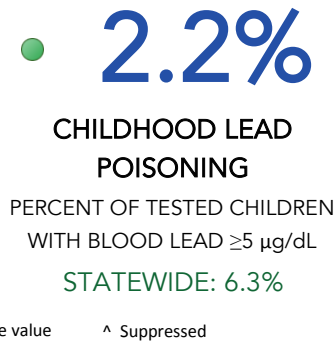
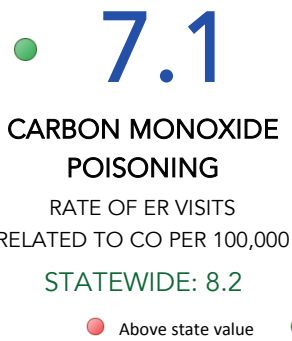


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WAUKESHA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

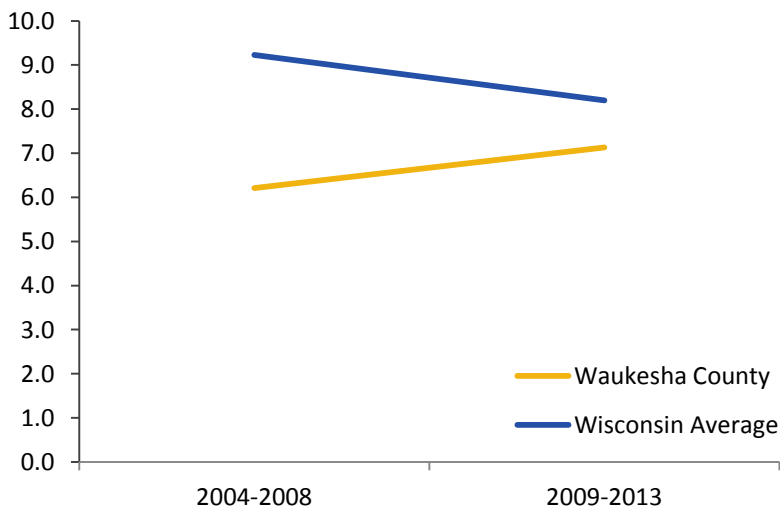


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. § 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

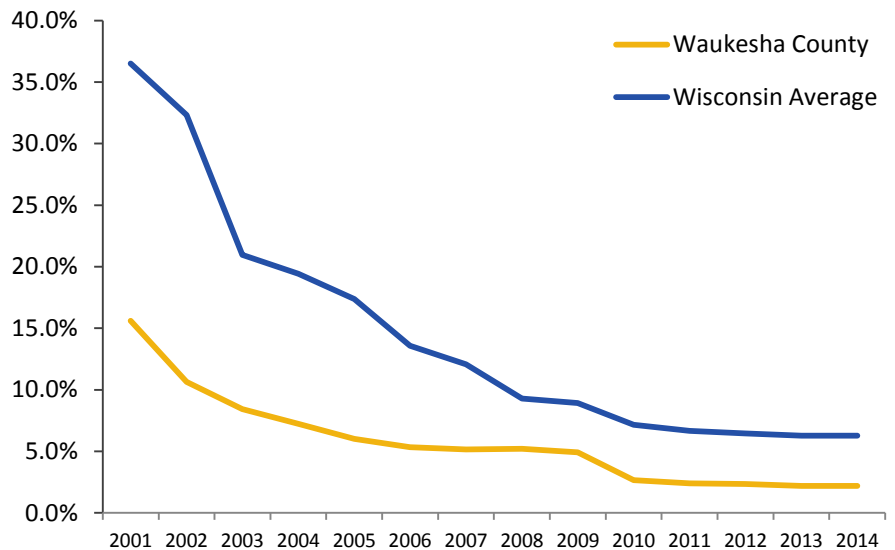
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

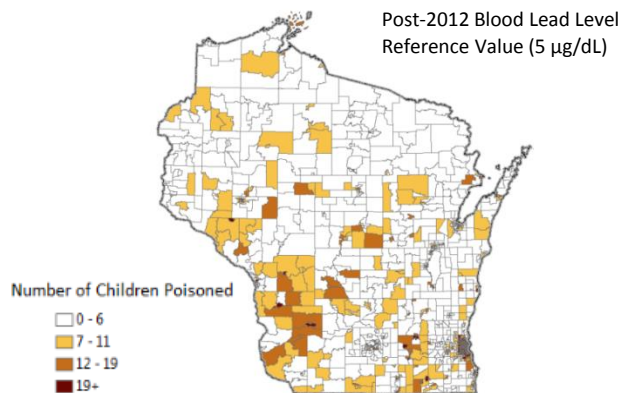
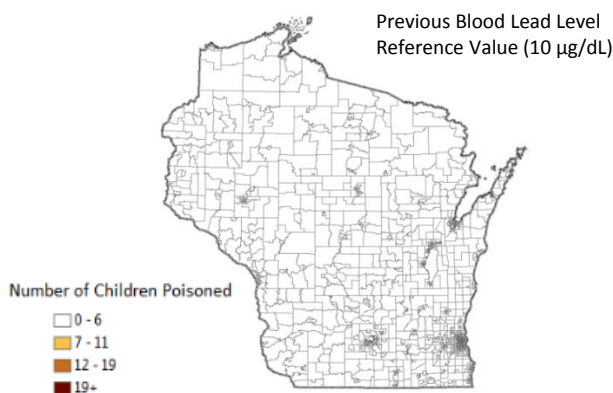
CHILDHOOD LEAD POISONING

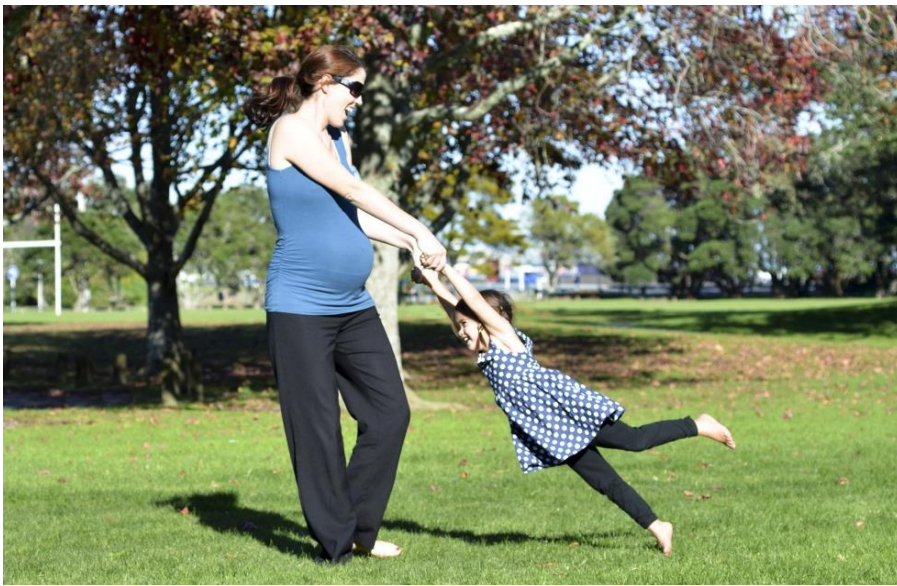
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WAUKESHA COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.5%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.9%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

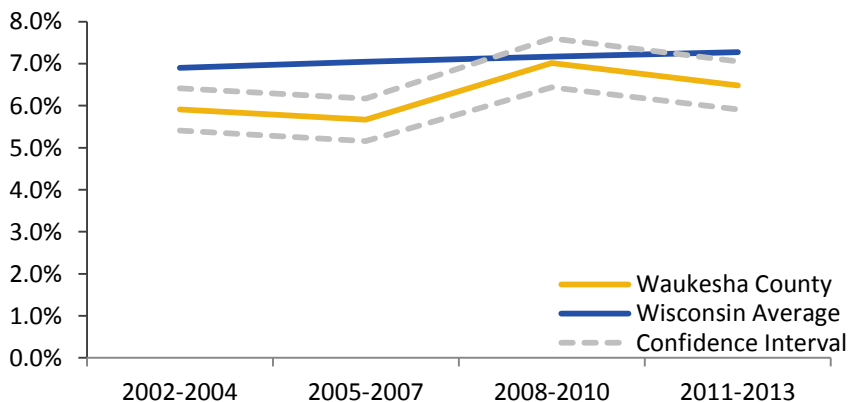
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

WAUKESHA COUNTY

PRETERM BIRTH

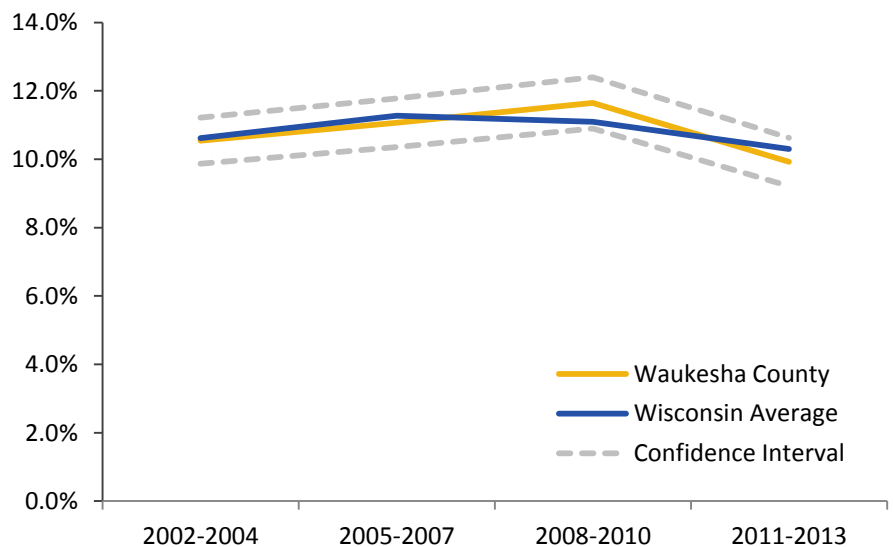
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

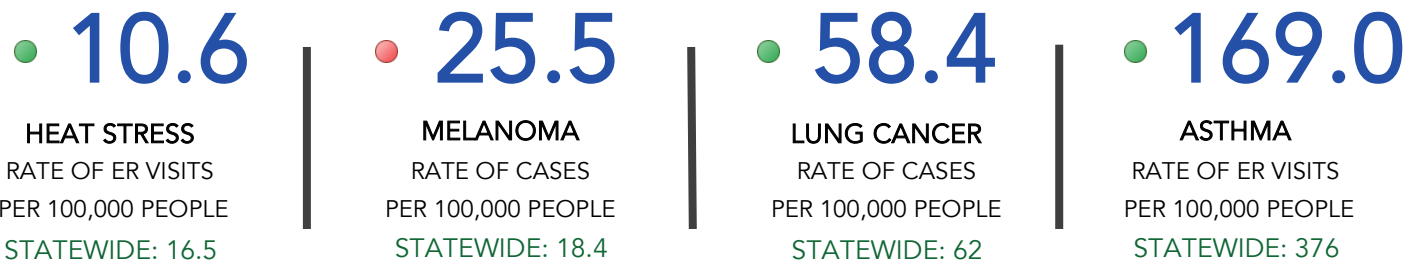
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WAUKESHA COUNTY

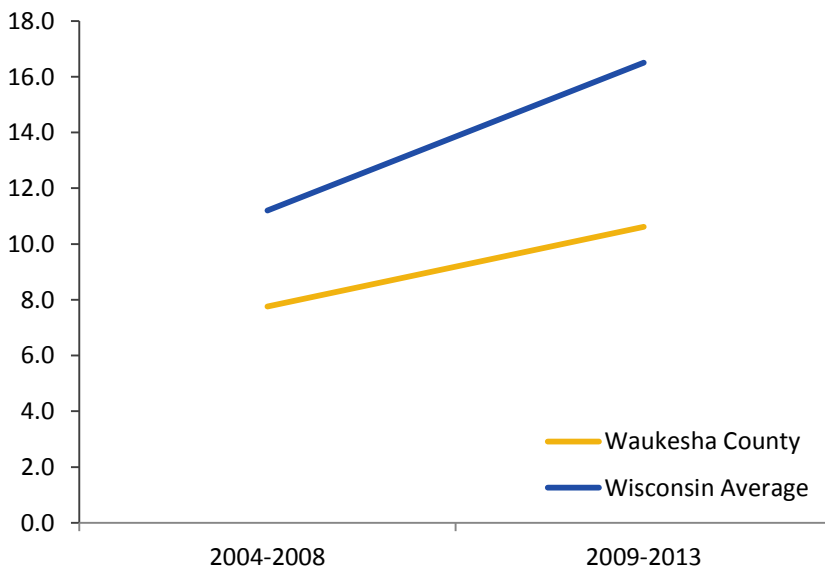
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



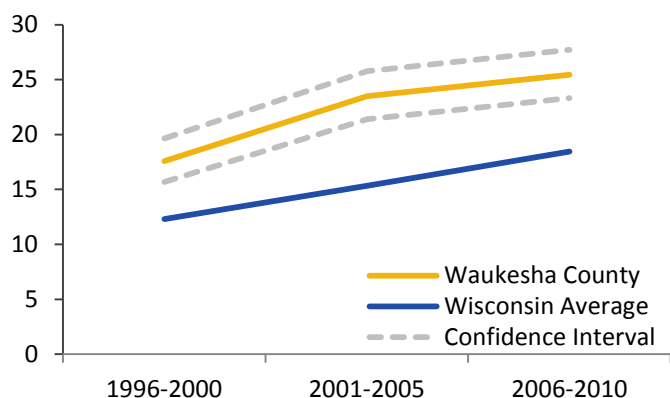


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



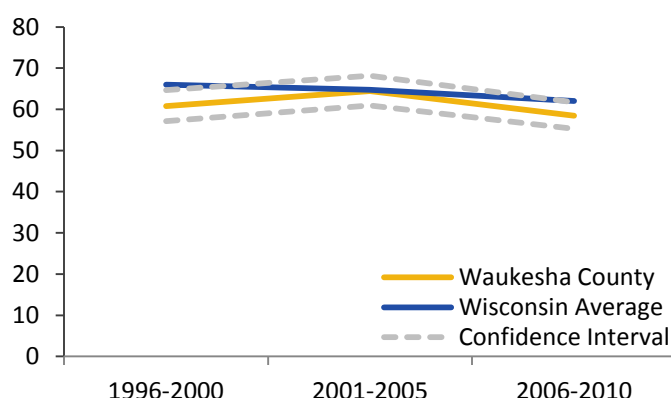
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



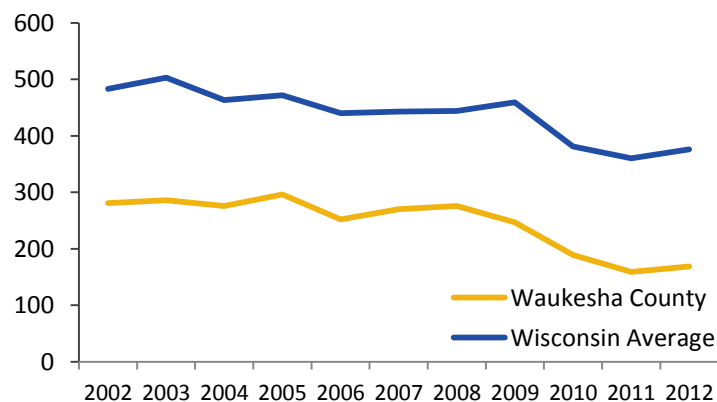
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

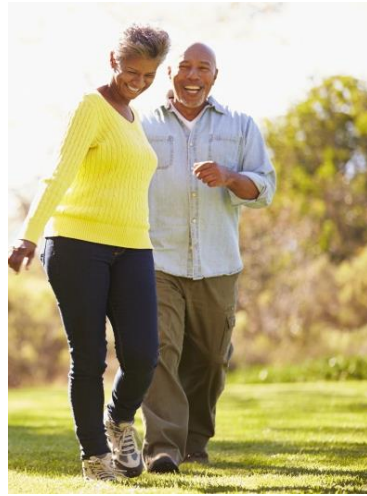
Jeff Phillips, Bureau of Environmental and Occupational Health, Wisconsin Department of Health Services

Sarah Mattes, Tobacco Prevention and Control Program, Wisconsin Department of Health Services

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension



State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WAUPACA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

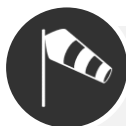
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WAUPACA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 3.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.5 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.3 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 6.4% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 10.2% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 21.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 20.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 67.7 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 445.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WAUPACA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

