

Can West Nile viral encephalitis be prevented?

Several vaccines are approved for use in horses to aid in the prevention of viremia and clinical disease from West Nile virus infection. Many fly repellent products also repel mosquitoes when used according to label directions. For other species, including humans, limiting exposure to mosquitoes is considered effective prevention. The following actions may reduce the risk of mosquito bites and possible exposure to West Nile virus:

- Maintain the integrity of screens around your home, porch, and patio.
- During warm months, avoid outdoor activities at dusk and dawn when mosquito activity is at its peak.
- If you must be outdoors during hours when mosquitoes are most active, cover up with shoes, socks, long pants and long-sleeved shirts.
- Use mosquito repellent on exposed skin and spray clothing with repellents containing permethrin or DEET (N,N-diethyl-meta-toluamide). When using insecticides or insect repellents, be sure to read and follow the manufacturer's directions for use. Products containing DEET should not be sprayed on dogs or cats. Consult your veterinarian about the best ways to protect your pet from exposure.
- Eliminate standing water from any receptacles in which mosquitoes might breed. For standing water that cannot be eliminated (e.g. bird baths, etc.), consider the use of larvicides according to label directions.

West Nile viral encephalitis is an emerging disease and new information continues to become available. Additional information is available from the following sources:

American Veterinary Medical Association
(www.avma.org)

U.S. Centers for Disease Control
(<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>)

U.S. Department of Agriculture's Animal and Plant Health Inspection Service
(<http://www.aphis.usda.gov/vs/nahss/equine/wnv/index.htm>)



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What you should know about



West Nile Virus



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What is West Nile virus?

West Nile virus is an arbovirus (short for arthropod-borne virus) that causes encephalitis (inflammation of the brain). Arboviruses are transmitted by blood-feeding insects such as mosquitoes. Most infections with West Nile virus have been identified in wild birds, horses and humans, but the virus can also infect various other wild and domestic animals.

Where did West Nile virus come from?

West Nile virus was first identified in the West Nile district of Uganda in 1937, and has since been found in other parts of Africa, Eastern Europe, West Asia, the Middle East, and the United States. The strain of virus found in the United States most closely resembles that found in the Mediterranean and Middle East. The virus has been reported in nearly all states.

How is West Nile virus transmitted?

Mosquitoes draw the virus from infected birds and transmit it to other animals, including humans, through bites. West Nile viral encephalitis develops when the virus multiplies and crosses the blood-brain barrier. West Nile virus is not transmitted directly from animal to person, person to animal, animal to animal or person to person; however, rare instances of transmission via organ transplantation, blood transfusion, transplacental infection, and breastfeeding have been reported. Cats have been infected experimentally by eating WNV-infected mice. Ticks infected with the virus have been found in Asia and Africa, but there are no verified reports of ticks spreading the virus and their role in transmission has not been determined.

What is the risk of a person contracting West Nile virus?

The risk of becoming ill from a single mosquito bite is extremely low. In areas where mosquitoes carry the virus, less than 1% of mosquitoes are actually infected. Even if mosquitoes are infected, less than 1% of people bitten and infected by those mosquitoes become severely ill.

What clinical signs are associated with West Nile virus infection?

Humans— Most humans infected with the virus are not aware that they have contracted it. If a person does become ill, clinical signs are usually mild and include fever, headache, body aches and, in some cases, skin rash and swollen lymph nodes. Signs of more severe infection include high fever, neck stiffness, muscle weakness, convulsions and paralysis. Death rates associated with severe infection range from 3% to 15% and are highest among the elderly.

Horses— Horses that develop clinical West Nile virus infection may exhibit incoordination, stumbling, weakness, muscle twitching, depression, or fearfulness. A fever is not commonly observed.

Severe cases may become recumbent. The death rate in horses is approximately 30%, and is highest in recumbent horses. The number of cases of equine WNV has decreased annually since 2002, and may be due to vaccination and/or increased development of naturally acquired immunity.

Other animals—Wild birds infected with West Nile virus in the United States are most often found dead; therefore, descriptions of clinical signs in wild birds are not readily available. Clinical signs associated with West Nile virus infection in dogs, cats, bats, chipmunks, skunks, squirrels, domestic rabbits, and domestic birds have not been well described. It appears that, although they may be infected with the virus, many members of these latter species rarely develop clinical signs of disease.

How is West Nile viral encephalitis diagnosed and treated?

Diagnosis of West Nile viral encephalitis is based on a history of exposure, clinical signs, and results of diagnostic tests.

As for most viral diseases, treatment consists of supportive care (e.g., hospitalization, intravenous fluids, respiratory support, anti-inflammatory therapy, prevention of secondary infections, and good nursing care) while the affected animal's immune system responds to the infection.

