

Mosquito Borne Illness in Wisconsin

In Wisconsin, the most common mosquito-borne diseases are **West Nile Virus and La Crosse Encephalitis**. Residents who travel to other countries can also be at risk for travel-related diseases, such as Malaria, Dengue Fever, Yellow Fever or Zika virus infection.

The Midwest also has one of the higher rates of reported mosquito-borne diseases in the country, especially in states like Wisconsin, the Dakotas, Iowa, Kansas, and Nebraska. These diseases include **West Nile virus, dengue, and Jamestown Canyon virus, according to the CDC**.

There are many illnesses spread by mosquitoes in Wisconsin. Not all mosquitoes spread illnesses, and you won't get sick from every mosquito bite, but it is important to make sure you are aware of mosquitoes, the illnesses they can spread, and how to prevent bites in the first place.

Mosquitoes 101:

- **Basics.** Mosquitoes are a type of fly. In Wisconsin, there are many types of mosquitoes, but only some types can spread illnesses. Most people who get sick from a mosquito bite will become ill in the summer and early fall. This is when mosquitoes are most active and people are outdoors.
- **Life Cycle.** Mosquitoes have a life cycle that includes four different stages: egg, larva, pupa, and adult. Female mosquitoes lay their eggs on or near water, and the eggs hatch after coming into contact with the water. After hatching, the larvae will feed until they have enough energy to change into pupae. The pupae then grow into adult mosquitoes, the only flying stage. Only adult female mosquitoes bite humans and other animals to get blood meals, after which they lay their eggs on or near water, starting the cycle again. The life cycle of a mosquito usually takes two weeks. However, it can range from four days to one month.
- **Habitat.** Mosquitoes live in areas with slow-moving or stagnant water, as well as forests, marshes, and tall grasses. Mosquitoes fly and land on animals or humans to bite the host's skin and consume blood. Warmer and wetter climates can increase the risk of getting an illness from a mosquito. In Wisconsin, climate change has created favorable conditions for mosquitoes to survive in more areas of the state, has made the mosquito season longer, and allows infected mosquitoes to spread diseases faster.

- In general, mosquitoes can be divided into two different types based on the habitats where they lay their eggs: standing water mosquitoes and floodwater mosquitoes. Most mosquito eggs need small amounts of water to hatch and develop into adult mosquitoes.
- **Prevention.** The best way to avoid getting sick from a mosquito is to prevent bites in the first place. There are many ways to prevent mosquito bites, including wearing insect repellent and wearing appropriate clothes when you are outdoors.

West Nile Virus

Mosquito that transmits West Nile Virus



West Nile virus is an illness spread by the bite of an infected mosquito. The type of mosquitoes that spread West Nile virus can be found in every county in Wisconsin. Not all mosquito bites will make you sick, but it is still important to take steps to protect yourself and your family while enjoying time outdoors. West Nile virus is preventable.

West Nile Virus: About

West Nile virus is an illness spread by the bite of an infected mosquito. In Wisconsin, it is spread by *Culex* species mosquitoes.

West Nile virus cases occur throughout the U.S. In Wisconsin, West Nile virus was first found in wild birds in 2001, and the first human infections were reported in 2002.

Anyone can get West Nile virus, but people who spend more time outdoors are at a higher risk of being bitten by an infected mosquito. Mosquitoes are usually most active in Wisconsin from May to September.

The mosquitoes that spread West Nile virus can be found in areas near standing water, which they need to breed. It is important to remove standing water sources, such as containers, leaves, and yard debris, to reduce breeding habitats in your yard.

- Mosquitoes get infected with West Nile virus by feeding on infected birds.
 - After feeding on a bird that has West Nile virus, the virus may end up inside of the mosquito.
 - Once it has the virus, a mosquito can spread the virus to other birds and mammals, including humans, when they take another blood meal.
- The mosquitoes that spread West Nile virus are active during the summer and into the fall, or anytime during warm weather months.
- The risk of West Nile virus is present anytime mosquitoes are active, but it is highest during the months of August and September.
- Few mosquitoes actually carry the virus, but it is important to take prevention measures when spending time outside.
- West Nile virus cannot be spread person to person or directly from a bird to a person.
- It is possible to become infected with West Nile virus through a blood transfusion or organ transplant from infected donors, but this is very rare.