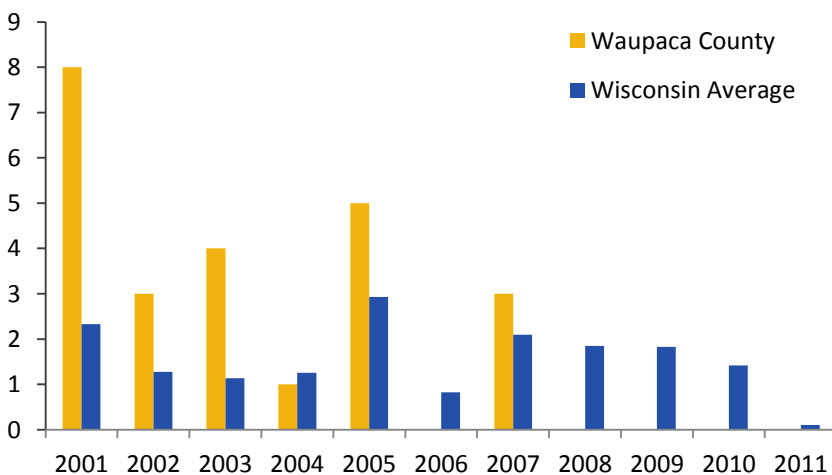
● 9.7

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

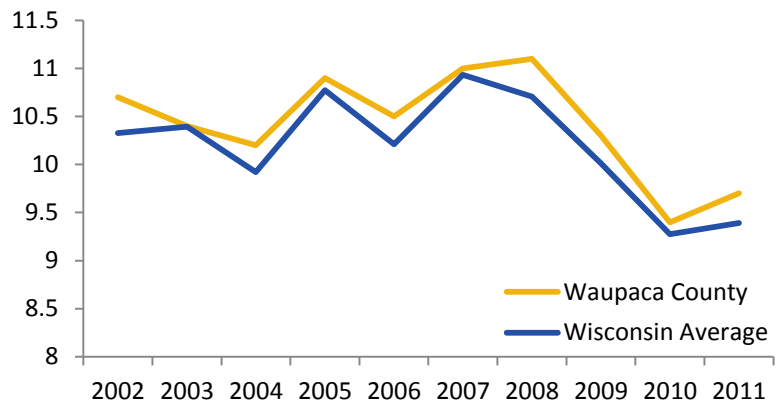
WAUPACA COUNTY

PARTICULATE MATTER 2.5

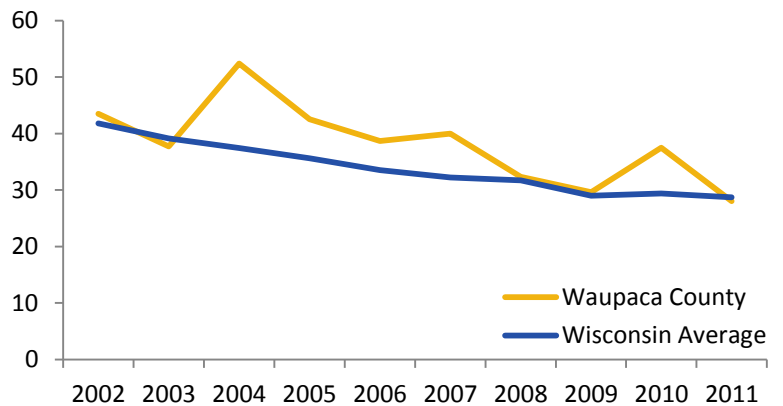
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

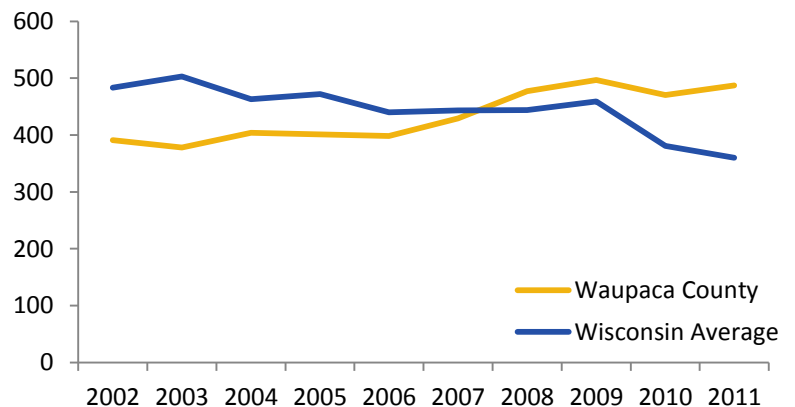
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



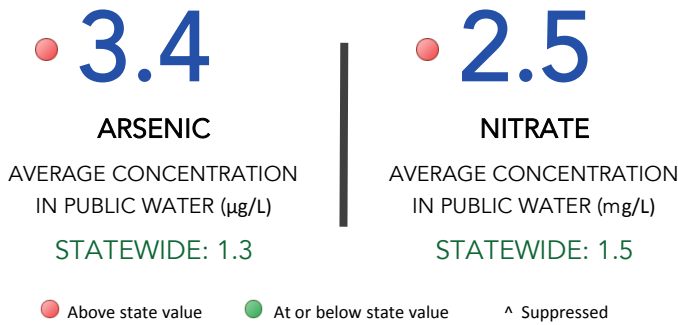
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WAUPACA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

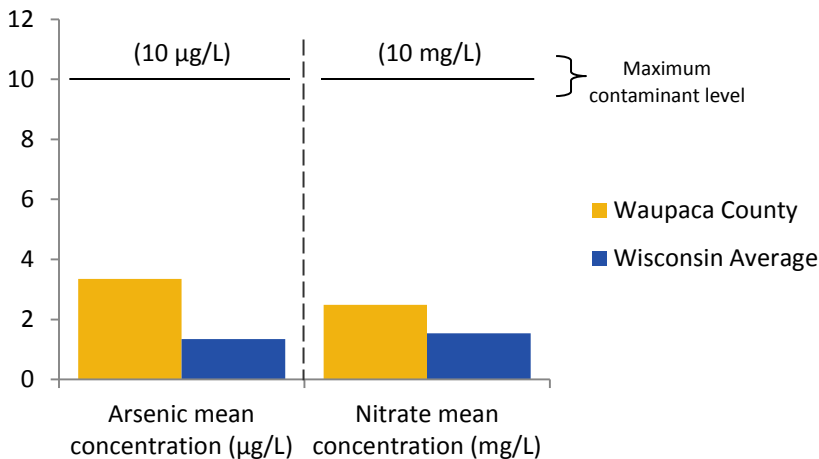
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY WAUPACA COUNTY

PRIVATE DRINKING WATER

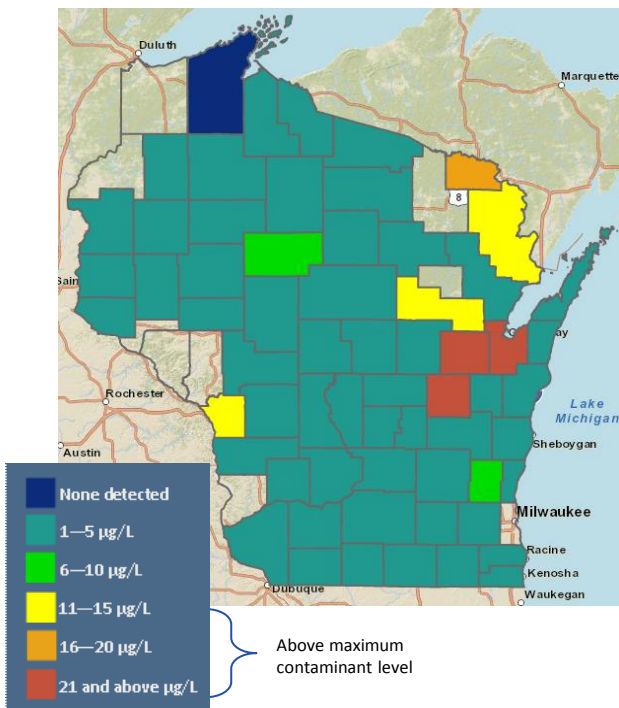
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

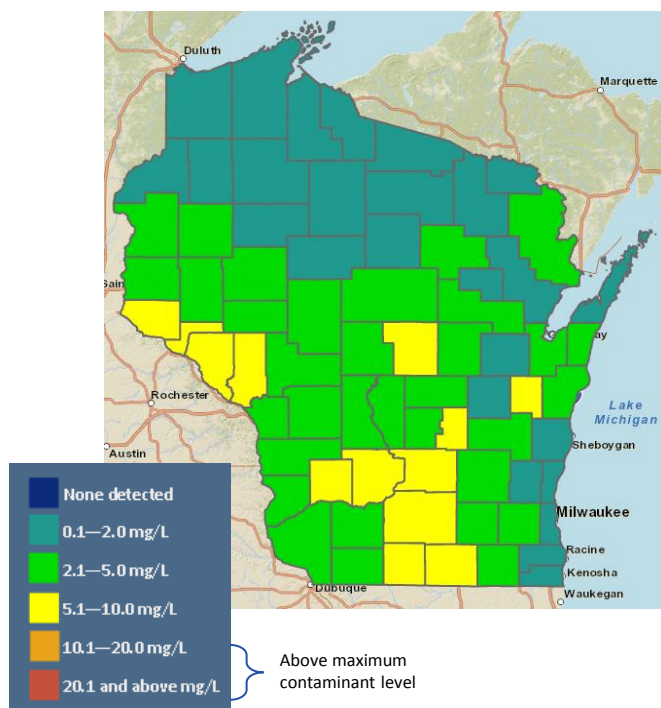
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WAUPACA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **10.3**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 8.2

● **6.4%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.3%

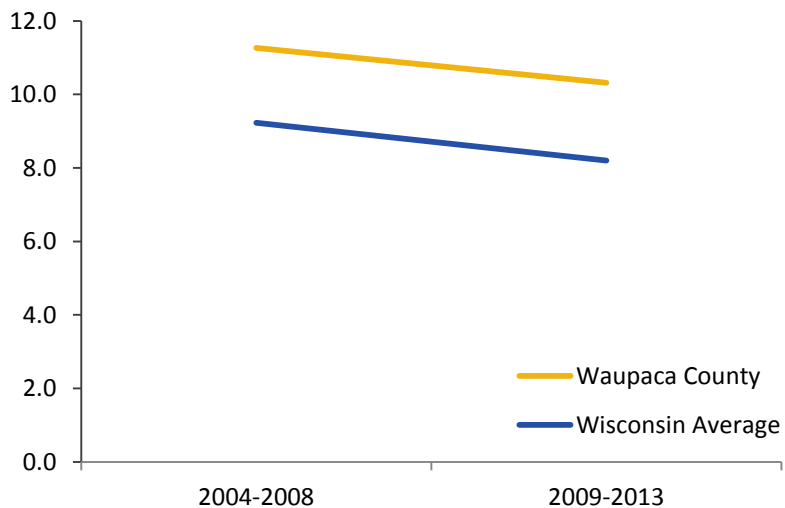
● Above state value ● At or below state value ▲ Suppressed

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
 RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

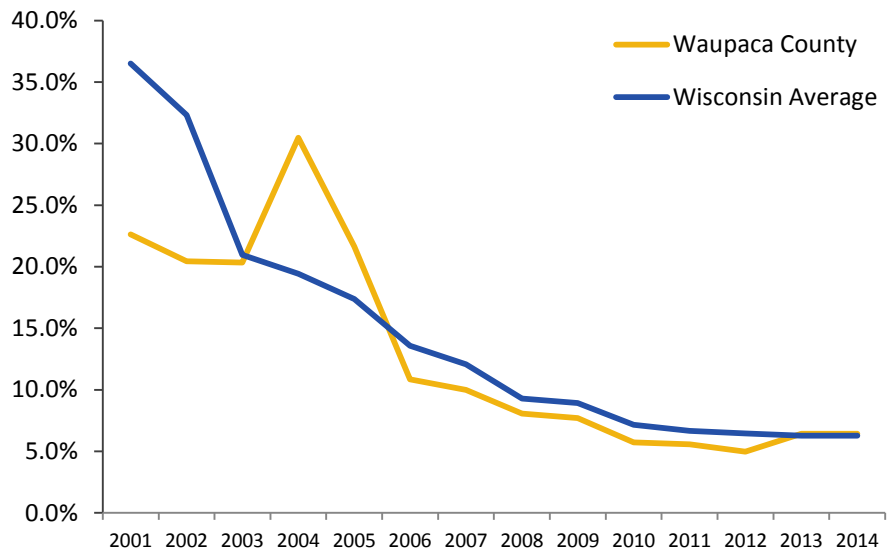
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

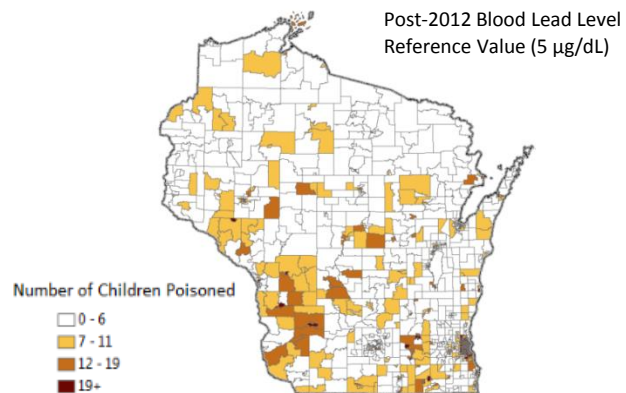
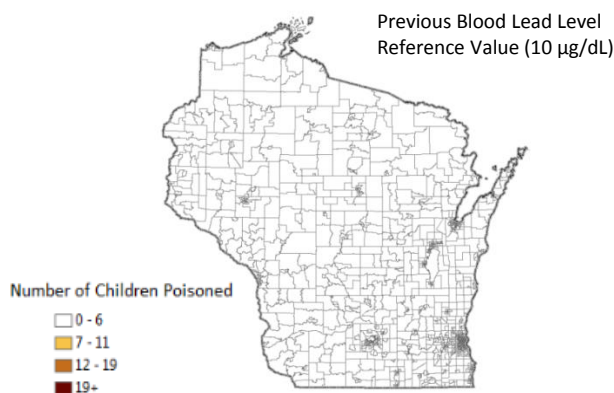
CHILDHOOD LEAD POISONING

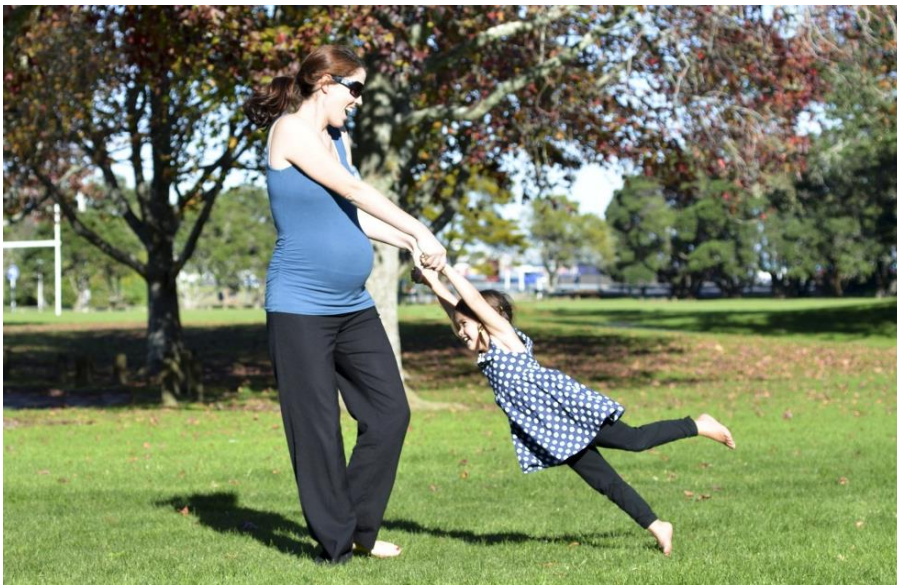
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

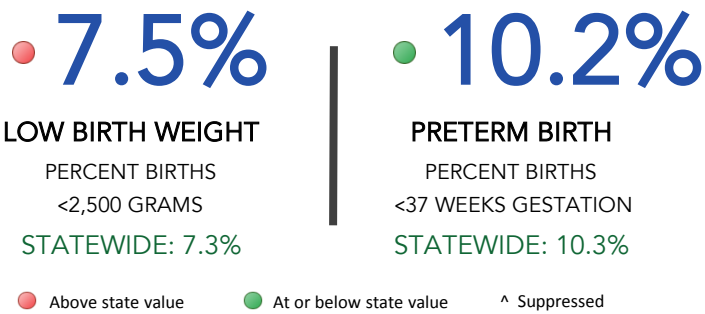
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WAUPACA COUNTY

