

Can West Nile viral encephalitis be prevented?

A vaccine is now available for horses. For humans and other animals, 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:

- Check the integrity of screens around your home, porch and patio.
- During warm months, avoid outdoor activities at dusk and dawn.
- 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) since mosquitoes may bite through thin clothing. 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.
- Eliminate stagnant water from any receptacles in which mosquitoes might breed.

West Nile viral encephalitis is an emerging disease and new information continues to become available. For the most up-to-date information on this and other animal and public health issues, visit www.avma.org.



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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, including West Nile virus, 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.

How is West Nile virus transmitted?

Mosquitoes draw the virus from infected birds and transmit it to animals and humans through bites. West Nile viral encephalitis develops in animals and humans 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 or blood transfusion have been reported. 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% 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 glands. 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 The most common sign is weakness, usually in the hindquarters. Weakness may be indicated by a widened stance, stumbling, leaning to one side and toe dragging. In extreme cases, paralysis may follow. Fever is sometimes evident, as are depression and fearfulness. Approximately 40% of cases of West Nile viral encephalitis in horses proved fatal during the 1999 outbreak in the U.S.

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. Nor have clinical signs associated with West Nile virus infection in dogs, cats, bats, chipmunks, skunks, squirrels, domestic rabbits or domestic birds been well described. It appears that, although they may be infected, most members of these latter species may not 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 blood tests.

As for all viral diseases, treatment consists of providing support (e.g., hospitalization, intravenous fluids, respiratory support and prevention of secondary infections) while the affected individual's immune system responds to the infection.