Dead Bird Reporting

As of January 2020, the Division of Public Health no longer collects dead birds for West Nile virus testing. Due to this change, the Dead Bird Reporting Hotline (800-433-1610) has been disconnected.

What should I do if I find a dead bird?

Please refer to the Wisconsin Department of Natural Resources for instructions on what to do if you find a dead bird. If you are told to dispose of the bird's carcass, don't handle it with

your bare hands. Use gloves or an inverted plastic bag to place the carcass in a garbage bag, which can then be placed in your regular trash.

What are the signs and symptoms of West Nile virus?

Symptoms can start 3–14 days after being bitten by an infected mosquito.

About 80% of people infected with West Nile virus never develop symptoms, while about 20% of people may experience mild illness. Less than 1% of people infected will become severely ill. In rare cases, the infection may be fatal, especially in the elderly and people with other medical conditions. Past infection with West Nile virus can make you immune to the virus in the future.

Mild signs and symptoms:

- Fever
- Headache
- Muscle aches
- Joint pain
- Rash
- Swollen lymph nodes
- Photophobia (sensitivity to light)
- Nausea
- Vomiting

Severe signs and symptoms:

- Extreme muscle weakness
- Inflammation of the brain (encephalitis)
- Confusion or disorientation
- Paralysis
- Coma
- Death

How is West Nile virus treated?

There is currently no available treatment or vaccine for West Nile virus. Over-the-counter pain relievers may be given to relieve mild symptoms. In severe cases, patients may need to be hospitalized to receive supportive treatment. **If you believe you or a family member may have West Nile virus, contact your doctor.**

La Crosse Encephalitis

La Crosse encephalitis is an illness spread by the bite of an infected mosquito. Mosquitoes that spread La Crosse encephalitis can be found throughout Wisconsin. Not all mosquito bites will make you sick, but it is still important to take steps to protect yourself and your family while enjoying time outdoors. La Crosse encephalitis is [preventable](#).

La Crosse Encephalitis: About

La Crosse encephalitis is an illness spread by mosquitoes. In Wisconsin, it is spread to humans by the bite of an infected *Aedes triseriatus* mosquito, also known as the eastern tree hole mosquito.

La Crosse encephalitis virus is closely related to [Jamestown Canyon virus](#). La Crosse encephalitis mostly occurs in the Midwestern, mid-Atlantic, and Southeastern parts of the U.S. The first case of La Crosse encephalitis was identified in a Minnesota resident who was diagnosed in La Crosse, Wisconsin, in 1960.

Anyone can get La Crosse encephalitis, but people who spend more time outdoors are at a higher risk of being bitten by an infected mosquito. Mosquitoes are usually most active in Wisconsin from May to September.

Mosquitoes can be found in areas with standing water, which they need to breed. It is important to remove standing water sources, such as containers, leaves, and yard debris, to reduce breeding habitats in your yard. For more tips, please visit our [Mosquito Bite Prevention page](#).

How is La Crosse encephalitis virus spread to humans?

La Crosse encephalitis virus is spread to humans through the bite of an infected mosquito.

- Mosquitoes become infected with La Crosse encephalitis virus by feeding on infected small mammals, such as chipmunks and squirrels, in forest habitats.



- - After feeding on a mammal that has La Crosse encephalitis virus, the virus will end up inside of the mosquito.
 - Once it has the virus, a mosquito can spread the virus to other mammals, including humans, when they take another blood meal.
- The eastern tree hole mosquito is an aggressive daytime-biting mosquito, especially in or near woods infested with these mosquitoes. Female mosquitoes prefer to lay their eggs in pools of water in tree holes.
- The mosquitoes that spread La Crosse encephalitis are usually most active during the late summer, into the fall.
- Few mosquitoes actually carry the virus, but it is important to take prevention measures when spending time outside.

La Crosse encephalitis is preventable.

What are the signs and symptoms of La Crosse encephalitis?

Symptoms can show up five to 15 days after being bitten by an infected mosquito.

Most people who are infected with La Crosse encephalitis virus never develop obvious signs of infection. Others may develop mild symptoms like fever, fatigue, and headache. Infection with the virus can lead to severe illness, including neurological symptoms, but this is rare. Severe illness is more likely to develop in children under 16 years old. Death from an infection with La Crosse encephalitis is rare, but has been documented. Most patients recover completely. However, lasting symptoms of the disease, including seizures,

paralysis, and cognitive abnormalities, have been reported in some cases. If you have had La Crosse encephalitis, you cannot get it again.