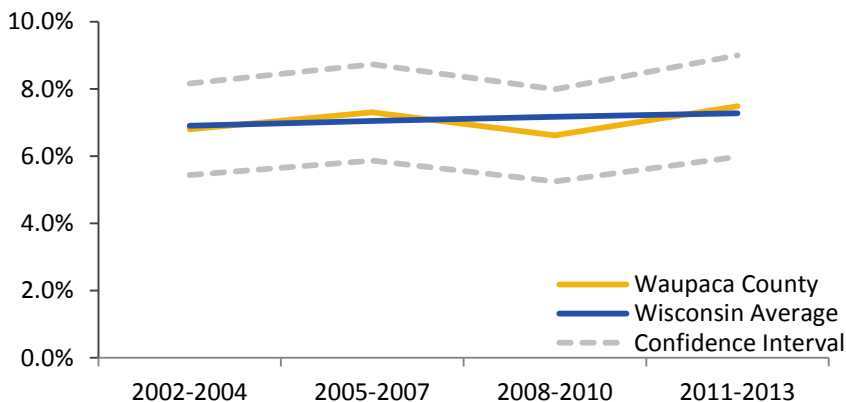
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES

WAUPACA COUNTY

PRETERM BIRTH

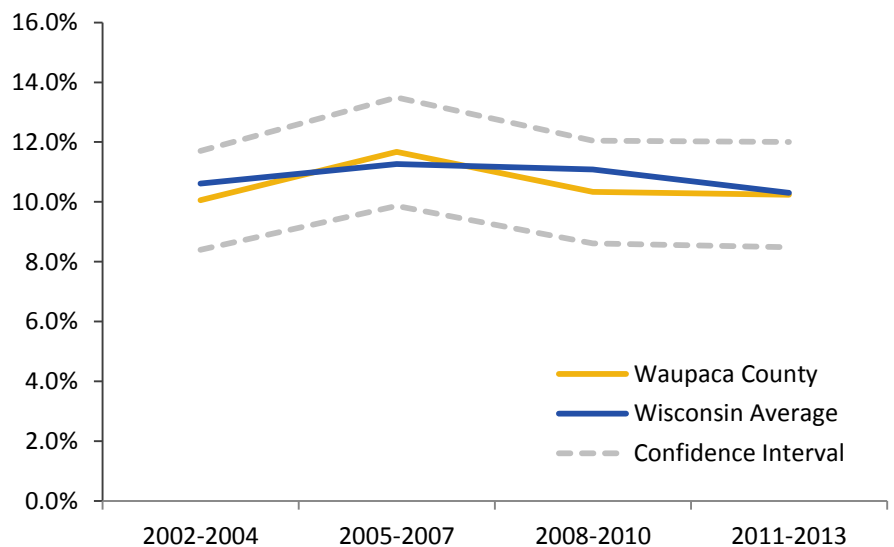
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

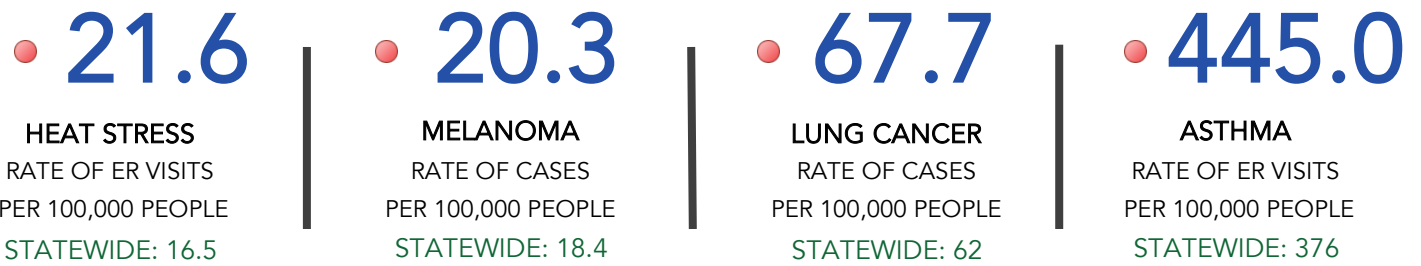
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WAUPACA COUNTY

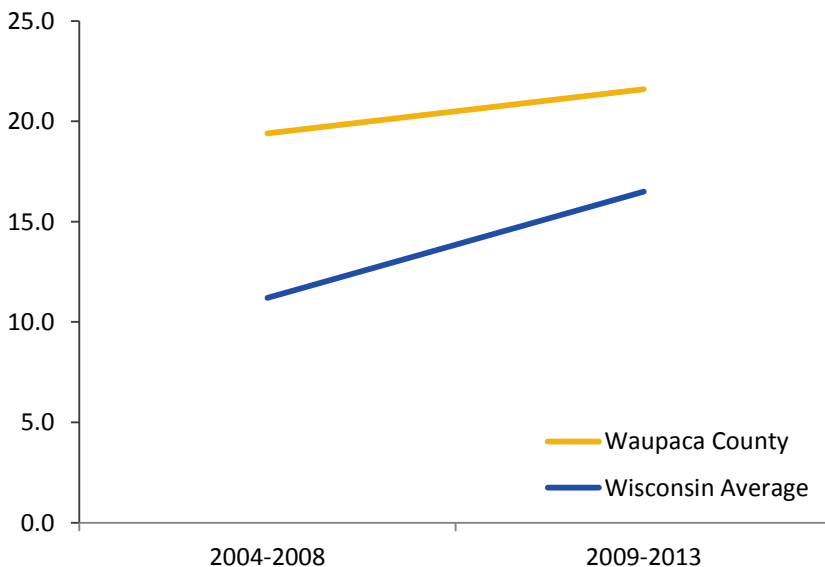
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



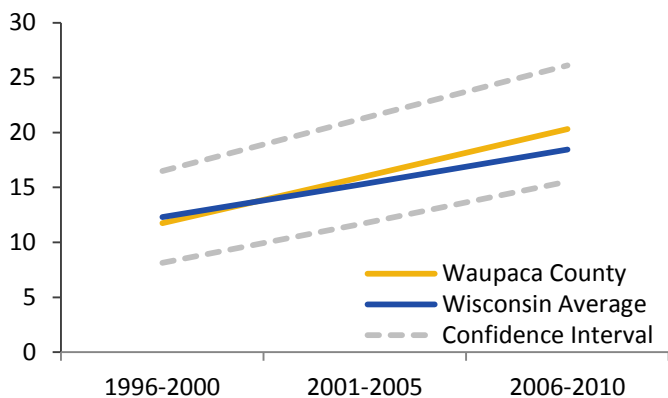


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



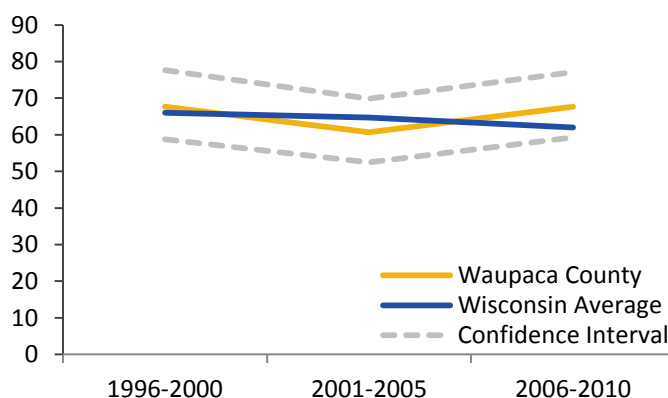
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



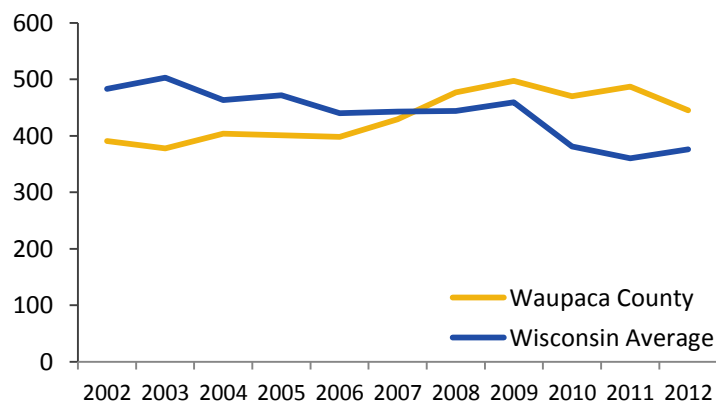
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WAUSHARA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
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WAUSHARA COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.9 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 2.6 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 10.4 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.1% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 5.9% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 8.9% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 23.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 14.4 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 74.8 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 298.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WAUSHARA COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

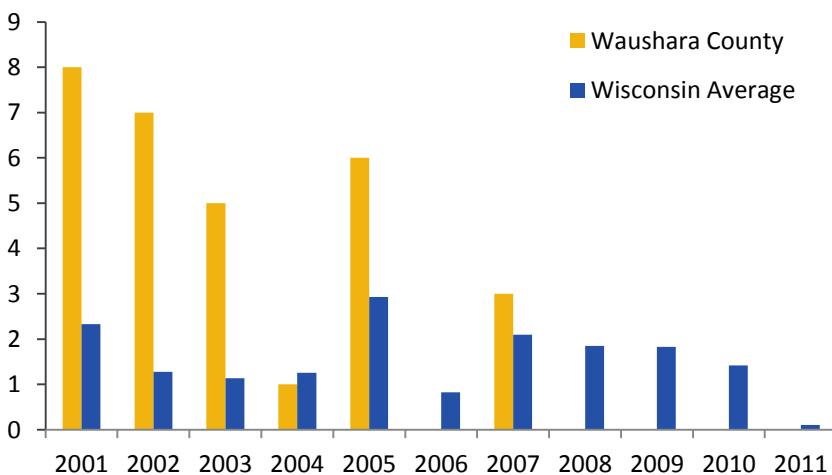
● 9.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

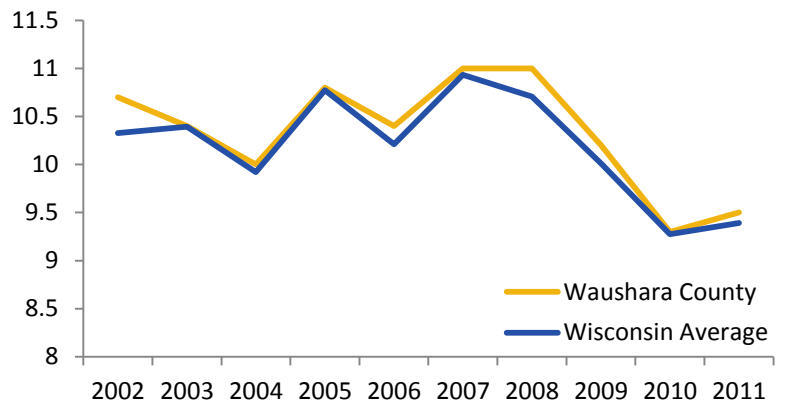
WAUSHARA COUNTY

PARTICULATE MATTER 2.5

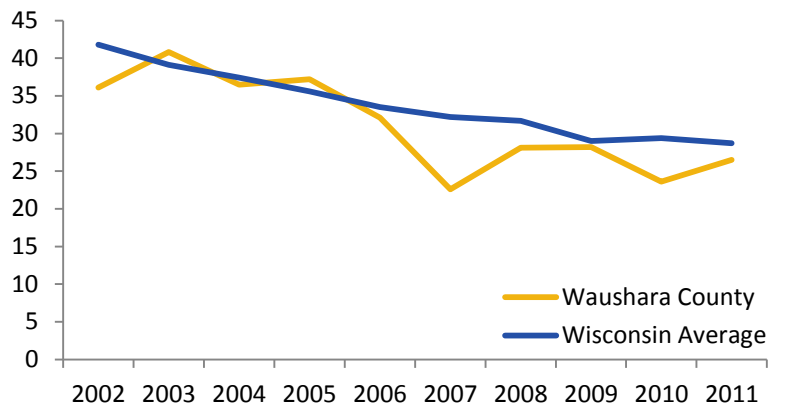
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

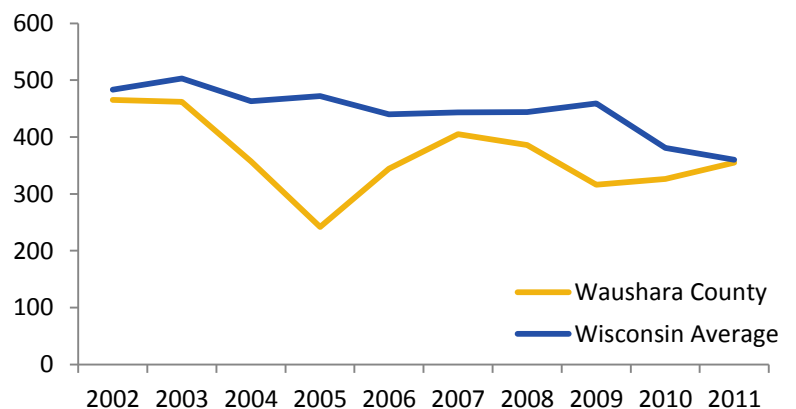
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WAUSHARA COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.

● 0.9

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.3

● 2.6

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

● Above state value ● At or below state value ^ Suppressed

PUBLIC DRINKING WATER

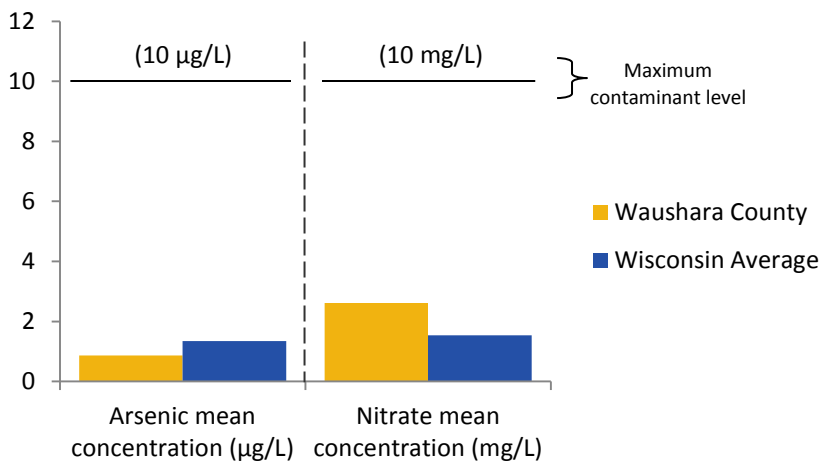
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY WAUSHARA COUNTY

PRIVATE DRINKING WATER

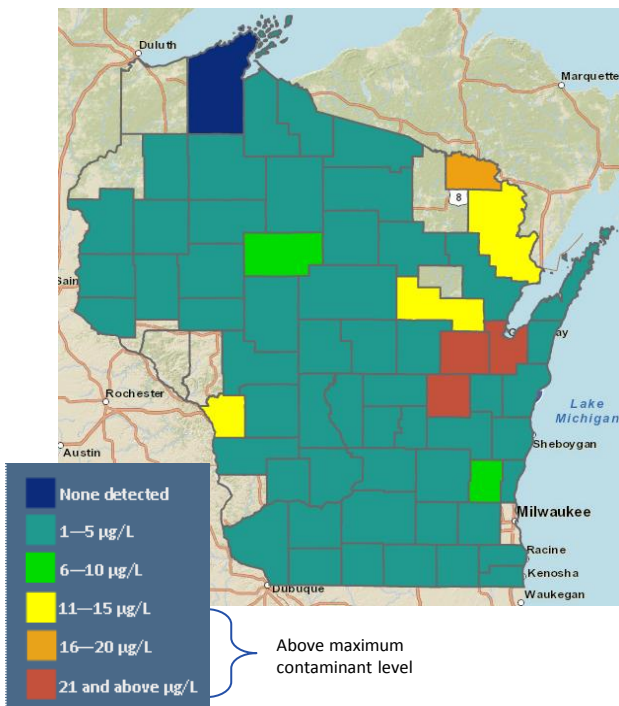
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

