

Center for Veterinary Care  
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## **Equine Protozoal Myeloencephalitis / EPM**

EPM or Equine protozoal myeloencephalitis was originally identified in the 1960's by Dr. Jim Rooney, although protozoa were first identified in the lesions in 1974. This disease has been considered to be sporadic and rare, but recently, researchers have begun to learn the extent of distribution of this disease. Until recently, we had no idea which species of animal actually spread the disease. However, recent research efforts at the University of Kentucky have implicated the opossum as the definitive host of the EPM organism.

EPM is an infection of the central nervous system of horses. The neurologic signs that it causes are most commonly asymmetric incoordination (ataxia), weakness and spasticity, although they may mimic almost any neurologic condition. Clinical signs among horses with EPM include a wide array of symptoms that may result from primary or secondary problems. Some of the signs cannot be distinguished from other problems, such as lameness. Airway abnormalities, such as laryngeal hemiplegia (paralyzed flaps), dorsal displacement of the soft palate (snoring), or airway noise of undetermined origin may result from protozoa infecting the nerves which innervate the throat. Apparent lameness, particularly atypical lameness or slight gait asymmetry of the rear limbs are commonly caused by EPM. Focal muscle atrophy, or even generalized muscle atrophy or loss of condition may result. Secondary signs also occur with neurologic disease. Upward fixation of the patella (locking up of the stifle) is among the most common findings among horses with neurologic disease. Another common side effect of EPM is back soreness, which can be severe. Even typical racing injuries may ultimately be caused by EPM, because horses which are uncoordinated are much more likely to "take a bad step" in racing or training. Therefore, any horse with these signs should be carefully evaluated for the presence of neurologic disease.

Exposure of horses to EPM occurs at an average rate of about 50%, but approaches 80-90% among some groups of horses. It is impossible to predict which exposed horses will develop clinical symptoms. Some horses with active disease may be able to clear the organism without treatment. Currently, the only approach to control of EPM is early detection of incoordination, gait or other abnormalities, definitive diagnosis of the disease by cerebrospinal fluid (CSF) analysis, and appropriate treatment. The disease probably requires a minimum of two weeks and up to two years to develop from the time of exposure to the development of marked clinical signs. Exposure rates (but not disease rates) for different farms or training facilities may vary from zero to 100% of the horses at a given location. Most horses probably ingest the sporocysts, mount an immune response, and clear the organisms before they reach the central nervous system. Alternatively, they may be persistently infected in the central nervous system, but are able to combat the organism sufficiently to prevent the development of clinical signs. There is no "dormant" stage, and there is no "remission".

The current testing methods are limited in that cerebrospinal fluid (CSF) is required for the diagnosis. Falsely positive or negative tests are unlikely in spinal fluid, but common when only the blood is tested. Therefore, any horses that are considered candidates for EPM should have CSF tested for the presence of antibodies to this parasite.

The most exciting new development in the area of EPM research is the advent of new and different alternatives for treating EPM. The FDA has approved two drugs for treatment- Marquis (Bayer) and Navigator (Idexx).

For more information or to schedule an appointment, please contact Dr. Vin at the Center for Veterinary Care in Millbrook, NY on (845) 677-8800.

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This information is not intended to replace professional veterinary diagnostics and treatment. If you observe anything abnormal in your horse's health, daily routine, or have any concerns, please call Dr. Vin at the Center for Veterinary Care on (845) 677-8800.