



### Diseases Fact Sheet - West Nile Virus

#### South Dakota Department of Health

**Office of Disease Prevention Services - 605-773-3737 -(1-800-592-1861 in South Dakota only)**

This material is provided for informational purposes only and is not a substitute for medical care. We are not able to answer personal medical questions. Please see your health care provider concerning appropriate care, treatment or other medical advice.

#### What is it?

West Nile virus is an arthropod-borne virus (arbovirus) most commonly spread by infected mosquitoes. West Nile virus can cause febrile illness, encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord).

#### How do people get infected with West Nile virus?

Most people get infected with West Nile virus by the bite of an infected mosquito. Mosquitoes become infected when they feed on infected birds. Infected mosquitoes can then spread the virus to humans and other animals. In a very small number of cases, West Nile virus has been spread through blood transfusions, organ transplants and from mother to baby during pregnancy, delivery or breastfeeding.

#### Who is at risk for infection with West Nile virus?

Anyone living in an area where West Nile virus is present in mosquitoes can get infected. West Nile virus has been detected in all lower 48 states (not in Hawaii nor Alaska). Outbreaks have been occurring every summer since 1999. The risk of infection is highest for people who work outside or participate in outdoor activities because of greater exposure to mosquitoes.

#### How soon do people get sick after being bitten by an infected mosquito?

The incubation period is usually two to six days but ranges from two to 14 days. This period can be longer in people with certain medical conditions that affect the immune system.

#### What are the symptoms of West Nile virus disease?

- **No symptoms in most people.** Most people (70-80%) who become infected with West Nile virus do not develop any symptoms.
- **Febrile illness in some people.** About one in five people who are infected will develop a fever with other symptoms such as headache, body aches, joint pains, vomiting,

diarrhea or rash. Most people with this type of West Nile virus disease recover completely, but fatigue and weakness can last for weeks or months.

- **Severe symptoms in a few people.** Less than 1% of people who are infected will develop a serious neurologic illness such as encephalitis or meningitis (inflammation of the brain or surrounding tissues). The symptoms of neurologic illness can include headache, high fever, neck stiffness, disorientation, coma, tremors, seizures or paralysis.
- Recovery from severe disease may take several weeks or months. Some of the neurologic effects may be permanent. About 10 percent of people who develop neurologic infection due to West Nile virus will die.

### Who is at risk for serious illness if infected with West Nile virus?

People with certain medical conditions, such as cancer, diabetes, hypertension and kidney disease are also at greater risk for serious illness.

### How is West Nile virus disease diagnosed?

Diagnosis is based on a combination of clinical signs and symptoms and specialized laboratory tests of blood or spinal fluid. These tests typically detect antibodies that the immune system makes against the viral infection.

### What is the treatment for West Nile virus disease?

There are no medications to treat nor vaccines to prevent West Nile virus infection. Over-the-counter pain relievers can be used to reduce fever and relieve some symptoms. People with milder symptoms typically recover on their own, although some symptoms may last for several weeks. In more severe cases, patients often need to be hospitalized to receive supportive treatment, such as intravenous fluids, pain medication and nursing care.

### Can a human get West Nile virus twice?

Medical professionals don't believe so. Like many other viruses, medical tests indicate that once a person has been infected with West Nile, they develop a natural immunity to future infection by the virus for life. However, this immunity may decrease over time or with further health conditions that compromise the immune system. Because West Nile has not been active in the United States for many years, future tests may tell us more about the long-term health implications of West Nile.

### Should we stay indoors?

It is not necessary to limit any outdoor activities, unless local officials advise you otherwise. However, you can and should try to reduce your risk of being bitten by mosquitoes. In addition

to reducing stagnant water in your yard, make sure all windows and doors have screens, and that all screens are in good repair. If WNV is found in your area:

- Minimize time spent outdoors between dusk and dawn.
- Wear shoes, socks, long pants and a long-sleeved shirt when outdoors for long periods of time, or when mosquitoes are most active.
- Use mosquito repellent containing DEET, Picaridin, oil of lemon eucalyptus or IR3535, according to directions, when you are outdoors.