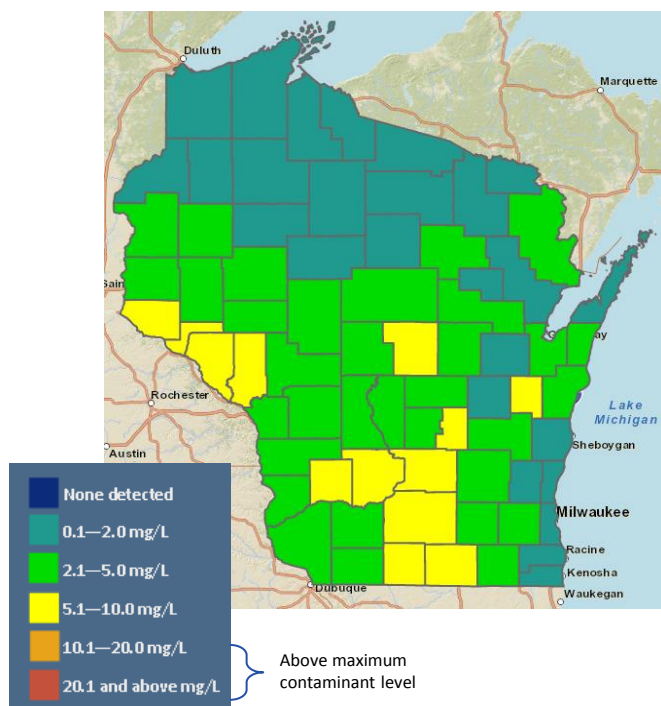
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)

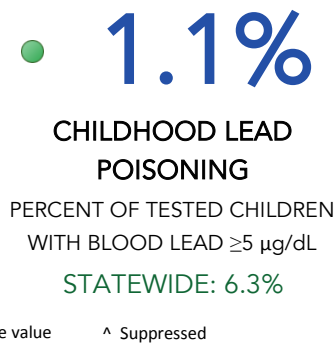
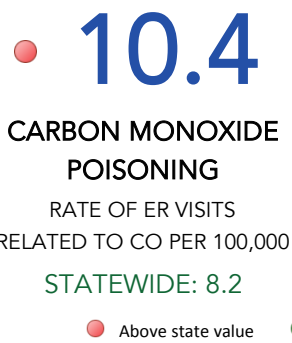


The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WAUSHARA COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

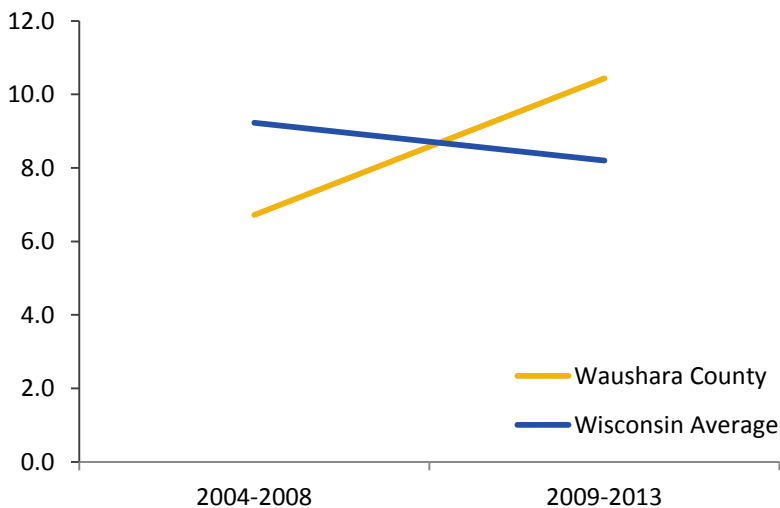


CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE
RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

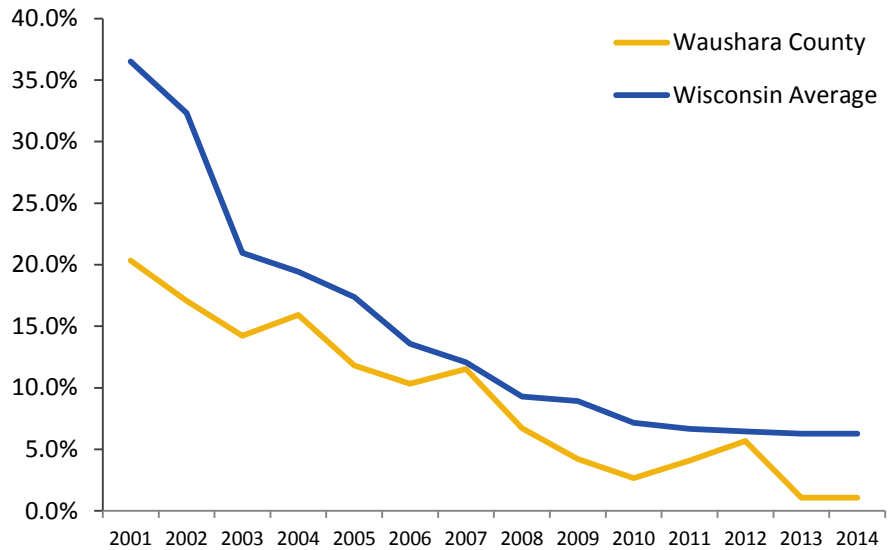
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

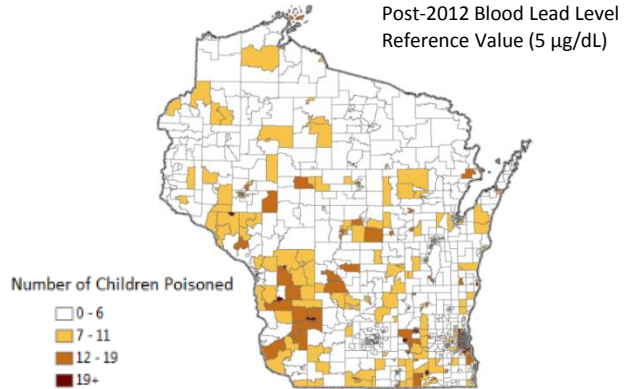
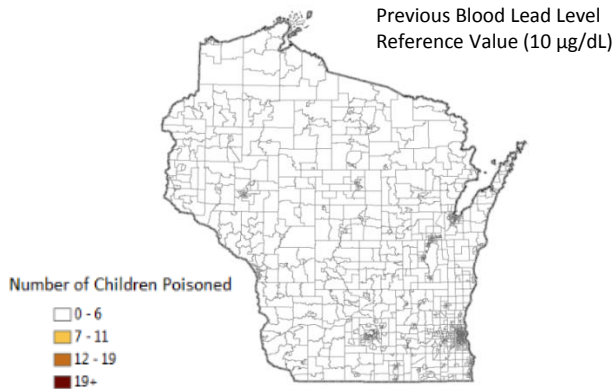
CHILDHOOD LEAD POISONING

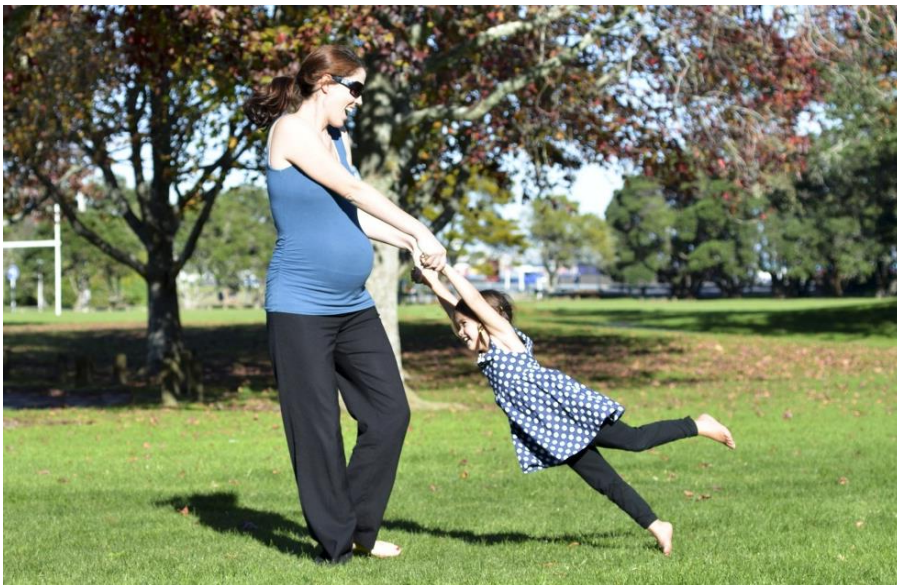
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

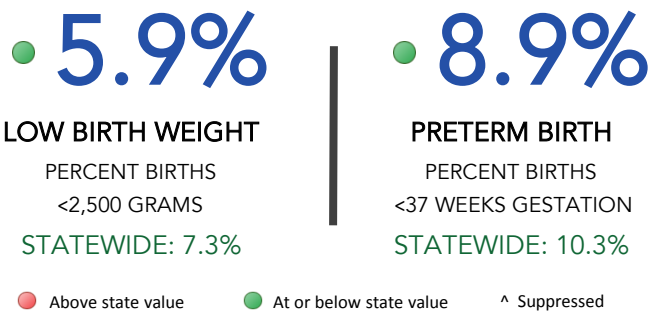
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WAUSHARA COUNTY

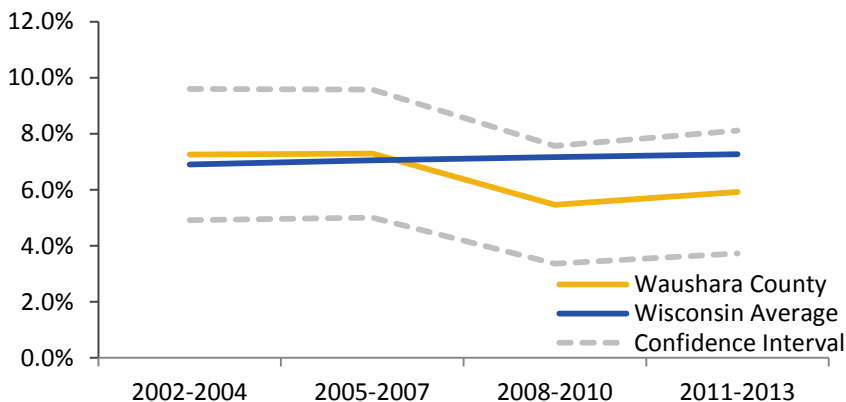
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES WAUSHARA COUNTY

PRETERM BIRTH

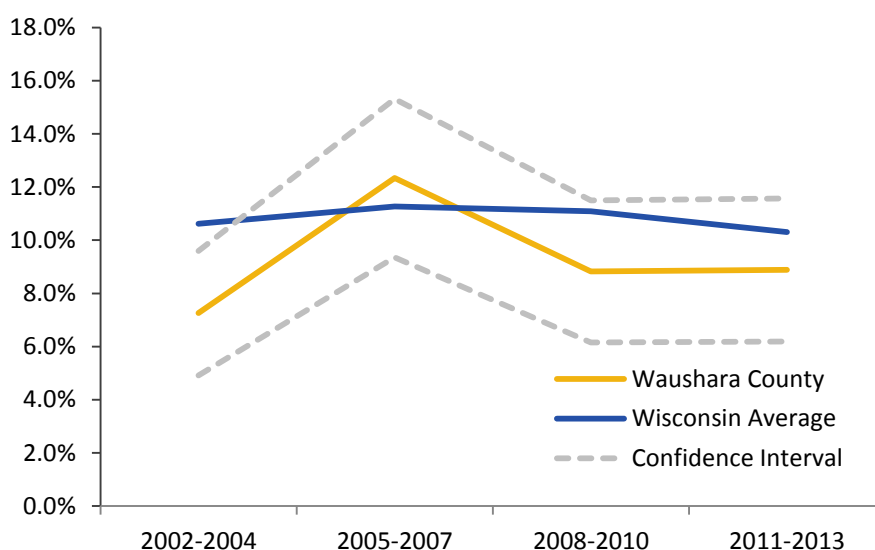
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

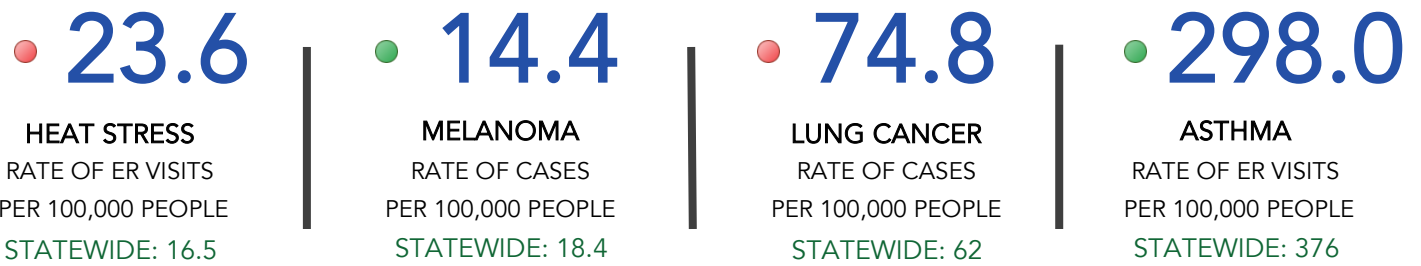
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WAUSHARA COUNTY

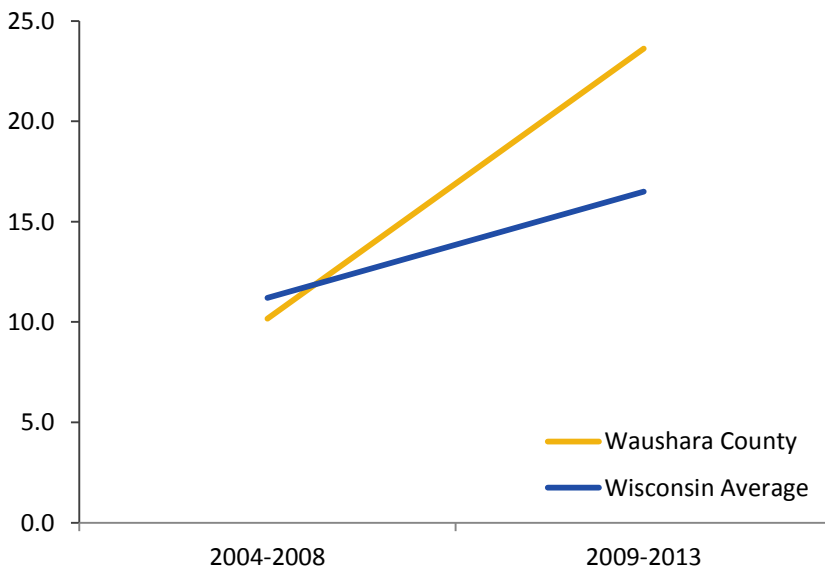
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



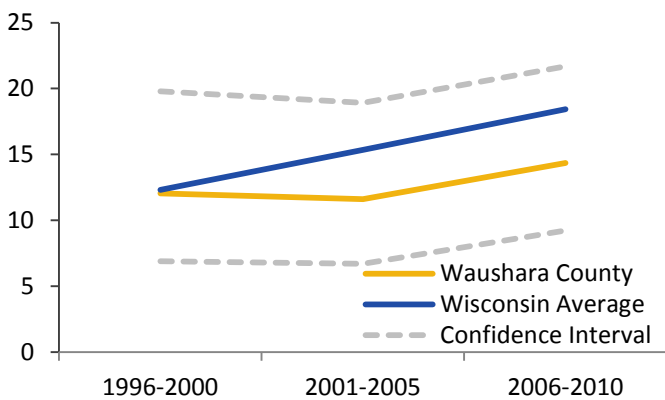


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



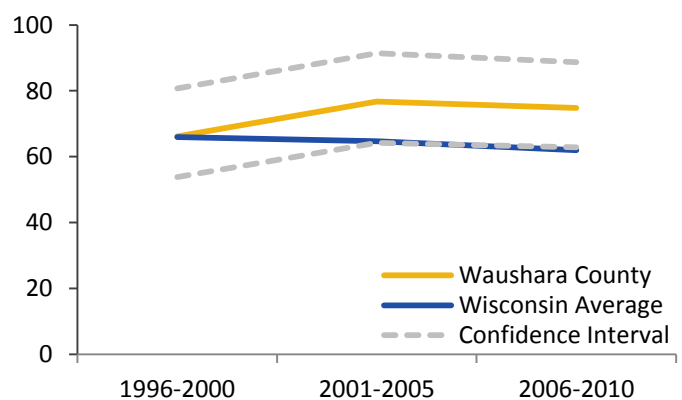
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