Mild signs and symptoms:

- Fever
- Headache
- Nausea
- Vomiting
- Fatigue (tiredness)
- Lethargy (reduced activity or alertness)

Severe signs and symptoms:

- Seizures
- Hemiparesis (partial paralysis of one side of the body)
- Cognitive and neurobehavioral abnormalities
- Encephalitis (inflammation of the brain)
 - Increasing lethargy
 - Altered mental status
- Coma

How is La Crosse encephalitis treated?

There is currently no treatment or vaccine for La Crosse encephalitis. Over-the-counter pain relievers may be given to relieve the symptoms. In severe cases, patients may need to be hospitalized to receive supportive treatment. **If you believe you or a family member may have La Crosse encephalitis, contact your doctor immediately.**

Jamestown Canyon Virus

Jamestown Canyon is an illness spread to humans by the bite of an infected mosquito. It is currently unknown which types of mosquitoes spread Jamestown Canyon virus in Wisconsin.

Jamestown Canyon virus is closely related to [La Crosse encephalitis virus](#). Jamestown Canyon virus is most common in Wisconsin and Minnesota. The virus is relatively rare in Wisconsin, but recently there has been a large increase in cases.

Anyone can get Jamestown Canyon, but people who spend more time outdoors are at a higher risk of being bitten by an infected mosquito. Mosquitoes are usually most active in Wisconsin from May to September.

Mosquitoes can be found in areas with standing water, which they need to breed. It is important to remove standing water sources, such as containers, leaves, and yard debris, to reduce breeding habitats in your yard.

Symptoms can show up two to 14 days after being bitten by an infected mosquito.

Most people who are infected with Jamestown Canyon virus never develop obvious signs of infection. Others may develop mild symptoms like fever, fatigue, and headache. Infection with the virus can lead to severe illness, including neurological symptoms, but this is rare. Severe illness is more likely to develop in the elderly or in people with compromised immune systems. Death from an infection with Jamestown Canyon is rare, but has been documented. If you have had Jamestown Canyon, you cannot get it again.

Mild signs and symptoms:

- Fever
- Headache
- Fatigue
- Chills
- Muscle aches
- Nausea and/or vomiting
- Joint pain

Severe signs and symptoms:

- Meningoencephalitis (inflammation of the brain and surrounding tissues)
 - Increasing lethargy
 - Altered mental status
- Meningitis (inflammation of the membranes around the brain and spinal cord)

- Severe headache
- Neck stiffness

There is currently no treatment or vaccine for Jamestown Canyon. Over-the-counter pain relievers may be given to relieve symptoms. In severe cases, patients may need to be hospitalized to receive supportive treatment. **If you believe you or a family member may have Jamestown Canyon, contact your doctor immediately.**

Eastern Equine Encephalitis

Eastern equine encephalitis is an illness spread by the bite of an infected mosquito. Mosquitoes that spread Eastern equine encephalitis can be found throughout Wisconsin. Not all mosquito bites will make you sick, but it is still important to take steps to protect yourself and your family while enjoying time outdoors. Eastern equine encephalitis is [preventable](#).

Eastern Equine Encephalitis: About

Eastern equine encephalitis is a rare but severe illness spread by the bite of an infected mosquito. In Wisconsin, it can be spread by different types of mosquitoes.

Most Eastern equine encephalitis cases in the U.S. occur in the Atlantic and Gulf Coast states. Only three human cases of Eastern equine encephalitis were reported in Wisconsin from 1964 to 2018.

Anyone can get Eastern equine encephalitis, but people who spend more time outdoors are at a higher risk of being bitten by an infected mosquito. Mosquitoes are usually most active in Wisconsin from May to September.

Mosquitoes can be found in areas with standing water, which they need to breed. It is important to remove standing water sources, such as containers, leaves, and yard debris, to reduce breeding habitats in your yard. For more tips, please visit our [Mosquito Bite Prevention page](#).

How is Eastern equine encephalitis spread to humans?

In Wisconsin, Eastern equine encephalitis is spread to humans through the bite of an infected mosquito.

