



Patient Information

West Nile Virus: Beyond the Buzz

First discovered in Uganda in 1937, the West Nile virus made its way to North America in 1999. It's transmitted to humans and other mammals primarily through the bite of an infected mosquito. Mosquitoes acquire West Nile virus by biting infected birds. Although there's currently no cure for infection, the vast majority of people who contract West Nile virus have few or no symptoms and recover quickly and completely. About one in 150, however, develop severe disease, which can be fatal.

In 1999, 62 cases of West Nile virus were reported in the United States with seven related deaths. Last year, 9,006 cases and 220 deaths were reported. The disease has spread rapidly throughout the country, and medical research has responded quickly. Now, a vaccine for the virus is being tested, and recent scientific breakthroughs offer hope for developing treatments. In the meantime, prevention is key.

How do I know if I'm at risk?

In the United States, the average person's risk of contracting West Nile virus is very low. Usually, only 1% of an area's mosquitoes carry the virus, and fewer than 1% of people bitten by an infected mosquito develop symptoms. For certain groups, however, the risk of severe infection is greater. These include people who spend a lot of time outdoors; who are over age 50; or whose immune systems have been weakened by HIV or AIDS, cancer, diabetes, al-

coholism, heart disease, a recent organ transplant, or recent chemotherapy.

Your chances of infection also depend on where you live. In U.S. states that have cooler climates, mosquitoes are most active from April through October. But in states with warmer—and especially wetter—climates, infected mosquitoes may be active all year.

West Nile virus can be contracted through blood transfusion or organ or tissue transplantation, but this is very rare.

Although a person with West Nile virus is infectious for only about four to seven days, it's possible for a mother to pass the infection to her baby during childbirth or through breastfeeding. West Nile virus cannot be acquired by touching, kissing, or being near an infected person.

What are the warning signs?

About 80% of people who are bitten by an infected mosquito never get sick. Most of the rest develop only mild, flulike symptoms—such as fever, headache, body aches, loss of appetite, sore throat, sensitivity to light, abdominal pain, skin rash on the midsection, or swollen lymph glands. These symptoms generally start two to 15 days after the mosquito bite and resolve naturally within a few days, leaving no lasting effects.

Occasionally, however, the virus migrates to the brain, where it can cause such serious complications as *encephalitis*



(in-sef-uh-**lite**-us), a swelling of the brain; *meningitis* (men-in-**jite**-us), a swelling of the membrane around the brain and spinal cord; or *meningoencephalitis* (men-in-joe-in-sef-uh-**lite**-us), a swelling of both the brain and its surrounding membrane. Symptoms of these more severe conditions include high fever, nausea or vomiting, diarrhea, headache, joint pain, neck and back stiffness, difficulty swallowing, disorientation, stupor, coma, body trembling, convulsions, muscle weakness, and paralysis. Severe West Nile virus infection can persist for weeks and cause permanent nervous system damage—or even death.

When do I need medical attention?

Don't panic if you get a mosquito bite. Watch for symptoms, and if they're mild, make an appointment with your doctor. If you have any serious symptoms, contact your doctor immediately or go to the emergency department of your local hospital.

West Nile virus infection is diagnosed after a physical exam and a series of tests. Blood samples are drawn and checked for white blood cell levels and specific antibodies (substances your body produces in response to an infection). If severe infection is suspected, the doctor may want to perform a lumbar puncture (or "spinal tap") to test the fluid around your spinal cord. A computed tomography (or CAT) scan or magnetic resonance imaging (better known as MRI) can reveal any swelling in your head.

How can I avoid the problem?

Until a human vaccine for West Nile virus is approved, avoiding mosquito bites is the best protection. Mosquitoes lay their eggs

in standing water (even a small bucket can yield up to 1,000 mosquitoes), so watch out for water accumulating in and around your yard. Empty water from buckets, flower pots, wading pools, wheelbarrows, and pool covers. Change the water in pet dishes and birdbaths frequently. Keep swimming pools chlorinated, drill drainage holes in all garbage bins, and clean out clogged roof gutters. To keep mosquitoes outside, make sure your home's screens, windows, and doors are in good repair.

Consider staying inside at dawn and dusk, when mosquitoes are most active. When you do go out (especially for long periods of time), keep as much of your skin covered as possible. Use an insect repellent containing the chemical known as DEET, making sure to follow the product's instructions carefully. Higher concentrations of DEET indicate longer—not better—protection, so use a product that's appropriate for the amount of time you plan to spend outdoors. Vitamin B and electromagnetic or ultrasound devices are not effective mosquito deterrents.

If you find a dead bird, report it to the local authorities. Don't handle any dead animal with your bare hands.

How is it treated?

Mild West Nile virus infection typically resolves on its own within a week. Over-the-counter nonaspirin pain medication may help ease symptoms.

People with severe infection usually are hospitalized and given supportive therapy. This can include intravenous fluid replacement, breathing support, and preventive measures to ward off other infections. ●