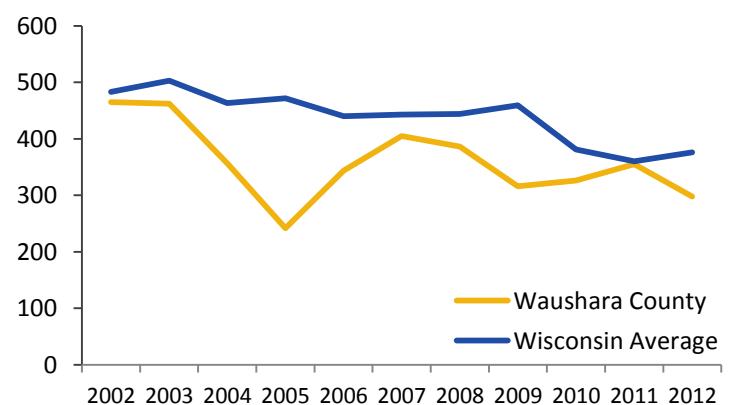
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WINNEBAGO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

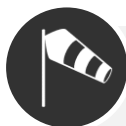
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WINNEBAGO COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 2.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 0.4 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 0.2 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 7.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 4.2% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 7.1% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 11.2% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 16.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 22.6 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 72.0 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 236.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WINNEBAGO COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● **2.0**

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● **0.0**

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

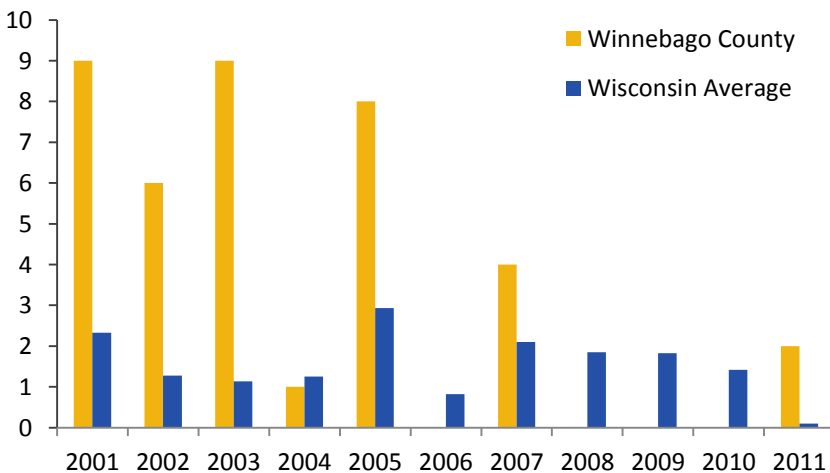
● **10.7**

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





AIR QUALITY

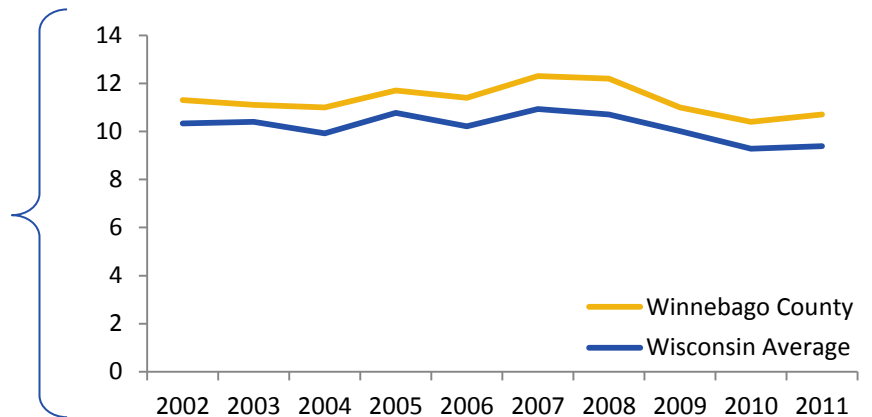
WINNEBAGO COUNTY

PARTICULATE MATTER 2.5

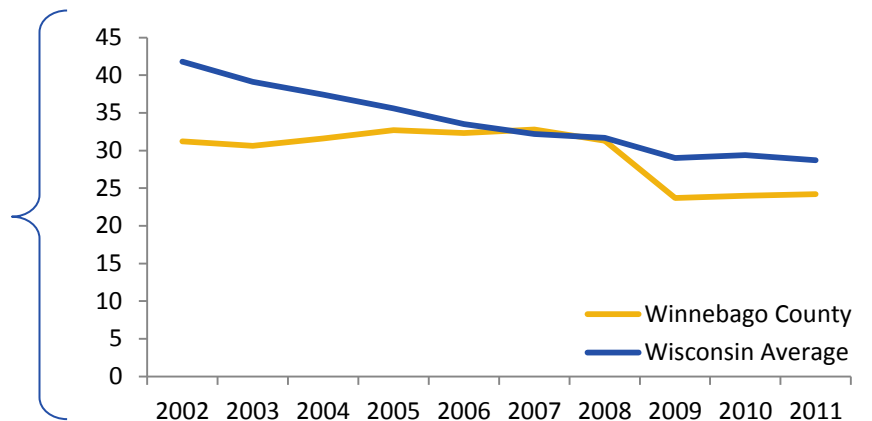
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

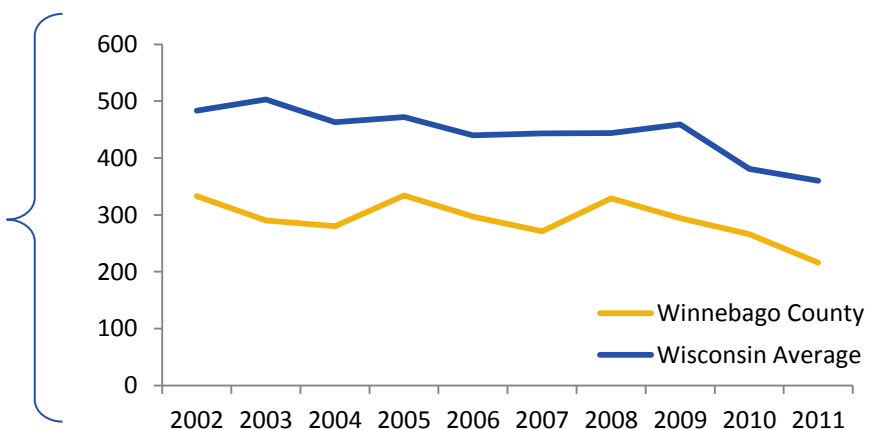
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



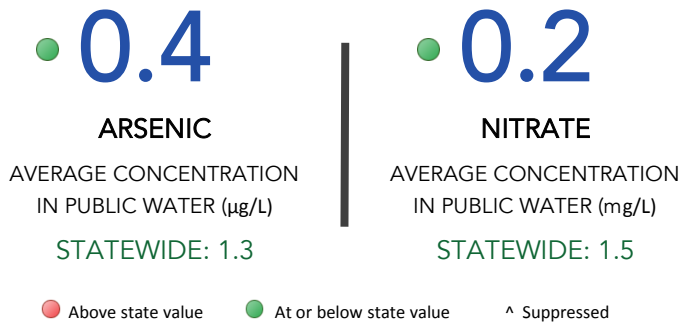
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WINNEBAGO COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

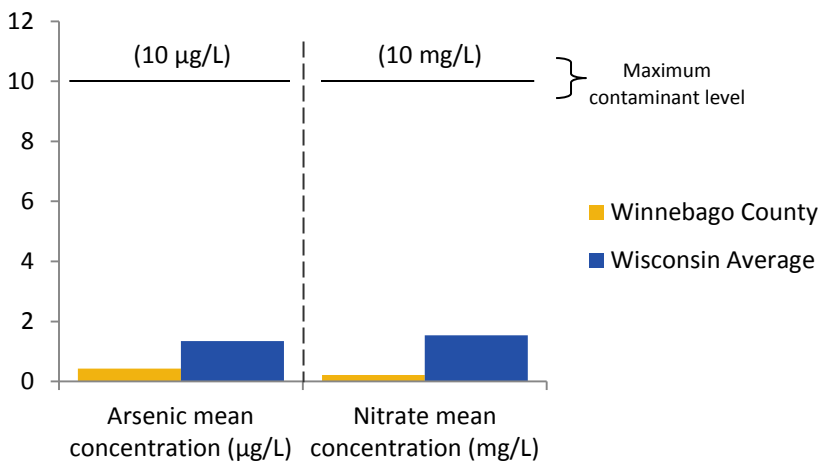
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





WATER QUALITY WINNEBAGO COUNTY

PRIVATE DRINKING WATER

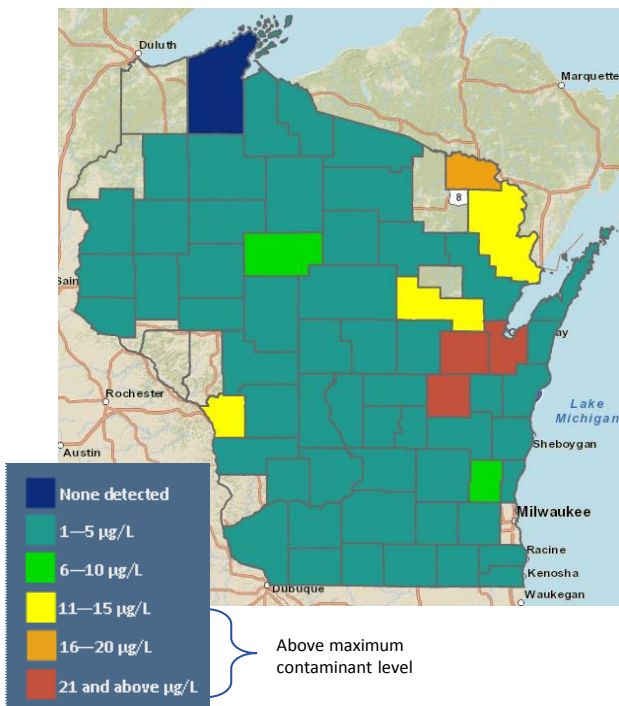
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

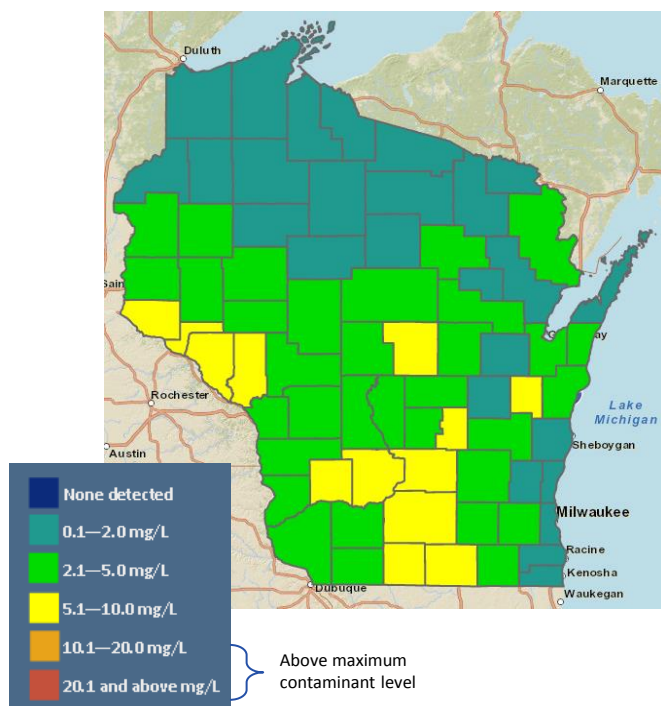
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WINNEBAGO COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

● **7.5**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ▲ Suppressed

● **4.2%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

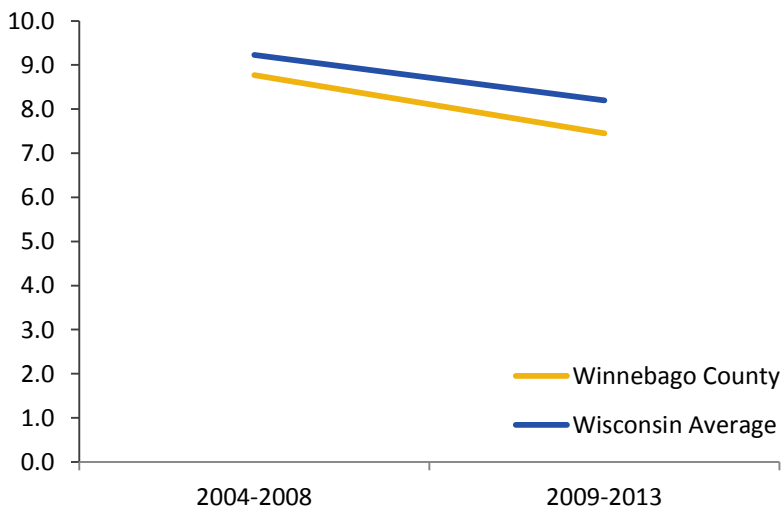
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

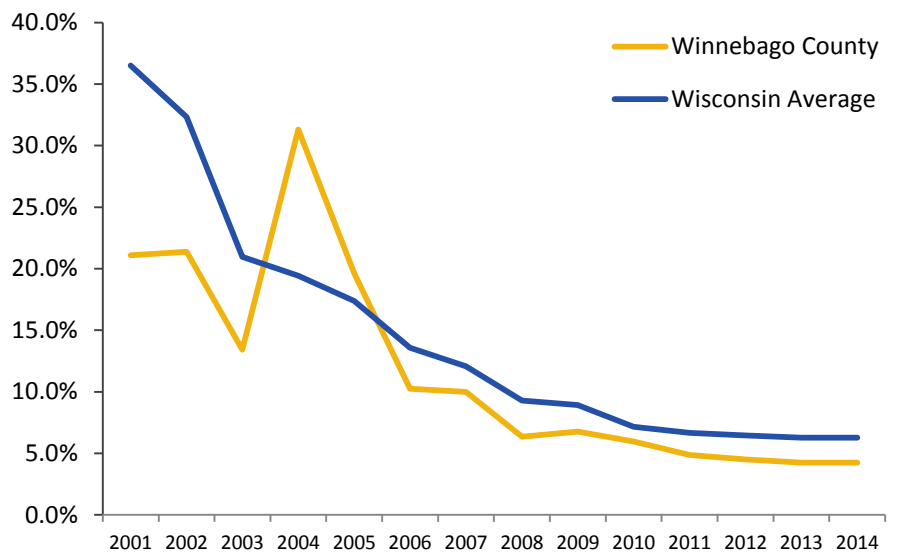
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

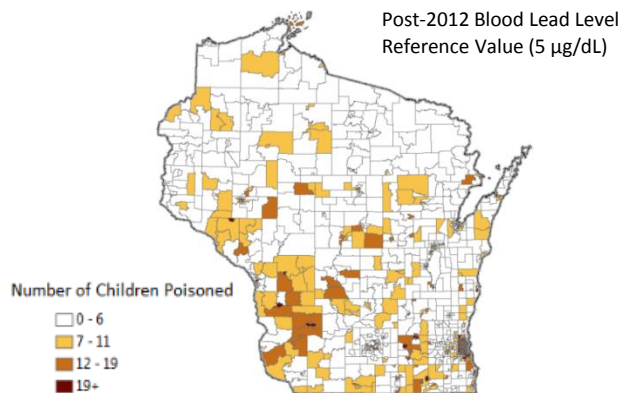
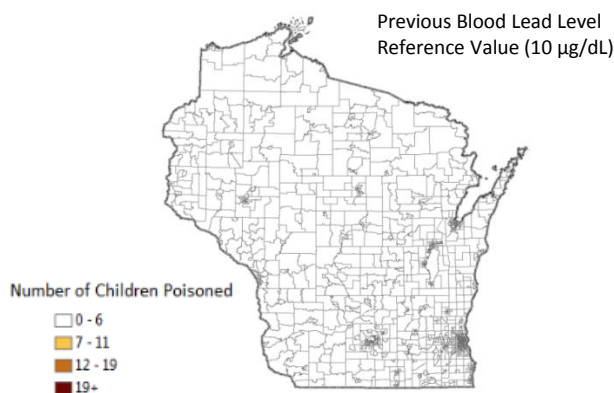
CHILDHOOD LEAD POISONING

