

# What Horse Owners Should Know About West Nile Virus

## **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 identified in the United States.

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

People and animals can 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 to take a blood meal. Infection occurs primarily in the late summer or early fall in the northeast and Mid Atlantic regions.

## **Does infection always lead to illness?**

Infection with West Nile Virus does not always lead to signs of illness in people or animals. Horses appear to be a species that is susceptible to infection with the virus. 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:

- fever
- weakness of hind limbs
- paralysis of hind limbs
- impaired vision
- ataxia (weakness)
- head pressing
- aimless wandering
- convulsions (seizures)
- inability to swallow
- walking in circles
- hyperexcitability
- coma

It is important to note that not all horses with clinical signs of encephalitis have West Nile encephalitis. Certain other diseases 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.

### **How many horses have been affected by West Nile Virus?**

In 1999, approximately 25 horses became ill from infection with West Nile Virus. In 2000, there were 60 documented clinical cases of infection. Approximately 60% of horses that actually showed signs of illness in 1999 and 2000 recovered from the infection. Others were euthanized or died as a result of infection. Many more horses were infected without showing any clinical symptoms of disease.

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

A WNV vaccine for horses is now available. It has recently been approved for marketing, on a conditional license, which means that the efficacy of the vaccine will be studied for a year. Because it is impossible to distinguish between vaccinated and naturally infected horses with current testing methods, it is important that vaccination records be kept updated for each horse that receives the vaccine. 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.

*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. (Although pigeons have been shown to become infected with West Nile Virus, they do not appear to act as reservoirs and therefore don't transmit the virus to mosquitoes).
- d. Periodically look around the property for dead birds, such as crows. Any suspicious birds should be reported to the Pennsylvania Department of Health at 1-877-PA-HEALTH. Use gloves to handle dead birds and place the birds in plastic bags, as directed by the Department of Health.
- e. Topical preparations containing mosquito repellents are available for horses. Read the product label before using.
- f. Fogging of stable premises can be done 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, county Department of Health, or mosquito and pest control company.

#### **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. Only a wild bird-mosquito transmission cycle has been proven as a means of transmitting West Nile Virus.

#### **What are the symptoms of West Nile Virus infection in people?**

Mild infections may be common and include fever, headache, and body aches, often with a skin rash and swollen lymph glands. In those susceptible to disease, signs can be severe and may include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, paralysis, and possibly death.

#### **Is treatment available for West Nile encephalitis in people?**

There is no specific treatment. In severe cases, hospitalization and intensive supportive therapy may be needed.

#### **Have many people have been affected by infection with West Nile Virus?**

In New York City in 1999, seven of the 62 people with clinical symptoms of infection died. All of the people who died were 68 years of age or older. In 2000, 21 people were known to become ill from the virus. Two elderly people died. As in horses, many more people were probably infected without showing signs of illness.

### **Where has West Nile Virus been found?**

West Nile Virus was first identified in the United States in 1999, in 4 eastern states. In 2000, it was found in 12 northeastern and Mid Atlantic states. It is expected to spread across most of the United States in the next few years.

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

Many species of birds appear to be susceptible to infection with West Nile Virus, and may act as reservoirs of the virus, which allows mosquitoes to become infected when taking blood meals from these birds. Certain species, including crows and blue jays, often become ill and die as a result of infection.

### **Can ticks spread West Nile Virus?**

Some ticks in Europe and Asia have been found to be infected with the virus. It is not yet known if ticks in the United States can spread the virus.

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

For more information:

- United States Department of Agriculture (717) 782-3442  
<http://www.aphis.usda.gov/oa/wnv/index.html>
- Department of Health 1-877-PA-HEALTH (1-877-724-3258).  
<http://www.westnile.state.pa.us/>
- [www.cdc.gov/ncidod/dvbid/westnile/index.htm](http://www.cdc.gov/ncidod/dvbid/westnile/index.htm) The Centers for Disease Control and Prevention (CDC) West Nile Virus Homepage with a wealth of information plus many links to other WNV sites.
- [http://cindi.usgs.gov/hazard/event/west\\_nile/west\\_nile.html](http://cindi.usgs.gov/hazard/event/west_nile/west_nile.html) The site for 2001 updated West Nile Virus surveillance maps of positive bird, mosquito, equine and human cases.
- [www.epa.gov/pesticides/factsheets/skeeters.htm](http://www.epa.gov/pesticides/factsheets/skeeters.htm) The EPA site with mosquito control guidelines, factsheets on mosquito sprays, etc.
- <http://nptn.orst.edu> and click on “West Nile Virus Resource Guide”. This is the National Pesticide Telecommunications Network (NPTN) with insect repellent information and links to a multitude of other West Nile Virus sites.