- Mosquitoes become infected with Eastern equine encephalitis by feeding on infected birds.
 - After feeding on a bird that has Eastern equine encephalitis, the virus may end up inside of the mosquito.

- Once it is infected with the virus, a mosquito may spread the virus to other birds or mammals, including humans, when they take another blood meal.
- Horses can become sick from infected mosquitoes, but the virus does not spread between horses, from horses to people, or between people.
- Mosquitoes are usually most active in Wisconsin during the warmer summer months and into the fall.
- Few mosquitoes actually carry the virus, but it is important to take prevention measures when spending time outside.

Eastern equine encephalitis is preventable.

What are the signs and symptoms of Eastern equine encephalitis?

Symptoms can show up four to 10 days after being bitten by an infected mosquito.

Some people infected with Eastern equine encephalitis virus never develop symptoms. Those who do become sick may develop a mild flu-like illness, and others may develop an **encephalitic infection** (an infection that involves swelling of the brain). The severity of illness usually depends on the age of the person and if they have underlying health problems. Eastern equine encephalitis can be very severe, and even fatal, especially in those older than 50 and younger than 15. About one-third of people who develop severe illness will die, and those who recover often have mild to severe brain damage. If you have had Eastern equine encephalitis virus, you cannot get it again.

Mild signs and symptoms:

- Fever
- Chills
- Muscle aches
- Joint pain
- Malaise

Encephalitic infection signs and symptoms:

- Fever
- Headache

- Irritability
- Restlessness
- Drowsiness
- Loss of appetite
- Vomiting
- Diarrhea
- Bluish discoloration of the skin
- Convulsions
- Coma

How is Eastern equine encephalitis treated?

There is currently no treatment or vaccine for Eastern equine encephalitis. Over-the-counter pain relievers may be given to relieve symptoms. In severe cases, patients may need to be hospitalized to receive supportive treatment. **If you believe you or a family member may have Eastern equine encephalitis, contact your doctor immediately.**

Fight the Bite: Prevent Mosquito Bites

When enjoying time outdoors during warmer months, it is important to be aware of mosquitoes and take steps to protect yourself from bites. You can take several steps to "fight the bite" and prevent illnesses spread by mosquitoes.

Prevention steps include using personal protection and getting rid of mosquito breeding habitats in your yard. Mosquitoes are usually most active in Wisconsin from May to September, but can stay active until temperatures become too cold for them to survive.

Personal Protection

There are many steps you can take to protect yourself from mosquito bites.

- **Use Repellent on Skin and Clothing**
- Use insect repellents with **20-30% DEET**, 10–20% picaridin, 10–20% IR3535, or 30–40% oil of lemon eucalyptus on skin and clothes to prevent mosquito bites.
 - Parents should apply repellents to their children, and be sure to avoid hands, eyes, and mouth.

- Do not use repellents on children under two months of age, and do not use products containing oil of lemon eucalyptus on children under three years of age.
- Apply permethrin (a pesticide that kills mosquitoes) to clothes and gear to prevent mosquito bites. Permethrin kills mosquitoes when they land on your clothes. It lasts through several washes after it is applied. **Do not apply directly to skin.**
- Carefully apply repellents according to the label instructions.
- Wash skin that has repellent on it after coming indoors.
- Some repellents need to be applied more often than others. [Find which repellent is right for you](#) at the Environmental Protection Agency website.
- For more information on insect repellents, visit the DHS [Tick and Insect Repellents webpage](#) and read [Insect Repellent Essentials: A Brief Guide](#) from the Northeast Regional Center for Excellence in Vector-borne Diseases.

Wear Appropriate Outdoor Clothing

- Wear long-sleeved shirts, long pants, socks, and shoes outdoors during peak mosquito activity hours. Apply repellent to any bare skin not covered by clothing.
- Wear loose-fitting and thicker clothing so it is more difficult for mosquitoes to bite through clothes to your skin.
- Wear head nets if you go into areas with high mosquito activity.

Avoid Direct Contact with Mosquitoes

- Place screens on windows and doors, and check them often to make sure they are sealed tightly and in good condition.
- Stay indoors during peak mosquito activity hours, usually dusk and dawn for most mosquitoes found in Wisconsin.

Source of information: Wisconsin Department of Public Health and CDC Center for Disease Control

How is West Nile virus spread to humans?

West Nile virus is spread to humans through the bite of an infected mosquito.