



Testing, Treatment, and Prevention -

There are serologic tests available for WNV, EEE and EPM. Early detection is important in the diagnosis and treatment of these diseases. If you notice any of the neurologic symptoms developing in your horse, it is important to contact your veterinarian quickly and get the horse tested.

Unfortunately, treatment for WNV and EEE is usually not successful. There are no specific drugs or protocols for the treatment of these viruses. All that can be done is to offer supportive care for the animal, often involving long hospital stays and great expense on the part of the owner. Around 90% of horses do not survive. EPM on the other hand is treatable with a couple of different products that are anti-protozoans and are available from your veterinarian and various horse-supply companies. The horse must also be provided with supportive care and monitored to help prevent self-injury if severely symptomatic.

Vaccination is the first line of defense against EEE and WNV. Contact your veterinarian to set up a vaccination protocol for your horses. There is unfortunately no vaccine available for EPM, but it is hoped that one can be developed in the future.

Population control of the vectors in each disease, the mosquito and the opossum is key in prevention. Keep your barn and property free of mosquito breeding areas and use appropriate repellents to keep them off of your horse. Keep feed and hay in animal proof areas. Place all feed in sealed containers to help control the opossum population in your area.

The Arkansas Livestock and Poultry Veterinary Diagnostic Lab offers testing for these diseases. Your veterinarian can collect and submit samples to us for screening.

We offer the following tests for these diseases -

West Nile Virus -

Serum ELISA - \$12.00

PCR - \$30.00 (Brain, spinal cord, whole blood)

Eastern Equine Encephalitis (EEE) -

Serum ELISA - \$12.00

Equine Protozoal Myeloencephalitis (EPM) -

PCR - CSF \$81.29 plus \$10.00 send out fee

Western Blot - Serum or CSF \$67.29 plus \$10.00 send out fee.



Equine Neurologic Diseases

West Nile Virus

Equine Protozoal Myeloencephalitis (EPM)

Eastern Equine Encephalitis (EEE)



An overview of signs, symptoms, treatment, and prevention options.

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Symptoms of equine neurologic disease -

The signs and symptoms of a neurologic disease such as WNV, EEE, and EPM are very similar in appearance since all three diseases affect the brain and central nervous system.

- Loss of balance, leaning on objects or walls, horse may press their head against an object.
- Fever
- Seizures
- Loss of appetite
- Difficulty chewing and swallowing.
- Dragging of hind feet.
- Incoordination.
- Circling and aimless wandering.
- Drooping lip or facial twitch.
- Unusual sweating patterns.
- Head tilt or drooping ear.
- Sleepy appearance.
- Erratic behavior.
- Seeming blindness.

Many owners will notice a pattern of these signs as well as other altered behaviors in their horses over a period of time. Prompt veterinary attention is paramount in the successful treatment of these diseases.



WNV and **EEE** are part of a family of viruses known as Alphaviridae. They are both transmitted by mosquitoes and while they can infect humans through the bite of an infected mosquito, they are not transmissible from horse to horse or horse to human. There are vaccines for these two diseases and it is important to maintain a good vaccination schedule with your veterinarian.

There is no specific treatment for WNV or EEE, horses suffering from symptoms can be given supportive care and some may improve or even recover over time. The mortality rate of symptomatic, infected horses is high, usually around 90%, most horses that survive initially are later euthanized because of the prolonged suffering of symptoms.



Prevention of WNV and EEE involves control of the mosquito population and the use of approved repellents on your horses. Remove any items that can harbor standing water that mosquitoes can breed in. Keep water tanks clean and aerate them to discourage the insects from using them to lay eggs in. The foremost line of defense, however, is making sure your horse's vaccinations are up-to-date.

EPM is a neurological disease caused by the protozoan *Sarcocystis neurona*. EPM, like EEE and WNV is not transmissible from horse to horse or horse to human. It is spread by the common opossum in their feces. Horses contract the infection from eating contaminated feed or drinking contaminated water. The organisms move through the digestive tract and into the bloodstream where they are carried to the brain. They can cross the blood/brain barrier and infect the central nervous system. There is no vaccine for EPM at this time, though there are treatment options for horses with active infections. The survival rate for treated horses is much higher than with EEE and WNV. 98% of exposed horses can clear an EPM protozoa infection, while less than 2% succumb to an active infection that causes neurological symptoms. Stress has been found to be a major factor in a horse actually getting an infection. Stress weakens a horse's natural immune defense and makes them more sus-



ceptible.