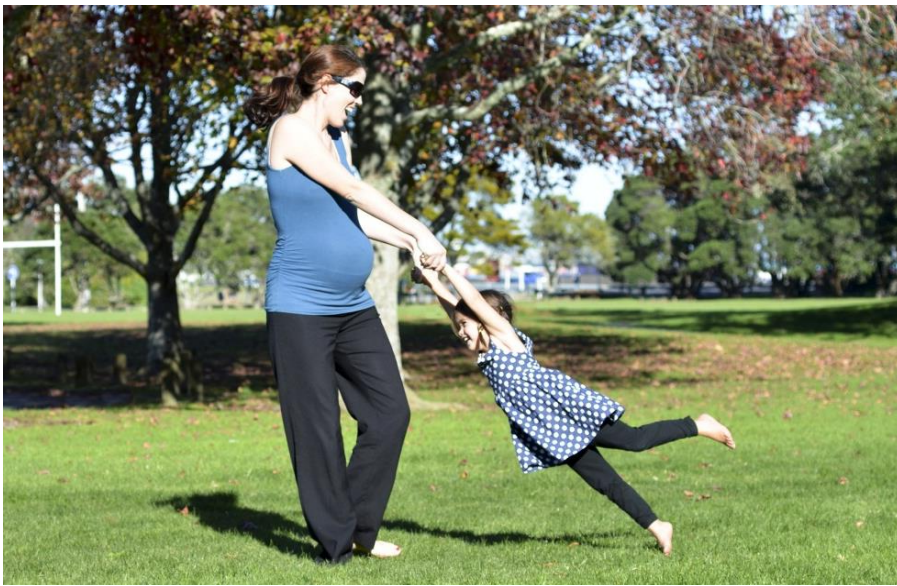
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

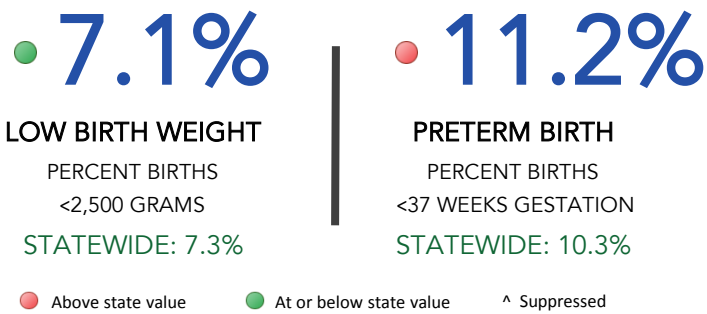
CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WINNEBAGO COUNTY

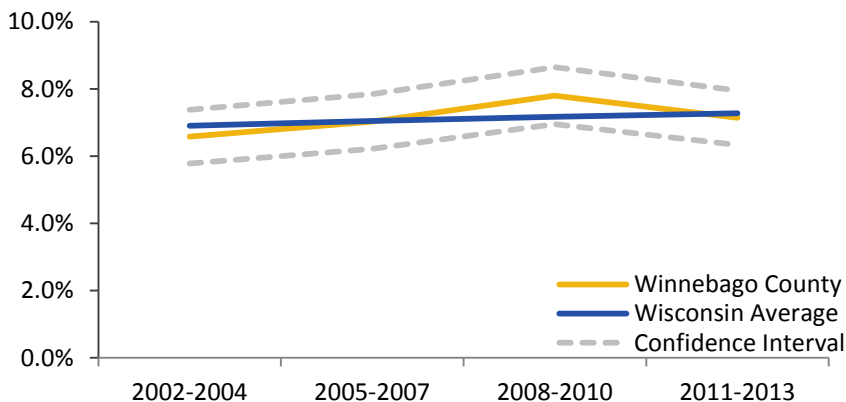
Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).



LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

LOW BIRTH WEIGHT PERCENT OF BIRTHS BELOW 2,500 GRAMS



Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES WINNEBAGO COUNTY

PRETERM BIRTH

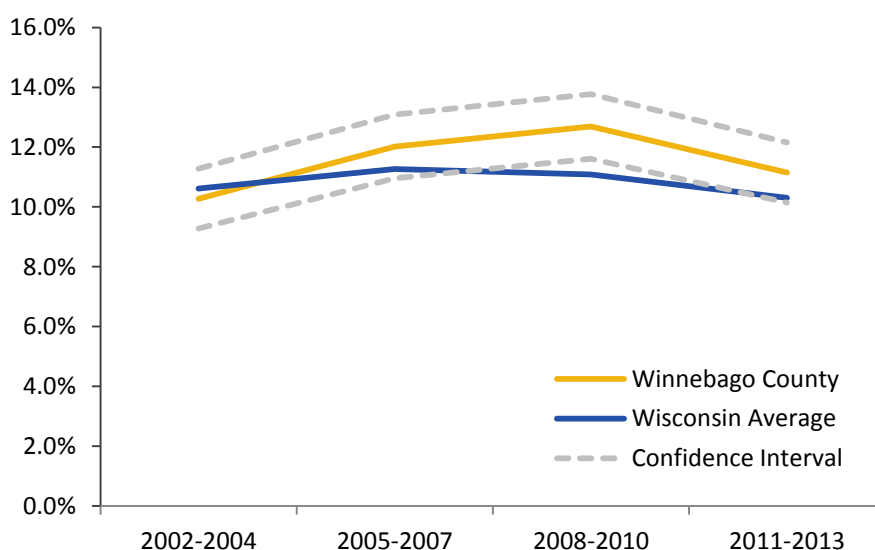
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

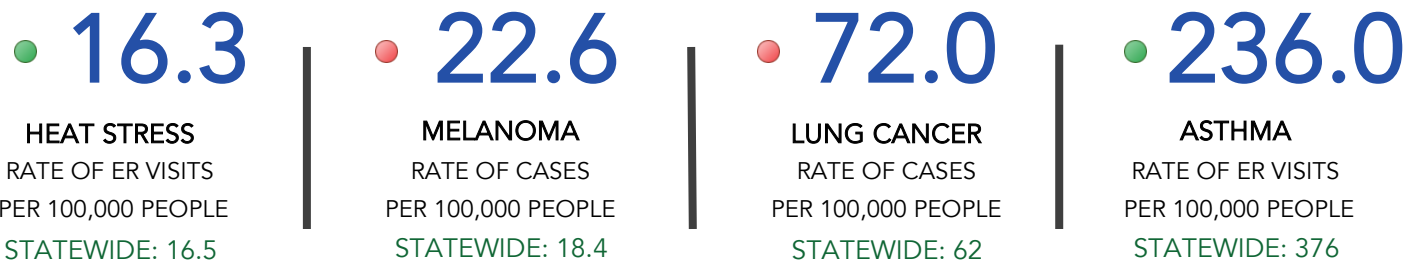
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WINNEBAGO COUNTY

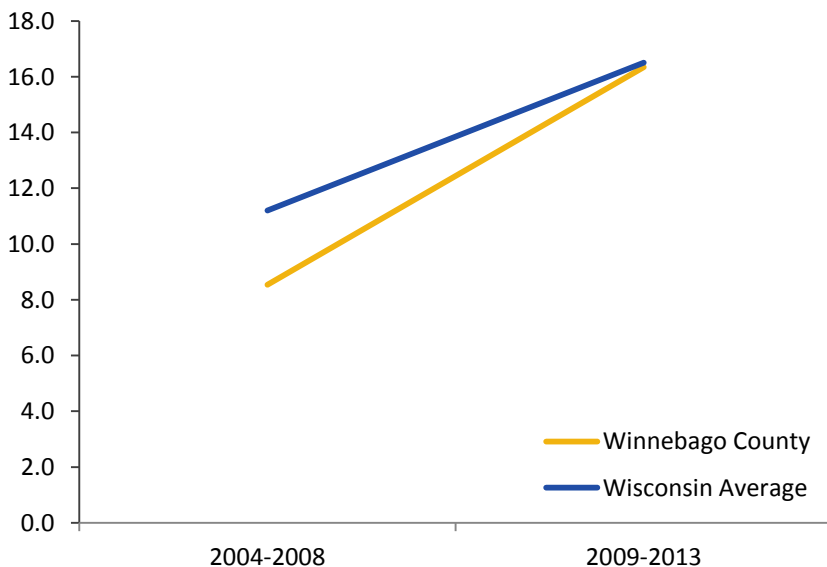
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



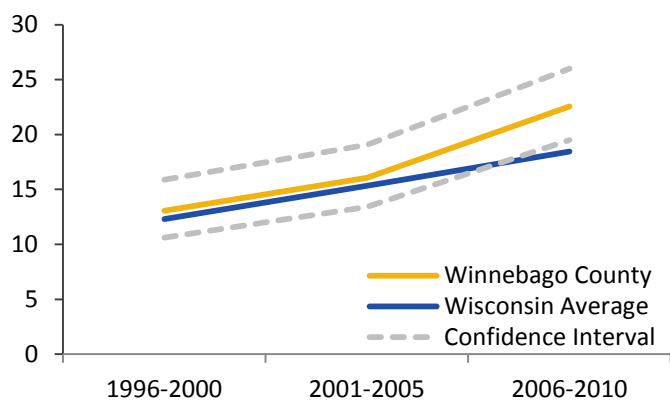


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



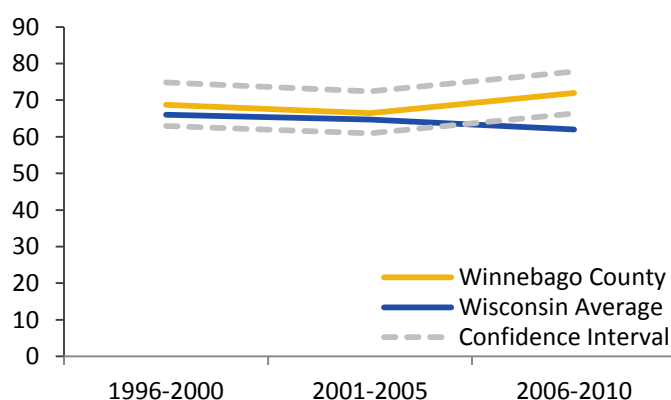
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



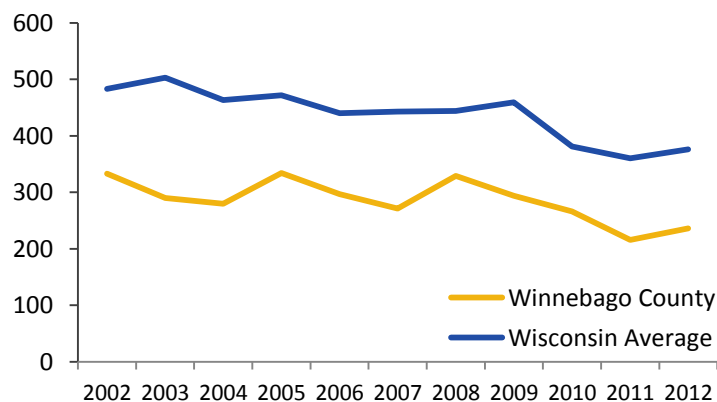
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

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State of Wisconsin | Department of Health Services | Division of Public Health
Bureau of Environmental and Occupational Health
Wisconsin Environmental Public Health Tracking Program
dhstracking@wi.gov | dhs.wisconsin.gov/epht
MAY 2015 | P-00719



WOOD COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2015



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





Below you will find our suggestions for how to use this profile. This profile contains many data points unique to environmental health. As you explore the information on the following pages, consider how it might be put to good use in your community. We are here to help you along the way. If you have questions about how to integrate these data into your work, [let us know!](#)

COMMUNITY HEALTH ASSESSMENTS

Data from the profiles can be used in your health department or hospital's community health assessments to help meet state and federal requirements.

ACCREDITATION

The profiles can be used to address the Public Health Accreditation Board's accreditation standards. For instance, [Standard 1.3: Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.](#)

GRANT PROPOSALS

Data in this profile can help you and your team develop a rationale for funding requests. These data can help justify existing programs and show where there is still work to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, these data can help you build your case and show the extent of a problem. Communities have used their profile data to target education efforts to areas with the most need.

POLICY DEVELOPMENT

This profile contains measures that can be used to justify the need for a policy. If a policy is put in place, these data can be used as baseline measures with which to monitor changes over time.

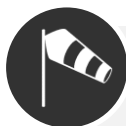
How have you used your county's profile? [Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WOOD COUNTY

DASHBOARD | 2015 ENVIRONMENTAL HEALTH PROFILE



AIR QUALITY

Ozone

● 0.0 | Annual days above standard
Wisconsin: 0.7

Particulate Matter 2.5

● 0.0 | Annual days above standard
Wisconsin: 0.1



WATER QUALITY

Arsenic

● 7.0 | Average concentration in µg/L
Wisconsin: 1.3

Nitrate

● 1.0 | Average concentration in mg/L
Wisconsin: 1.5



HOME HAZARDS

Carbon Monoxide (CO)

● 8.7 | Rate of ER visits per 100,000 people
Wisconsin: 8.2

Childhood Lead Poisoning

● 1.1% | Percent with blood lead ≥5 µg/L
Wisconsin: 6.3%



BIRTH OUTCOMES

Low Birth Weight

● 6.5% | Percent of births <2500 grams
Wisconsin: 7.3%

Preterm Birth

● 9.6% | Percent of births <37 weeks gestation
Wisconsin: 10.3%



HEALTH INDICATORS

Heat Stress

● 26.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Melanoma

● 18.3 | Rate of cases per 100,000 people
Wisconsin: 18.4

Lung Cancer

● 58.2 | Rate of cases per 100,000 people
Wisconsin: 62.0

Asthma

● 218.0 | Rate of ER visits per 100,000 people*
Wisconsin: 376.0

*This indicator is represented per 10,000 people on the data portal.

● Above state value

● At or below state value

^ Data are suppressed

| [References on next page](#)



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

dhs.wi.gov/epht | dhstracking@wi.gov | 608-267-2488

Wisconsin Department of Health Services | Division of Public Health | Bureau of Environmental and Occupational Health

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal, available at dhs.wi.gov/epht. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program "Glossary of Terms," available at dhs.wisconsin.gov/epht/glossary.htm.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2011



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from public water systems
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Years displayed: Averaged data from 2011-2013



HOME HAZARDS

Childhood Lead Poisoning: Reported blood lead test results
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Note: The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected and the data are now deduplicated. This version also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.
Year displayed: 2014

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013



BIRTH OUTCOMES

Low Birth Weight and Preterm Birth: Wisconsin birth certificate data
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2011-2013



HEALTH INDICATORS

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2009-2013

Melanoma and Lung Cancer: Age-adjusted rate of cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2006-2010

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



AIR QUALITY WOOD COUNTY

Air pollution means substances are in the air that should not be there – or should be there in smaller amounts. Two important pollutants to consider for the health of a community are fine particulate matter and ozone. Particulate matter describes microscopic particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair. Ozone is created as a result of emissions from vehicles and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these contaminants are measured by monitoring stations set up around the state.

