

What is West Nile virus?

West Nile virus is one of a group of viruses called arboviruses that are spread by mosquitoes and may cause illness in birds, animals, and humans. West Nile virus was not known to be present in the United States until the summer of 1999. Previously, West Nile virus was only found in Africa, western Asia, the Middle East, and Eastern Europe.

Where is West Nile virus in the United States?

West Nile virus was first identified as a disease threat in the United States during the summer of 1999 and was limited to the northeastern states through 2000. However, the virus rapidly expanded its geographic range. By the end of 2004, West Nile virus had spread from the Atlantic to the Pacific coast with viral activity confirmed in all 48 contiguous states.

How is it spread?

West Nile virus is primarily spread through the bite of an infected mosquito (usually a *Culex* species). Mosquitoes pick up the virus when they feed on infected birds. The virus must then circulate in the mosquito for a few days before they are capable of transmitting the infection to animals or humans while biting. The virus is found in the salivary gland of the mosquito. During feeding, the virus may be injected into a human or animal where it may multiply and possibly cause disease.

What is the incubation period (i.e. time from exposure to time of disease)?

The incubation period ranges from three to 15 days for both human and equine (horse, mule, or donkey) illness.

What are the symptoms in humans?

Most persons who are infected with West Nile virus will have no noticeable symptoms, or have an illness syndrome called "West Nile Fever" lasting two to ten days. Common symptoms of West Nile Fever include headache, fever, and extreme muscle weakness, occasionally accompanied by vomiting or skin rashes. In some cases, West Nile virus infection will cause severe neurologic disease such as meningitis, paralysis, or encephalitis (swelling and inflammation of the brain). Symptoms of West Nile meningitis or encephalitis may be intense headache, dizziness, stiff neck, marked weakness, muscle tremors, disorientation, mental confusion, or convulsions.

Who is at greatest risk?

Individuals are at risk of acquiring West Nile virus infection if they travel to or live in an area where virus transmission is known to occur. People whose work and hobbies take them outdoors for extended periods of time are at increased risk of being infected due to the increased exposure to mosquitoes. Persons over the age of 50 years appear to be at greatest risk of developing severe disease of the nervous system.

How is West Nile disease treated?

There is no specific treatment. Severe cases often require hospitalization and intensive supportive care.

What is the state doing to monitor the spread of West Nile virus in Oklahoma?

The Oklahoma State Department of Health (OSDH) established a statewide West Nile virus surveillance and testing program in 2001. West Nile virus was first detected in the state during July 2002. The OSDH is continuing to monitor West Nile virus through mechanisms such as statewide equine case tracking and mosquito trapping and testing in some communities. The OSDH Laboratory offers free West Nile testing for human patients through consultation with their physician.

Do all birds infected with West Nile virus die?

No. The severity of the disease in birds appears to vary with the species of birds infected. Birds belonging to the Corvidae family (crows, jays, magpies, and ravens) appear to be very sensitive to West Nile viral infection and suffer a high death rate. Although mortality in a wide variety of birds has been a hallmark of West Nile virus in the U.S., many species of birds tend to survive West Nile virus infection.

What animals besides birds and horses may develop illness from West Nile virus infection?

Birds and equine animals (horses, donkeys, mules, zebras) are most susceptible to disease caused by West Nile virus. Although numerous animals are bitten by infected mosquitoes, illness caused by West Nile virus is uncommon in domestic pets or other wildlife. West Nile virus infection coupled with disease has been rarely diagnosed in a variety of animals, including squirrels, bats, dogs, cats, goats, skunks, domestic rabbits, and even alligators. However, West Nile virus is NOT considered a significant health threat for dogs and cats.

Can a person become infected from handling a sick bird or horse?

There is no documented evidence of animal-to-person transmission of West Nile virus resulting from simply touching an infected animal or its excretions. Because rabies may be clinically indistinguishable from West Nile encephalitis, precautions should be taken to avoid bare-handed contact with a sick horse's saliva. Gloves or inverted plastic bags are advised to cover the hands when picking up a dead bird.

What can I do to reduce the risk of becoming infected with mosquito-borne viruses?

- Apply insect repellent containing an active ingredient like ten percent to 30% DEET (N,N-diethyl-m-toluamide), Picaridin, or oil of lemon eucalyptus [(p-menthane 3,8-diol (PMD))], to exposed skin and clothing when outdoors, especially during the evening and early morning hours. (Always follow labeled directions for proper use.)
- Prevent items such as buckets and tarps from holding standing water.
- If rainwater is collected, cover and seal containers when not collecting rain.
- Empty your outdoor pet's water bowl and refill daily.
- Rinse, scrub, and refill birdbaths weekly.
- Empty plastic wading pools weekly and store indoors when not in use.
- Regularly maintain swimming pools and outdoor hot tubs.
- Store boats covered or upside down.
- For a water garden or ornamental body of water, use an environmentally safe product to kill the larvae, e.g. BTI, or stock with fish that eat mosquito larvae.
- Regularly clean fallen leaves and debris from roof gutters.
- Trim grass and weeds and dismantle brush to deprive mosquitoes of a habitat.
- Repair or replace all broken or torn window and door screens.
- Repair leaky lawn irrigation spouts.

Where can I go for more information?

Go to the Oklahoma State Department of Health web site at <http://www.health.state.ok.us/program/cdd/ow/index.html> for current updates on West Nile virus activity and state surveillance results, or visit the following web sites for more information:

<http://www.cdc.gov/ncidod/dvbid/arbor/index.htm>

http://nwhc.usgs.gov/disease_information/west_nile_virus/index.jsp

<http://www.epa.gov/pesticides/health.mosquitoes/>

<http://www.aphis.usda.gov/vs/nahss/equine/wnv/index.htm>

<http://entopl.okstate.edu/mosquito/mosquito.html>

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