

West Nile Virus

What is West Nile virus?

West Nile virus (WNV) is a viral illness you can get from a mosquito bite. Most of the time the illness is mild, but sometimes it can cause inflammation of the brain (encephalitis) or inflammation of the membranes that cover the brain and spinal cord (meningitis). The risk of severe infection is greatest for people who are over 70 years old or who have a weakened immune system.

What is the cause?

Wild and domestic birds, mainly crows, carry the West Nile virus. Mosquitoes become carriers of the virus when they bite infected birds. You can then get the virus if you are bitten by an infected mosquito. There are no known cases of people getting WNV directly from an infected bird.

The risk of West Nile virus is seasonal in the northern states of the US and usually starts in the spring. The peak time for infection is mid to late August. In milder southern climates, the infection may occur year-round.

The infection is not spread by normal person-to-person contact like touching, kissing, or caring for someone who is infected. It can be spread through blood transfusions and organ transplants. However, blood centers and hospitals screen for West Nile Virus in donated blood and organs. The virus might also be transmitted through breast milk. However, the risk of spread of the virus to the baby is believed to be very low. If you are breast-feeding and you have a WNV infection, the American Academy of Pediatrics and the CDC say that it's OK to keep breast-feeding.

What are the symptoms?

Often there are no symptoms. Children are more likely to have symptoms than adults. When symptoms do occur, they usually start 3 to 14 days after you are bitten by an infected mosquito. They are usually mild and last a few days.

Symptoms may include:

- Fever
- Headache
- Body aches
- Nausea or vomiting
- Rash
- Swollen lymph glands

When WNV affects the brain, symptoms may include:

- Tremors, like a shaking of your hands that you cannot control
- Stiff neck
- High fever

- Severe headache
- Paralysis
- Weakness
- Confusion
- Seizures
- Coma

How is it diagnosed?

Your healthcare provider will ask about your symptoms and medical history. Your provider will examine you. Tests may include:

- Blood tests
- Spinal tap (lumbar puncture), which uses a needle (after the skin is numbed) to get a sample of fluid from the spine to test for meningitis
- EEG, a test that measures the electrical activity of the brain (brain waves)
- CT or MRI scan to get detailed pictures of the brain

How is it treated?

There is no medicine that cures West Nile virus. If your symptoms are mild, they will usually go away on their own. In most cases you can care for yourself at home. If you have a serious infection, you may need to stay at the hospital. You may be given IV fluids, pain relievers, or other treatments.

Most people infected with WNV, including nearly all children, don't get seriously ill, and they recover fully. Symptoms usually last 3 to 6 days, but they can last as long as several weeks or months.

If you have a serious infection, you may be ill for weeks or months. In the most serious cases, the nervous system or brain may be injured.

How can I take care of myself?

Here are some things you can do to take care of yourself while you are sick:

- Rest.
- Take acetaminophen or an anti-inflammatory medicine, such as ibuprofen, for fever, headache, or muscle aches.
 - Nonsteroidal anti-inflammatory medicines (NSAIDs), such as ibuprofen, may cause stomach bleeding and other problems. These risks increase with age. Read the label and take as directed. Unless recommended by your healthcare provider, don't take for more than 10 days for any reason.
 - Check with your healthcare provider before you give any medicine that contains aspirin or salicylates to a child or teen. This includes medicines like baby aspirin, some cold medicines, and Pepto-Bismol. Children and teens who take aspirin are at risk for a serious illness called Reye's syndrome.

Follow your healthcare provider's instructions. Ask your provider:

- How and when you will hear your test results
- How long it will take to recover
- What activities you should avoid and when you can return to your normal activities
- How to take care of yourself at home
- What symptoms or problems you should watch for and what to do if you have them

Make sure you know when you should come back for a checkup.

If you are older or live alone, you may need someone to check on you at least daily to make sure you don't start having serious symptoms, such as confusion or coma.

How can I help prevent West Nile virus?

WNV can be prevented by taking precautions to avoid exposure to mosquitoes:

- Stay indoors at dawn, dusk, and in the early evening, when mosquitoes are most likely to be around.
- Wear long pants and long-sleeved shirts, especially from dusk to dawn. This is the time when you are most likely to get bitten.
- Use an insect repellent whenever you are outdoors. Don't use more repellent than recommended in the package directions. Don't put repellent on open wounds or rashes. Don't put it on your eyes or mouth. When using sprays for the skin, don't spray the repellent directly on your face. Spray the repellent on your hands first and then put it on your face. Then wash the spray off your hands.
 - Adults should use repellent products with no more than 35% DEET. Children older than 2 months can use repellents with no more than 30% DEET. DEET should be applied just once a day. Wash it off your body when you go back indoors.
 - Picaridin may irritate the skin less than DEET and appears to be just as effective.
 - Spray clothes with repellents because mosquitoes may bite through thin clothing. Products containing permethrin are recommended for use on clothing, shoes, bed nets, and camping gear. Permethrin-treated clothing repels and kills ticks, mosquitoes, and other insects and can keep working after laundering. Permethrin should be reapplied to clothing according to the instructions on the product label. Some commercial products are available pretreated with permethrin. Permethrin does not work as a repellent when it is put on the skin.
 - In some studies, oil of lemon eucalyptus, a plant-based repellent, provided as much protection as repellents with low concentrations of DEET, but it hasn't been as well tested as DEET. Oil of lemon eucalyptus should not be used on children under age 3.
- Install or repair window and door screens so it is harder for mosquitoes to get indoors.

- Mosquitoes lay eggs in water. To reduce mosquito breeding, drain standing water. Routinely empty water from flowerpots, pet bowls, clogged rain gutters, swimming pool covers, buckets, barrels, cans, and other items that collect water.

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