● 0.0

OZONE
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.7

● 0.0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.1

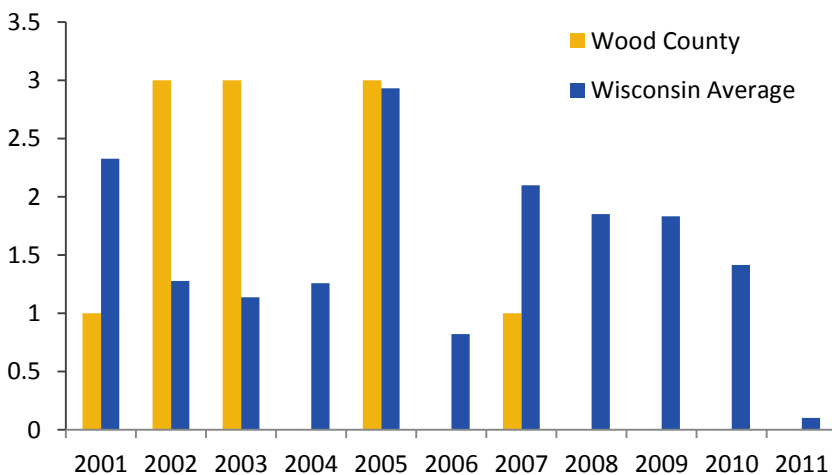
● 9.6

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.4

● Above state value ● At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD



OZONE

The chart to the left provides a year-to-year comparison of the number of days in which ozone was above the standard set by the US Environmental Protection Agency. The fewer days above the standard, the better.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





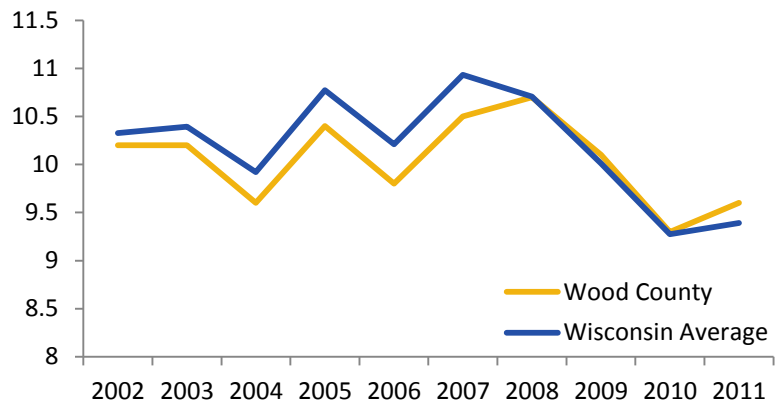
AIR QUALITY WOOD COUNTY

PARTICULATE MATTER 2.5

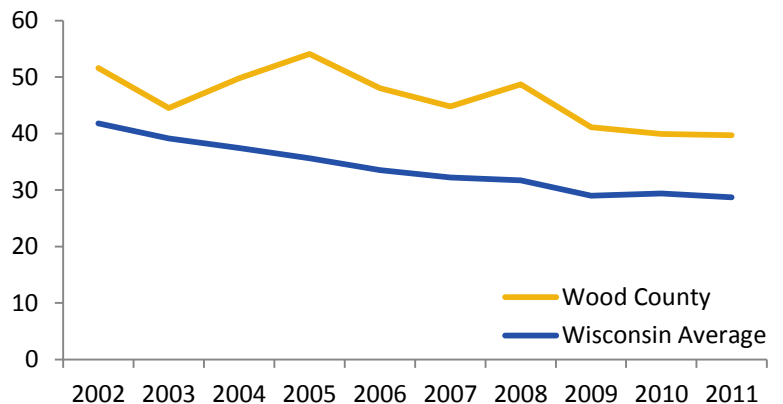
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack rates, and asthma emergency room visits have fluctuated over the 2002-2011 time period. In most Wisconsin counties, there has been a downward trend in all three measures over time.

For more information on ozone and particulate matter, please visit dhs.wisconsin.gov/epht/criteria pollutants.htm.

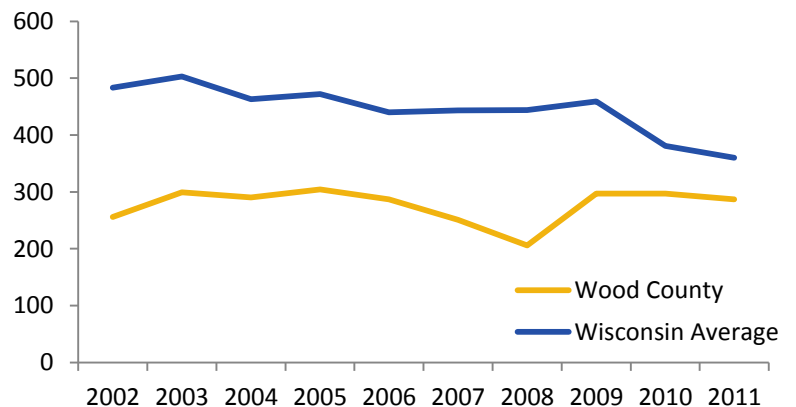
PARTICULATE MATTER 2.5
ANNUAL AVERAGE
($\mu\text{g}/\text{m}^3$)



HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people



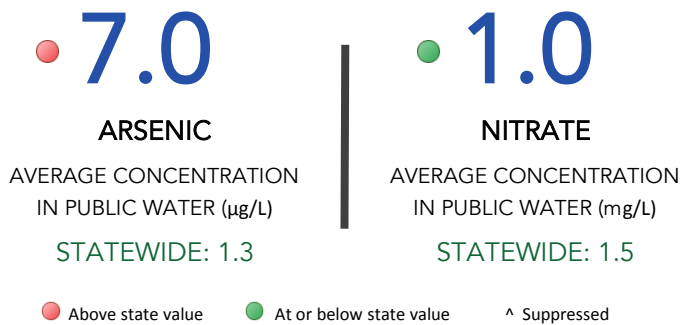
ASTHMA
EMERGENCY ROOM VISITS
Rate per 100,000 people





WATER QUALITY WOOD COUNTY

Water that is piped into your home, school, or workplace comes from either a public water system or a private well. Two important water contaminants to consider for the health of a community are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (such as bladder and lung cancer). Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects. Infants who consume drinking water with high nitrate levels are at risk of shortness of breath and blue baby syndrome.



PUBLIC DRINKING WATER

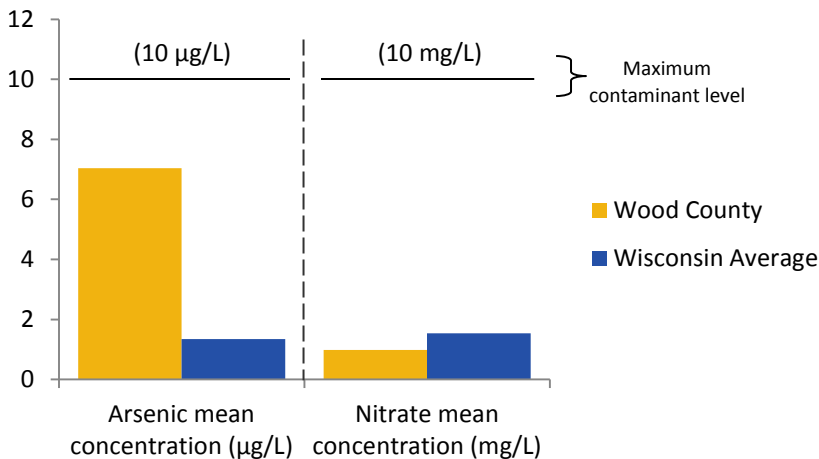
About two-thirds of Wisconsin residents obtain water from public water systems. Data presented on this page are collected from public water systems.

Levels of contaminants in public water systems are monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported arsenic and nitrate mean concentrations below the maximum contaminant levels established by the US Environmental Protection Agency.

For more information and to explore data about other drinking water contaminants in Wisconsin, visit dhs.wi.gov/epht.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2011-2013)



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



WATER QUALITY WOOD COUNTY

PRIVATE DRINKING WATER

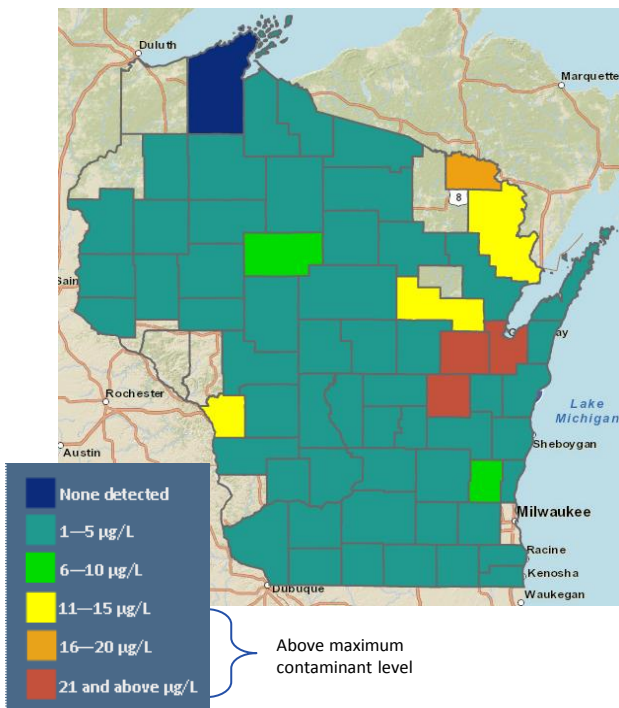
About one-third of Wisconsin residents obtain water from private wells. Private water wells are those that are owned by individuals. Private well owners are responsible for monitoring and testing their wells. Regulations are in place to guide the creation of new wells, but requirements are limited once a well is in place. As a result, not all private wells are regularly monitored for contamination.

The Wisconsin Environmental Public Health Tracking Program worked to improve access to private well data by partnering with the University of Wisconsin-Stevens Point's Center for Watershed Science to support a mapping tool. This tool provides private well data for multiple contaminants at county, township, and section levels. The well data were voluntarily submitted by homeowners and represent data from the past 25 years. The data do not include water quality information for all known private wells.

County-specific measures for arsenic and nitrate in private wells are displayed below. Seven counties have reported average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level. To explore data for the other water contaminants, visit bit.ly/wellwaterviewer.

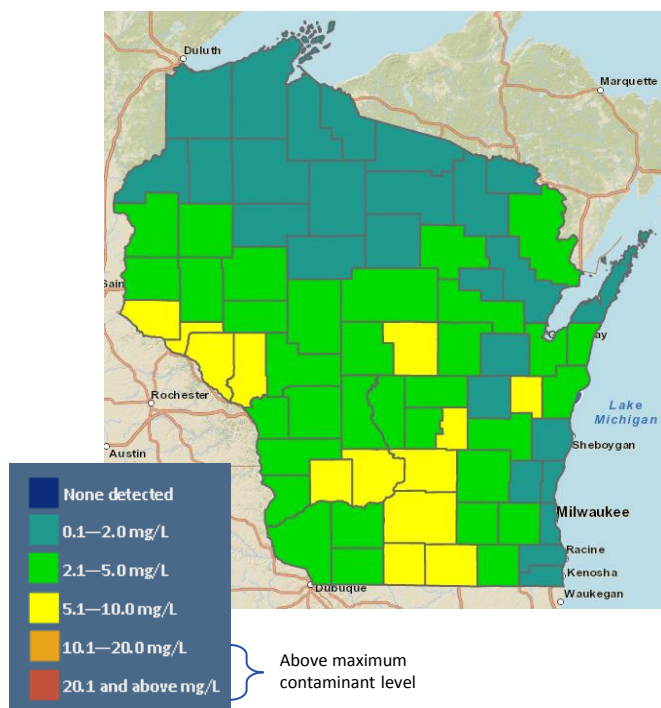
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



The arsenic data displayed include results of 15,230 samples collected from 1988-2014. The nitrate data displayed include results of 113,465 samples collected from 1972-2014. The number of samples collected varies from year to year; accordingly, some years are better represented than others. Note that the level of precision between the arsenic and nitrate values is different in the map legends; this is related to the level of detection capabilities of the laboratory equipment.



HOME HAZARDS WOOD COUNTY

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program. Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death. In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

8.7
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.2

● Above state value ● At or below state value ^ Suppressed

1.1%
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g/dL}$

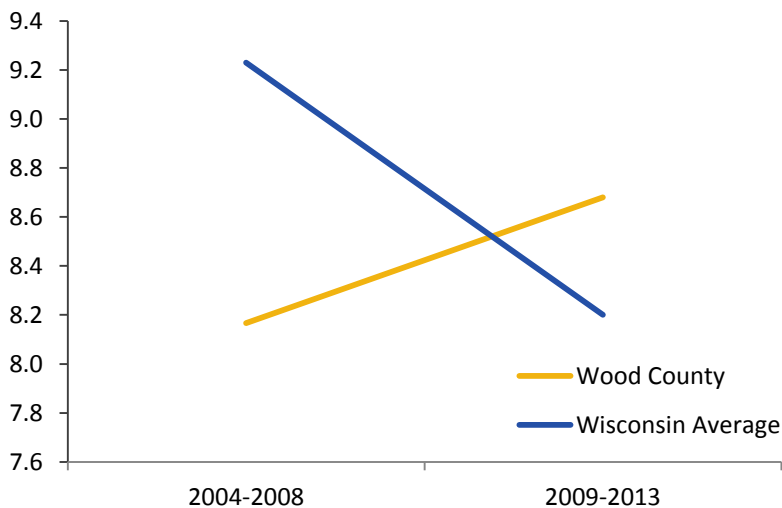
STATEWIDE: 6.3%

CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic, colorless, and odorless gas. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

The chart to the left presents age-adjusted rates of emergency room visits for CO poisoning. For more information on carbon monoxide poisoning, please visit dhs.wisconsin.gov/air/co.htm.

CARBON MONOXIDE RATE OF ER VISITS PER 100,000 PEOPLE



TAKE A CLOSER LOOK AT THE DATA:
dhs.wi.gov/epht



CHILDHOOD LEAD POISONING

Wisconsin statute defines lead poisoning in a child as a blood lead level of 10 or more $\mu\text{g}/\text{dL}$ (Wis. Stat. \S 254.11[9]). However, in 2012, the Centers for Disease Control and Prevention recommended the lead poisoning reference value be lowered to greater than or equal to 5 $\mu\text{g}/\text{dL}$.

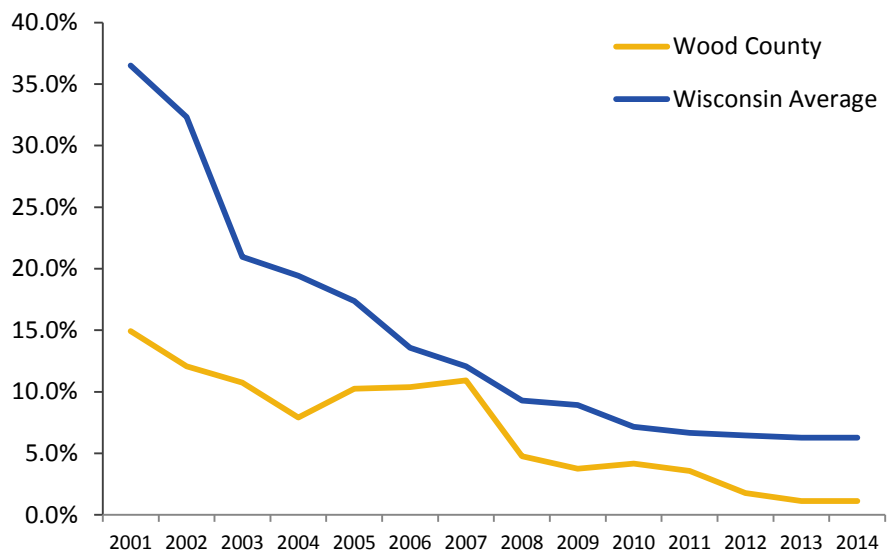
This decision was made due to the overwhelming evidence that blood lead levels below 10 $\mu\text{g}/\text{dL}$ can cause damage to the brain and other parts of the body.

There is no safe level of lead in the human body. Even very low levels of exposure can cause adverse health effects.

The percentage of children tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state. Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

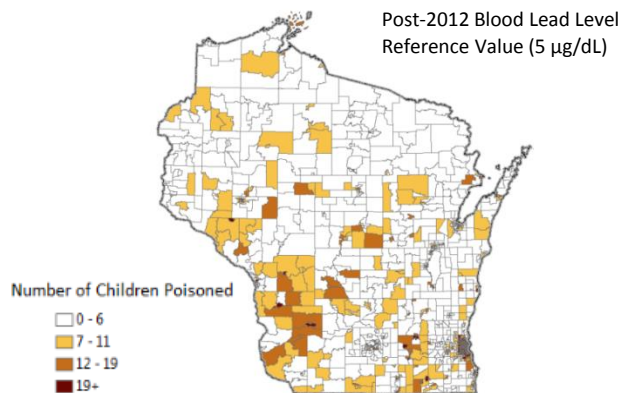
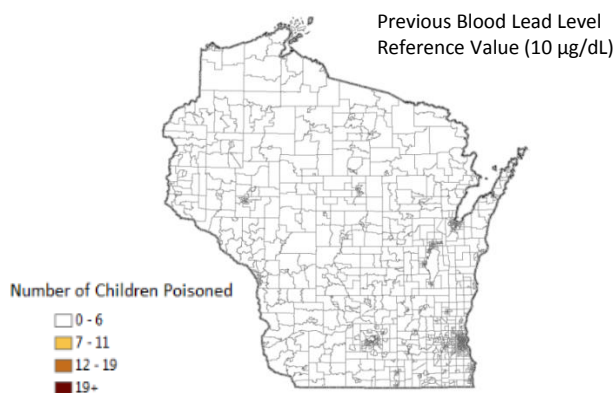
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



The change in reference value for lead poisoning from $\geq 10 \mu\text{g}/\text{dL}$ to $\geq 5 \mu\text{g}/\text{dL}$ had a substantial impact on the number of Wisconsin children recognized as being affected by lead poisoning. The maps below illustrate that change. The map on the left shows the number of children who were considered lead poisoned at the previous level. The map on the right shows the number of children who are considered lead poisoned at the new level. For more information on preventing and remediating lead exposure, please visit the Wisconsin Lead Program website, dhs.wi.gov/lead.

