

West Nile Virus



Animal Care Services

Health Care Agency – Regulatory Health Services

What is West Nile encephalitis?

West Nile encephalitis describes an inflammation of the central nervous system, which is caused by infection with West Nile Virus. Prior to 1999, West Nile Virus was found only in Africa, Eastern Europe, and West Asia. In August of 1999, it was first identified in the United States. The first human case in the state was reported in 2002, with the first equine case in California reported in 2003.

How do people or animals become infected with West Nile Virus?

People and animals most commonly become infected from the bite of certain kinds of mosquitoes that are infected with the virus. Mosquitoes may pick up the virus when they bite, or take a blood meal, from wild birds that are infected with West Nile Virus. Those mosquitoes may then transmit the virus to people and other animals when biting. Infection occurs primarily in the late summer or early fall.

Does infection always lead to illness?

Infection with West Nile Virus does not always lead to signs of illness in people or animals. Horses are affected by WNV more often than other domestic animals. Many horses infected with WNV do not develop any illness, but of the almost 15,000 equine cases reported in 2002, about one-third died or were euthanized. Other livestock and poultry do not commonly show illness if infected with WNV. In horses that do become clinically ill, the virus infects the central nervous system and may cause symptoms of encephalitis. Clinical signs of encephalitis in horses may include a general loss of appetite and depression, in addition to any combination of the following signs:

- Ataxia (stumbling, staggering, wobbly gait or incoordination)
- weakness or paralysis of limbs
- inability to stand
- circling
- fever (in 25% of affected horses)
- muscle fasciculation
- paralysis
- head tilt
- knuckling over

- muscle twitches or tremors
- apparent blindness

It is important to note that not all horses with clinical signs of encephalitis have West Nile encephalitis. There are other diseases that can cause a horse to have symptoms similar to those resulting from infection with West Nile Virus. If you are concerned that your horse may be exhibiting signs of encephalitis, please contact your veterinarian. Laboratory tests are necessary to confirm a diagnosis.

Is treatment available for West Nile encephalitis in horses?

There is no specific treatment for West Nile encephalitis in horses. Supportive veterinary care is recommended. It is important to diagnose WNV because infection is an indication that mosquitoes carrying the virus are in the area and need to be eliminated.

Is a vaccine available to protect against infection with West Nile Virus?

There are now two WNV vaccines available for horses. Ask your veterinarian for their recommendation on vaccinating your horse for WNV. Because it is important to distinguish between vaccinated and infected horses, accurate vaccination records should be kept. Horses vaccinated against Eastern, Western, and Venezuelan equine encephalitis are not protected against infection with West Nile Virus.

How can I protect my horse against infection with West Nile Virus?

Vaccination of horses is not a guarantee of protection against infection, and does not offer any protection for other animals or people. **The best method of prevention of infection with West Nile Virus for people and animals is to reduce the risk of exposure to the mosquitoes that may carry the virus.** Reducing the risk involves eliminating mosquito-breeding sites to reduce the number of hatching mosquitoes, and to reduce exposure to adult mosquitoes. Mosquitoes breed in stagnant water, so reduction of breeding sites involves eliminating stagnant water sources.

To reduce the number of mosquito breeding sites:

- a. Dispose of tin cans, plastic containers, buckets, ceramic pots or other unwanted water-holding containers on your property.

- b. Pay special attention to discarded tires. Tires are important mosquito breeding sites.
- c. Drill holes in the bottom of recycling containers left outdoors. Containers with drainage holes located only on the sides collect enough water to act as mosquito breeding sites.
- d. Clean clogged roof gutters every year. Millions of mosquitoes can breed in roof gutters each season.
- e. Turn over plastic wading pools when not in use.
- f. Turn over wheelbarrows and don't let water stagnate in birdbaths.
- g. Empty and refill outdoor water troughs or buckets every few days.
- h. Aerate ornamental pools or stock them with fish. Water gardens can become major mosquito producers if they are allowed to stagnate.
- i. Clean and chlorinate swimming pools when not in use. Mosquitoes may even breed in the water that collects on pool covers.
- j. Use landscaping to eliminate standing water that collects on your property, especially near manure storage areas. Mosquitoes may breed in any puddle that lasts for more than four days.
- e. Use topical preparations containing mosquito repellents. Use of insect repellents may be of some value in decreasing exposure of horses to adult mosquitoes. Repellents should not be solely relied upon to prevent mosquito exposure and should be used according to their label instructions regarding appropriate species, method of application, and other precautions.
- f. Fogging of stable premises can be done in the evening to reduce mosquitoes; read directions carefully before using.
- g. House animals in structures with well-maintained insect screening. Take precautions first to eliminate mosquitoes from inside the structure, which may be accomplished through a number of means including the use of mosquito adulticides. In addition, use of fans may reduce the potential ability of mosquitoes to feed on horses.
- h. Reduce outdoor exposure. A recently completed epidemiologic study of WNV suggests that keeping horses in stalls at night may be helpful in reducing their risk of infection.

For tips on controlling mosquitoes on your property, please contact the Orange County Vector Control District at (714) 971-2421 or check out their website at www.ocvcd.org.

Additional steps can be taken to reduce the likelihood of exposure of horses to adult mosquitoes:

- a. Avoid turning on lights inside the stable during the evening and overnight hours. Mosquitoes are attracted to yellow incandescent bulbs.
- b. If light is needed near the stable, place incandescent bulbs outside the stable to attract mosquitoes away from the horses. Black lights (bug zappers) don't attract mosquitoes well.
- c. Reduce the number of birds in and around the stable area. Eliminate roosting areas in the rafters of the stable. Certain species of wild birds are thought to be the main reservoir for the virus.
- d. Periodically look around the property for dead birds, such as crows. Use gloves to handle dead birds and place the birds in plastic bags.

Can a horse infected with West Nile Virus infect other horses?

There is no evidence that infected horses can transmit the virus to other animals, people, or mosquitoes through routine contact. Only a wild bird-mosquito transmission cycle has been proven as a means of transmitting West Nile Virus.

Other Resources:

U.S. Department of Agriculture
<http://www.aphis.usda.gov/lpa/issues/wnv/wnv.html>

California Department of Food and Agriculture—
 Animal Health Branch
www.cdfa.ca.gov/ahfss/ah/wnv_info.htm

UC Davis Center for Equine Health
www.vetmed.ucdavis.edu/ceh/default.htm

Orange County Healthcare Agency—Animal Care Services
www.ocpetinfo.com