



What Horse Owners Should Know about West Nile Virus

What is West Nile virus?

West Nile virus (WNV) is a viral disease previously seen only in Africa, Asia and Southern Europe. This virus can cause encephalitis, an infection of the brain and the spinal cord. WNV was first detected in the United States in 1999 when at least 62 people became seriously ill, and seven of them died. Since then, WNV has rapidly spread throughout the continental United States. In Ohio, WNV was first identified in birds and mosquitoes in 2001. The following year, the first human cases and deaths were reported in Ohio. By the end of 2002, WNV was reported in all 88 Ohio counties, either in birds, mosquitoes, humans or horses. There were 441 human and 644 horse cases identified. WNV is now established in Ohio where cases occur each year and seasonal epidemics can flare up under certain conditions in the summer and continue into the fall.

WNV is spread to people by the bite of an infected mosquito. The principal transmitter of West Nile virus is the Northern house mosquito (*Culex pipiens*). Mosquitoes first become exposed to the virus when they feed on birds that are infected with WNV. Once the mosquito is infected, it may transmit the virus to people or other animals when it bites them. Many birds can be infected with WNV, but crows and blue jays are the most likely to die from the infection. Horses, too, are prone to severe WNV infection. People cannot get WNV from another person or horse that has the disease.

How could a horse get West Nile virus?

Horses become infected with WNV after being bitten by an infected mosquito. There is no evidence that horses can transmit WNV to other horses, birds or people.

What are the signs and symptoms of West Nile encephalitis in horses?

In horses that do become clinically ill, the virus infects the central nervous system and causes symptoms of encephalitis. Clinical signs of encephalitis in horses include loss of appetite and depression, in addition to any combination of the following signs: fever, weakness or paralysis of hind limbs, muscle fasciculations or muzzle twitching, impaired vision, ataxia (incoordination), head pressing, aimless wandering, convulsions, inability to swallow, circling, hyperexcitability or coma.

It is important to note that not all horses with clinical signs of encephalitis have West Nile encephalitis. Other diseases, including rabies, botulism, equine protozoal myeloencephalitis (EPM) and other mosquito-borne viral encephalitic diseases of horses caused by Eastern, Western and Venezuelan encephalitis viruses can cause a horse to have symptoms similar to WNV. If you are concerned your horse may be exhibiting signs of encephalitis, please contact the Ohio Department of Agriculture or your veterinarian. Only laboratory tests can confirm the diagnosis of West Nile encephalitis.

Is there treatment for West Nile encephalitis in horses?

Currently, there is no specific treatment for West Nile encephalitis in horses. Supportive veterinary care is recommended.

Is there a vaccine to protect my horse from West Nile virus?

Currently, there is a vaccine available against WNV. It is imperative that horses are vaccinated twice, three to six weeks apart, initially with this vaccine. At least one yearly booster is recommended after the initial series. Horses that are stressed, such as show and race horses, should have two boosters annually in April and late July. Horses vaccinated against Eastern, Western and Venezuelan equine encephalitis are not protected against WNV.

How can I prevent mosquitoes from affecting my horses?

There are some easy steps you can take to prevent mosquitoes from affecting your horses.

- House horses indoors during peak periods of mosquito activity (dusk and dawn).
- Avoid turning on lights inside the stable during the evening and overnight. Mosquitoes are attracted to lights.
- Place incandescent bulbs around the perimeter of the stable to attract mosquitoes away from the horses. Black lights don't attract mosquitoes well.
- Remove all birds, including chickens, which are in or close to the stable.
- Look around the property periodically for dead birds, such as crows. Use gloves to handle dead birds or use an implement, such as a shovel.
- Eliminate areas of standing water on your property. Shallow standing water, used tires, manure storage pits and drainage areas with stagnant water are ideal mosquito breeding places.
- Topical preparations containing mosquito repellents are available for horses. Read the product label before using and follow all instructions.
- Use fans on the horses while in the stable to help deter mosquitoes.
- Fog stable premises with a pesticide in the evening to reduce mosquitoes. Read directions carefully before using.

For help in assessing mosquito exposure risks on your property and for suggested control practices, please contact your county extension office, county department of environmental protection, local health department, local veterinarian or a mosquito and pest control company.

How can I reduce the number of mosquitoes around my home and neighborhood?

You can reduce the number of mosquitoes around your home and neighborhood by reducing the amount of standing water available for mosquito breeding. Here are some simple steps you can take:

- Dispose of tin cans, plastic containers, ceramic pots or similar water-holding containers on your property.
- Pay special attention to discarded tires. That's where lots of mosquitoes breed.
- Clean clogged roof gutters every year, particularly if the leaves from surrounding trees have a tendency to plug up the drains. Millions of mosquitoes can breed in roof gutters each season.
- Turn over plastic wading pools when not in use. A wading pool becomes a place for mosquitoes to breed.
- Turn over wheelbarrows and don't let water stagnate in birdbaths. Both provide breeding habitats for domestic mosquitoes.

- Aerate ornamental pools or stock them with fish. Water gardens can become major mosquito producers if they are allowed to stagnate. Clean and chlorinate swimming pools when not in use. A swimming pool left untended by a family on vacation for a month can produce enough mosquitoes to infest an entire neighborhood. Mosquitoes may even breed in the water that collects on pool covers.
- Use landscaping to eliminate standing water that collects on your property. Mosquitoes may breed in any puddle that lasts for more than four days.

Can a horse with West Nile virus infect horses in neighboring stalls?

No. There is no documented evidence that WNV is transmitted from horse-to-horse. However, if at all possible, horses with suspected WNV should be isolated from mosquitoes and tested for the virus.

What is Ohio doing to prevent a West Nile virus outbreak?

In response to the finding of WNV in the United States, state agencies, local governments and health professionals have launched a plan to find and control the mosquitoes known to carry the virus. We are testing mosquito populations for the virus and monitoring public health to provide early warnings.

What is the incubation period for West Nile virus?

The incubation period of a WNV infection in both horses and humans is usually three to 15 days.

Do birds infected with the virus die or become ill?

Most birds survive WNV infection; however, some birds, such as crows and jays, frequently die from the infection.

What about ticks?

Some ticks in Europe and Asia have been found to be infected with the virus. Therefore, infected ticks could prove to be a carrier and transmitter of the virus in the future. The U.S. Centers for Disease Control and Prevention also tested ticks in the 1999 outbreak area, but none were infected.

What is the current status of West Nile virus in Ohio?

Contact your local health department or visit the Ohio Department of Health's web site for the current status of WNV in Ohio: <http://www.odh.ohio.gov/wnv>.