CENSUS TRACT-LEVEL COUNTS OF CHILDHOOD LEAD POISONING (2009-2011)





BIRTH OUTCOMES WOOD COUNTY

Reproduction is complex, and many factors affect a mother's ability to conceive, carry a baby to term, and deliver a baby without complications. Environmental factors such as air pollution and exposure to contaminated drinking water can increase the likelihood of low birth weight and preterm births. Low birth weight has also been linked to exposure during pregnancy to lead, solvents, pesticides, and polycyclic aromatic hydrocarbons (a group of over 100 contaminants produced by burning fuels like coal).

● **6.5%**

LOW BIRTH WEIGHT

PERCENT BIRTHS
<2,500 GRAMS

STATEWIDE: 7.3%

● **9.6%**

PRETERM BIRTH

PERCENT BIRTHS
<37 WEEKS GESTATION

STATEWIDE: 10.3%

● Above state value ● At or below state value ^ Suppressed

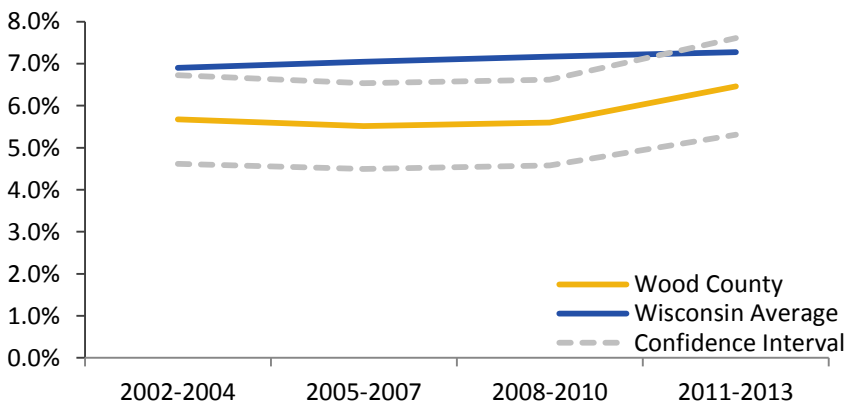
LOW BIRTH WEIGHT

Low birth weight – being born with a weight under 2,500 grams – can occur as a result of slow fetal growth over a full-term pregnancy, being born preterm, or both. The figure to the left provides a comparison between the county-level percentage of low birth weight babies and the percentage of low birth weight babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the left. They are denoted with dotted gray lines. These confidence intervals indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

LOW BIRTH WEIGHT

PERCENT OF BIRTHS BELOW 2,500 GRAMS



TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht





BIRTH OUTCOMES WOOD COUNTY

PRETERM BIRTH

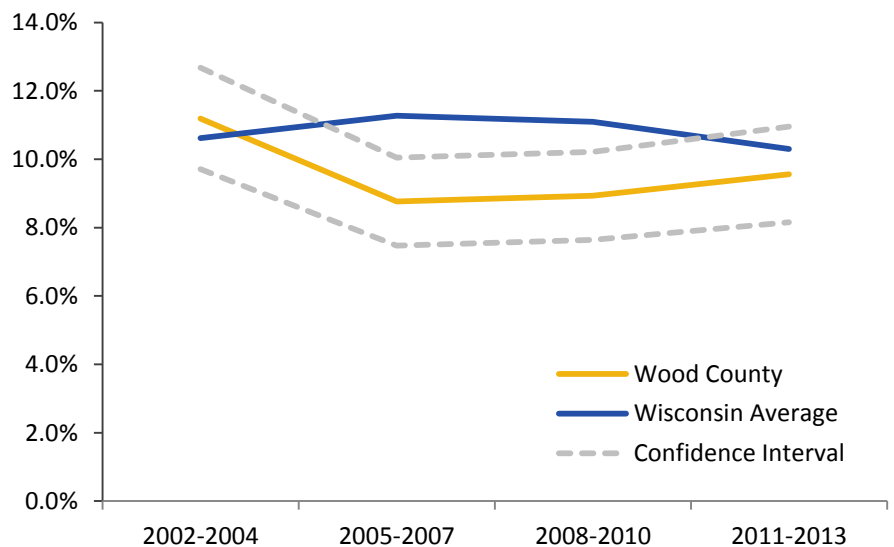
A baby is considered to be preterm if he or she is born before completing 37 weeks of gestation. Many women who have preterm birth have no known risk factors. Women have the best chance of preventing preterm birth by being healthy before and during pregnancy and receiving high-quality prenatal care. Environmental factors can also play a role, as research has shown a relationship between exposure to air pollution, lead, solvents, and tobacco smoke during pregnancy and a higher risk of preterm birth.

The figure to the right provides a comparison between the percentage of preterm babies at the county level and the percentage of preterm babies in Wisconsin from 2002-2013.

Confidence intervals based on the county rate have been added to the chart to the right. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on preterm births, visit dhs.wi.gov/epht/premature.htm.

PRETERM BIRTHS
PERCENT OF BIRTHS <37 WEEKS GESTATION



BIRTH DEFECTS

A birth defect is a problem that happens while the baby is developing in the mother's body. Most birth defects happen during the first three months of pregnancy. A birth defect may affect how a baby's body looks, works, or both.

Many birth defects are known to be related to environmental factors. Birth defects such as spina bifida, cleft lip/palate, gastroschisis, hypospadias, Down syndrome, and heart defects have all been linked to living near hazardous waste sites. Some birth defects have also been linked to disinfection by-products in drinking water. Some studies have also found evidence of a link between exposure to high nitrate levels in drinking water early in pregnancy and certain birth defects.

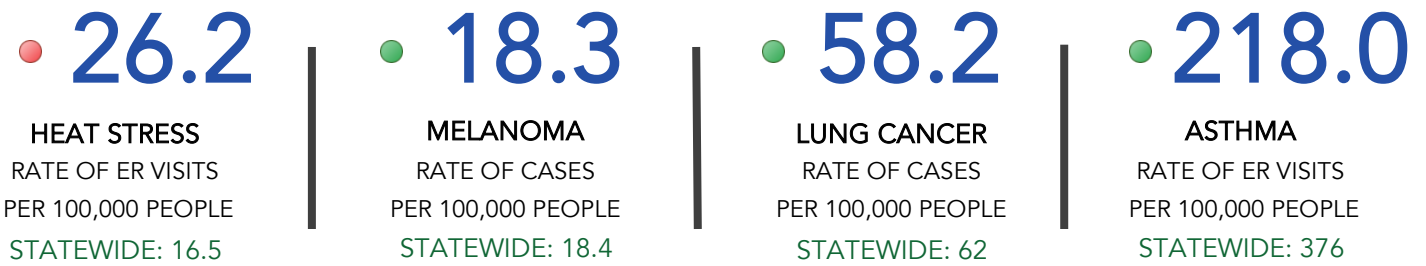
The causes of most birth defects remain unknown. With the data collected through the National Environmental Public Health Tracking Program, researchers will be better equipped to study the relationship between birth defects and the environment.

The Wisconsin Environmental Public Health Tracking Program obtains data on 10 types of birth defects from the Birth Defect Prevention and Surveillance Program at the Wisconsin Department of Health Services. The Birth Defects Registry is a passive surveillance system for which reporting by health care providers is optional. Much of this data is available on our web portal, which can be found at dhs.wisconsin.gov/epht/birthdefects.htm.



HEALTH INDICATORS WOOD COUNTY

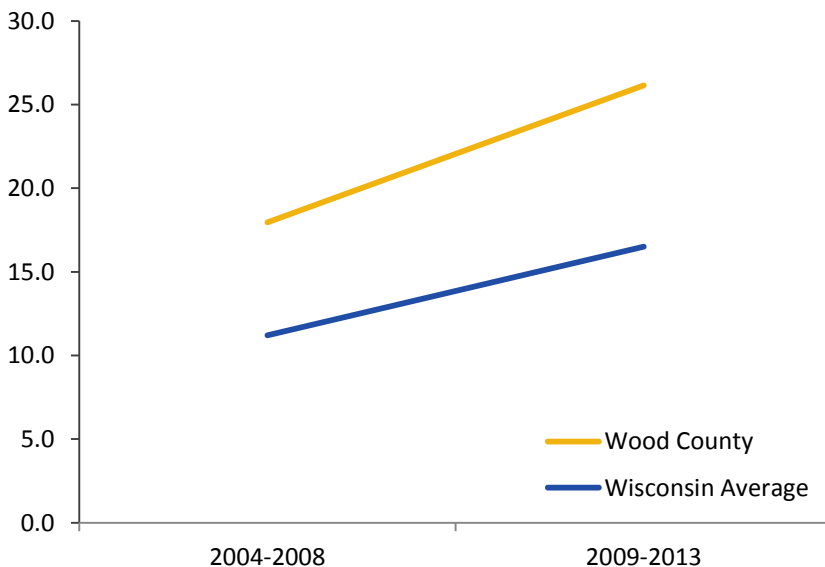
Heat stress, melanoma, lung cancer, and asthma are four of the many health indicators collected by the Wisconsin Environmental Public Health Tracking Program. Each of these indicators is strongly linked to one or more environmental factors.



● Above state value ● At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope, heat cramps, and heat exhaustion. Any individual can develop heat stress when involved in intense physical activity or when exposed to high environmental temperatures.

In this profile, heat stress is measured by emergency room visits related to heat. For more information on heat stress, visit bit.ly/cdcheatstress.

TAKE A CLOSER LOOK AT THE DATA:

dhs.wi.gov/epht



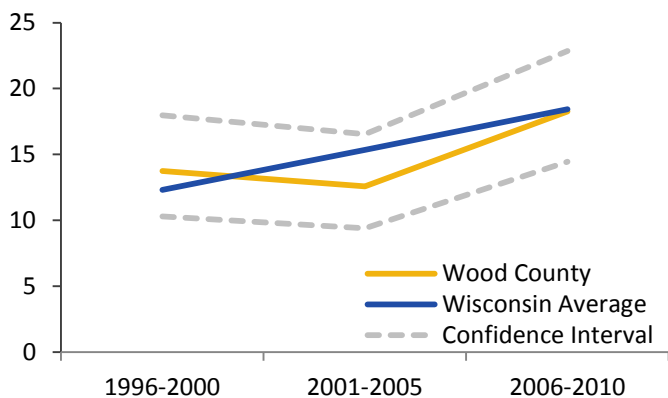


MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body tissues. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most dangerous type of skin cancer. Lung cancer forms in the tissues of the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

MELANOMA

RATE OF CASES PER 100,000 PEOPLE



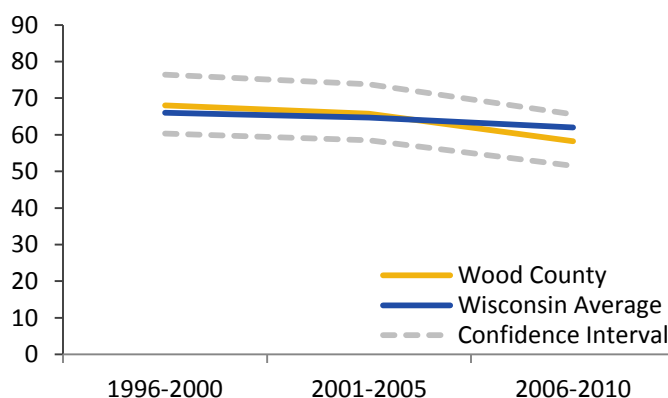
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation exposure, and lung cancer is related to radon and environmental tobacco smoke. In this profile, melanoma and lung cancer data are presented as age-adjusted rates of new cases per 100,000 people.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The rate of lung cancer has held relatively steady in Wisconsin, with more variability by county. Confidence intervals based on the county rate have been added to the charts above. They are denoted with dotted gray lines, which indicate the precision of the estimated values. The closer the dotted lines are to the county line, the better (or more precise) the estimate.

For more information on melanoma, visit dhs.wisconsin.gov/epht/melanoma.htm. To read more about lung cancer, visit dhs.wisconsin.gov/epht/lung.htm.

LUNG CANCER

RATE OF CASES PER 100,000 PEOPLE



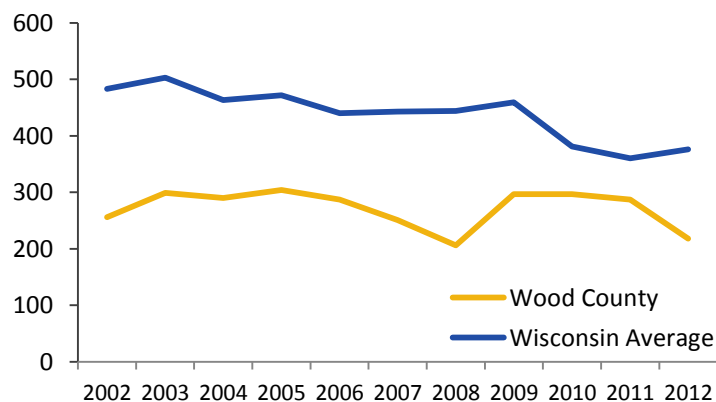
ASTHMA

Asthma is a disease that affects breathing and may restrict the ability to get oxygen to the lungs. Symptoms of asthma often occur because a person is exposed to a trigger such as outdoor air pollution.

In this profile, asthma is measured by the rate of asthma-related emergency room visits per 100,000 people. The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2002. Rates at the county level are more variable. For more information about asthma, visit dhs.wisconsin.gov/asthma/Index.htm

ASTHMA

RATE OF ER VISITS PER 100,000 PEOPLE



DATA DETAILS



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5})

Measures: Annual Average PM_{2.5} (µg/m³), Percent of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011, data from 2011 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the national portal for percent of days above standard were multiplied by 365 to get number of days above US Environmental Protection Agency standard. The US Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 µg/m³.

Ozone

Measure: Number of days above standard set by the US Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2001-2011, data from 2011 are displayed on the dashboard

Data details: This measure is the number of days with maximum eight-hour average ozone concentration over the Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.

Heart Attack

Measure: Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2011

Data details: These data are collected from inpatient hospital records. This measure includes cases with an ICD-9 code of 410.0-410.92. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six hospitalizations per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



HEALTH INDICATORS

Asthma

Measures: Annual age-adjusted rate of emergency department visits per 100,000 people

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. The National Environmental Public Health Tracking Network suppresses data for counties with fewer than six visits per 100,000 to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population. On the National Environmental Public Health Tracking portal, this measure is calculated per 10,000 people. For use in this profile, it is converted to per 100,000 people.

Lung Cancer and Melanoma

Measure: Age-adjusted rates of cases among persons age 35 and over per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1996-2010, data from 2006-2010 are displayed on the dashboard

Data details: Rates are calculated from counts of cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.

Heat Stress

Measure: Age-adjusted rate of emergency department visits per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data from 2009-2013 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



WATER QUALITY

Arsenic

Measures: Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Arsenic concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2011-2013). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate

Measure: Mean concentration of nitrate (mg/L) in public drinking water

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: Averaged data from 2011-2013

Data details: Nitrate concentrations in drinking water are based on samples taken from public community water systems. Because many counties did not have any samples for a given year, we aggregated three years of data (2011-2013). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.



HOME HAZARDS

Lead Poisoning

Measure: Percent of children tested who had a blood lead level $\geq 5 \mu\text{g/dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2014, data from 2014 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used. The first version of this profile contained lead data from 2013. These data reflected duplicated cases, which might inflate rates in some counties. This issue has been corrected. This version of the profile also includes 2014 data, as they were available during the second printing. Please update any saved copies with this version.

Carbon Monoxide Poisoning

Measure: Annual average rate of emergency room visits, age adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2013, data averaged from 2009-2013 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are collected from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 US standard population.



BIRTH OUTCOMES

Low Birth Weight

Measures: Percentage of babies weighing $< 2,500$ grams at birth among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. Birth weight in grams is reported by the hospital or attending clinical staff.

Preterm Birth

Measure: Percentage of babies born at < 37 weeks gestation among all babies born to county residents

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2002-2013, data from 2011-2013 are displayed on dashboard

Data details: Data are from Wisconsin resident birth certificates. The last menstrual period a mother had prior to confirmed pregnancy is used to determine weeks of gestation. If data from this source are not available, the attending clinician's estimated weeks of gestation is used.



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