

WEST NILE ENCEPHALITIS FACT SHEET



Q. What is West Nile encephalitis?

A. "Encephalitis" means an inflammation of the brain and can be caused by viruses and bacteria, including viruses transmitted by mosquitoes. West Nile encephalitis is an infection of the brain caused by West Nile virus, a flavivirus commonly found in Africa, West Asia, and the Middle East. It is closely related to St. Louis encephalitis virus found in the United States.

Q. Does West Nile encephalitis now occur in the United States?

A. Yes. From August through September 1999, 61 cases of what were initially thought to be St. Louis encephalitis occurred in New York City. At the same time, the unusual death of some birds in the same area prompted investigations that revealed the outbreak actually to be West Nile encephalitis. Seven of the people died. As of November 1999, human cases of West Nile encephalitis had only been detected in New York, although the virus itself had also been isolated from birds in Connecticut, Maryland, New Jersey, and New York; from mosquitoes in Connecticut, New Jersey and New York; and from horses in New York

Q. How do people get West Nile encephalitis?

A. By the bite of a mosquito (primarily the *Culex* species) that is infected with West Nile virus.

Q. What is the basic transmission cycle?

A. Mosquitoes become infected when they feed on infected birds, which may circulate the virus in their blood for a few days. After an incubation period of 10 days to 2 weeks, infected mosquitoes can then transmit West Nile virus to humans and animals while biting to take blood. The virus is located in the mosquito's salivary glands. During blood feeding, the virus is then injected into the animal or human, where it then multiplies and may cause illness.

Q. Can you get West Nile encephalitis from another person?

A. No. West Nile encephalitis is NOT transmitted from person-to-person. For example, you cannot get West Nile virus from touching or kissing a person who has the disease, or from a health care worker who has treated someone with the disease.

Q. Can you get West Nile virus directly from birds?

A. 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 dead animals, including dead birds. Use gloves or double plastic bags to place the carcass in a garbage can.

Q. Besides mosquitoes, can you get West Nile virus directly from other insects or ticks?

A. Infected mosquitoes are the primary source for West Nile virus and caused the recent outbreak in the New York City metropolitan area. Ticks infected with West Nile virus have been found in Asia and Africa. Their role in the transmission and maintenance of the virus is uncertain. However, there is no information to suggest that ticks transmitted West Nile virus to patients in the New York area outbreak.

Q. Where did West Nile virus come from?

A. West Nile virus has been commonly found in humans and birds and other vertebrates in Africa, Eastern Europe, West Asia, and the Middle East, but has not previously been documented in the Western Hemisphere. It is not known from where the U.S. virus originated, but it is most closely related genetically to strains found in the Middle East.

Q. What are the symptoms of West Nile encephalitis?

A. Most infections are mild and symptoms include fever, headache, and body aches, often with skin rash and swollen lymph glands. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis and, rarely, death.

Q. Is a woman's pregnancy at risk if she gets West Nile encephalitis?

A. There is no documented evidence that a pregnancy is at risk due to infection with West Nile virus.

Q. How is West Nile encephalitis treated?

A. There is no specific therapy. In more severe cases, intensive supportive therapy is indicated, i.e., hospitalization, intravenous (IV) fluids and nutrition, airway management, ventilatory support (ventilator) if needed, prevention of secondary infections (pneumonia, urinary tract, etc.), and good nursing care.

Q. Is there a vaccine against West Nile encephalitis?

A. No.

Q. What is the incubation period in humans (i.e., time from infection to onset of disease symptoms) for West Nile encephalitis?

A. Usually 5 to 15 days.

Q. What should a person do if he/she thinks they have West Nile encephalitis?

A. Seek medical care as soon as possible.

Q. Who is at risk for getting West Nile encephalitis?

A. All residents of areas where virus activity has been identified are at risk of getting West Nile encephalitis; persons greater than 50 years of age have the highest risk of severe disease.

Q. What can be done to stop a West Nile encephalitis outbreak?

A. In the Fall of 1999, the risk in the New York City area was greatly reduced due to the effectiveness of mosquito control and public education programs. However, the risk of infection by West Nile virus is not completely over until mosquito activity ceases for the season, i.e., when freezing temperatures are experienced. The transmission cycle for West Nile virus in North America is not fully understood because it is new to this area. The virus may survive over the winter in birds or in hibernating adult mosquitoes, to again become a problem when the weather warms up the following year. In southern cities where mosquito activity is ongoing West Nile encephalitis is known to occur year round. Routine testing of mosquitoes and birds for the presence of West Nile virus will greatly enhance early detection capabilities.