### **Do all mosquitoes transmit disease?**

No. Some mosquitoes do not transmit disease. There have been 43 different species of mosquitoes identified in South Dakota. Of these only nine species are known vectors of WNV. Other species have been associated with WNV in other states.

### **Where do mosquitoes live and breed?**

The mosquito that commonly transmits WNV lays its eggs in stagnant water, both in natural ground pools and in artificial containers. The eggs become larvae that remain in the water until they mature and fly off. Weeds, tall grass and shrubbery provide an outdoor home for adult mosquitoes. They can also enter houses through unscreened windows or doors or broken screens. Most mosquitoes will breed in discarded tires.

### **When are mosquitoes most active?**

Some mosquitoes are most active between dusk and dawn, when the air is calm. However, others may be present at any time of day, and feed during the daytime and at dusk.

### **What bird(s) can carry West Nile virus?**

Although most birds can be infected with West Nile virus, crows, blue jays, magpies, hawks, owls and eagles are most likely to die from the virus.

### **Can you get West Nile virus directly from birds?**

There is no evidence that a person can get the virus from handling live or dead infected birds. However, avoid bare-handed contact when handling any dead animals and birds. Use gloves or double plastic bags to place the carcass in a garbage can.

### **Can other animals become infected?**

Yes. WNV can make horses very ill. It can also be detected in dogs, cats, bats, chipmunks, raccoons, skunks, squirrels and domestic rabbits. It is important to remember that animals cannot transmit WNV to people.

### What additional measures can I take to protect my family and myself?

To reduce the mosquito population around your home and property:

- Reduce or eliminate all standing water.
- Remove all discarded tires on your property. Used tires have become an important source of mosquito breeding in the nation.
- Drill holes in the bottoms of recycling containers that are kept outdoors.
- Make sure roof gutters drain properly, and clean clogged gutters in the spring and fall.
- Turn over plastic wading pools and wheelbarrows when not in use.
- Change the water in birdbaths.
- Clean vegetation and debris from edges of ponds.
- Clean and chlorinate swimming pools, outdoor saunas and hot tubs.
- Drain water from pool covers.
- Use landscaping to eliminate standing water that collects on your property.

### Since bats eat insects, should we encourage bats to live on our property to help control mosquitoes?

No. Research has shown that insectivorous bats are selective feeders and mosquitoes make up a very small percent of their diet. They will typically feed on the larger insects. Bats can also harbor and transmit rabies. Bats are not an adequate means in controlling the population of mosquitoes.

### Is there a vaccine against West Nile encephalitis?

There is no human vaccine for WNV.

### Should people take the West Nile virus vaccine that is licensed for use in horses?

No. This vaccine has not been studied in humans and could be harmful. The effectiveness of this vaccine in preventing West Nile virus infections in horses has yet to be fully evaluated, and its effectiveness in humans is completely unknown. Veterinary vaccines are not manufactured with the same standards required of human vaccines, nor are they required to undergo the extensive field testing required of human vaccines before they are licensed. For these reasons, veterinary vaccines and other veterinary drugs should never be used in humans.

### Can I donate blood if I was diagnosed with West Nile virus infection?

If you have been diagnosed with West Nile virus by your doctor, you should not donate blood for 120 days. If you are diagnosed shortly after giving blood, you should tell your blood center. Donation centers try to ensure that donors who recently had West Nile virus do not give blood



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for 120 days. Let the center know if you have had a West Nile virus infection. They will help you decide if it is safe for you to donate.

### Related Sites:

- [South Dakota Department of Health West Nile Virus Information](#)
- [Centers for Disease Control and Prevention](#)
- [South Dakota State University, Department of Biology & Microbiology](#)