

# What Horse Owners Should Know About West Nile Virus

### What is West Nile Virus?

West Nile Virus (WNV) is a viral disease that can cause encephalitis or meningitis, infection of the brain and the spinal cord or their protective covering. Prior to 1999, the disease was found only in Africa, Asia, and southern Europe. Over the past several years, WNV has caused disease in the United States. In 1999, at least 62 people became seriously ill, and seven of those died. Since then, WNV has rapidly spread throughout North America. During the year 2000, 21 human cases of WNV encephalitis were reported in the United States, with two deaths. In 2001, there were 66 cases with nine deaths. In 2002, 4,156 human cases of WNV encephalitis or WNV fever were reported with 284 fatalities. During 2003, almost 10,000 human cases of WNV encephalitis and fever were reported from 46 states, with 264 fatalities. Since 2003, WNV cases and fatalities have continued to remain fairly high. The yearly number of cases and number of fatalities have fluctuated depending on the weather conditions throughout the nation. It is expected that WNV will continue to be a serious disease threat well into the future.

West Nile Virus 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

Year	United States		Ohio	
	Cases	Deaths	Cases	Deaths
1999	62	7	0	0
2000	21	2	0	0
2001	66	9	0	0
2002	4,156	284	441	31
2003	9,862	264	108	8
2004	2,539	100	12	2
2005	3,000	119	61	2
2006	4,266	177	48	4
2007	3.623	124	23	3

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 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.

Continued spread of this disease among wild birds and mosquitoes is anticipated. State, federal, and local agencies are working together to address the health risks of WNV to Ohio families and their animals. Ohio public health officials test for WNV in many species of birds, mosquitoes, and horses. Once infected areas are identified, mosquito control efforts are increased in those areas to protect people from the disease.

#### **Prepared by:**



Ohio Department of Health • Ohio Department of Agriculture • Ohio Department of Natural Resources The Ohio State University • Ohio Environmental Protection Agency • Association of Ohio Health Commissioners Ohio Mosquito Control Association • Ohio Environmental Health Association • United States Department of Agriculture

### 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 are four vaccines available against West Nile Virus. It is imperative that horses are vaccinated according to the label on the 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 West Nile Virus.

# 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, that are in or close to the stable.
- Look around the property periodically for dead birds, such as crows. Any dead birds should be reported to the local health department. Use rubber 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 Department of Health, local veterinarian, or 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 West Nile Virus is transmitted from horse to horse. However, if at all possible, horses with suspected West Nile Virus 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 certain animal populations for the virus and monitoring public health to provide early warnings.

### What is the incubation period?

The incubation period of a West Nile Virus infection is usually five to 15 days.

# Do birds infected with the virus die or become ill?

Large numbers of North American crows and other birds have died of WNV 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.

# Where can I get more information about West Nile Virus?

For more information, call the United States Department of Agriculture at 614-469-5602 or the Ohio Department of Agriculture at 614-728-6220.

### What is the status of WNV in Ohio?

WNV has been confirmed in Ohio every year since 2001. Infected mosquitoes, birds, horses, and humans have been found in all Ohio counties. Therefore, the virus is present throughout the state. Contact your local health department in your area, or visit one of the web sites.

For the current status on WNV in Ohio and for more information, you can log on to the following web sites:

The Ohio State University: http://vet.osu.edu/1516.htm

Ohio Department of Health: http://www.odh.ohio.gov/odhprograms/idc/zoodis/ wnv/wnv1.aspx

National Pesticide Telecommunication Network web site:

http://npic.orst.edu/

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