Q. Of the people who become ill from West Nile virus infection, what proportion die?

A. Case-fatality rates range from 3% to 15% and are highest in the elderly.

Q. How does West Nile virus actually cause death in humans?

A. Following transmission by an infected mosquito, West Nile virus multiplies in the person's blood system and crosses the blood-brain barrier to reach the brain. The virus interferes with normal central nervous system functioning and causes inflammation of brain tissue.

Q. How many cases of West Nile encephalitis occurred in the U.S. last year?

A. Prior to August 1999, West Nile virus had never been reported in the U.S. In 1999, 61 cases of severe disease and 7 deaths occurred in the New York area. West Nile virus infections in Queens, NY, in 1999. No reliable estimates are available for the number of cases of West Nile encephalitis that occur worldwide.

Q. Is the disease seasonal in its occurrence?

A. In the Temperate Zone of the world (i.e., between latitudes 23.5° and 66.5° north and south), West Nile encephalitis cases occur primarily in the late summer or early fall. In the southern climates where temperatures are milder, West Nile virus can be transmitted year round.

Q. Do wild birds infected with West Nile virus die or become ill?

A. This has not been previously reported in nature, but occurred in the New York area epidemic, where there was a large die-off of American crows. A total of 18 native bird species have demonstrated morbidity or mortality. Also, domestic geese were reported as dying from West Nile virus infection in Israel in late 1999.

Q. Can West Nile virus cause illness in dogs or cats?

A. There is a published report of West Nile virus isolated from a dog in southern Africa (Botswana) in 1982. There are no published reports regarding cats, but West Nile virus was isolated from a dead cat in the New York area epidemic. However, a serosurvey of these animals in the epidemic area showed a low infection rate.

Q. Can infected dogs or cats be carriers (i.e., reservoirs) for, and transmit West Nile virus to humans?

A. West Nile virus is transmitted by infectious mosquitoes. There is no documented evidence of person-to-person, animal-to-animal, or animal-to-person transmission of West Nile virus. Veterinarians should take normal infection control precautions when caring for an animal suspected to have this or any viral infection.

Q. How do dogs or cats become infected with West Nile virus?

A. The same way humans become infected, by the bite of infectious mosquitoes. The virus is located in the mosquito's salivary glands. During blood feeding, the virus is injected into the animal. The virus then multiplies and may cause illness. Mosquitoes become infected when they feed on infected birds, which may circulate the virus in their blood for a few days. It is possible that dogs and cats could become infected by eating dead infected animals such as birds, but this is unproven.

Q. Can a dog or cat infected with West Nile virus infect other dogs or cats?

A. No. There is no documented evidence that West Nile virus is transmitted from animal-to-animal.

Q. How long can a dog or cat be infected with West Nile virus ?

A. The answer is not known at this time.

Q. Should a dog or cat infected with West Nile virus be destroyed? What is the treatment for an animal infected with West Nile virus?

A. No. There is no reason to destroy an animal just because it has been infected with West Nile virus. Full recovery from the infection is likely. Treatment would be supportive and consistent with standard veterinary practices for animals infected with a viral agent.

Q. What can I do to reduce my risk of becoming infected with West Nile virus?

A.

- Stay indoors at dawn, dusk, and in the early evening.
- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 20% to 35% DEET (N,N-diethyl-meta-toluamide). DEET in high concentrations (greater than 35%) may cause side effects, particularly in children; avoid products containing more than 35% DEET.
- Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands of children. Insect repellents should not be applied to very young children (< 3 years old).
- Spray clothing with repellents containing permethrin or DEET, as mosquitoes may bite through thin clothing.
- Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's **DIRECTIONS FOR USE**, as printed on the product.
- Remove standing water around your home. Pay special attention to any containers that may collect water and store them in a manner that would not allow water to accumulate in them.
- Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

Q. Where can I get more information on mosquito-borne viral encephalitis?

A. Visit the CDC website on [Arboviral Encephalitides](#).

Q. Where can I get more information on pesticides used to control mosquito populations?

A. Visit the Environmental Protection Agency (EPA) website on [Pesticides and Mosquito Control](#).

This fact sheet was compiled from data made available by the U.S. Army Centers for Health Promotion and Preventive Medicine and the Centers for Disease Control.