



U of M Horse Newsletter

Providing research-based information to Minnesota Horse Owners

Visit our Website at: www.extension.umn.edu/horse for more information and to subscribe to the newsletter.

Volume 3, Issue 1

January 2007



EPM

By: Annette McCoy, DVM, U of M

Equine Protozoal Myeloencephalitis (EPM) is a disease of the central nervous system (brain and/or spinal cord) that is caused by the protozoal organism *Sarcocystis neurona*. The main host for this organism is the opossum. Horses are infected with EPM when they ingest food or water contaminated with infected opossum feces. Keeping grain in covered bins and controlling opossums around your barn are the most practical methods of reducing the risk of infection. Other hosts of *S. neurona* include skunks and domestic cats however, these animals cannot directly transmit the disease to horses. Since *S. neurona* can be located anywhere in the central nervous system, a range of clinical signs may exist. To complicate matters, many of these signs mimic those found in other neurologic disease. Potential clinical signs include: ataxia (incoordination) spasticity (stiff, stilted movements), abnormal gait or lameness; incoordination & weakness which worsens when going up or down slopes or when the head is elevated; muscle atrophy, most noticeable along the topline or in the large muscles of the hindquarters, but can sometimes involve the muscles of the face or front limbs; paralysis of muscles of the eyes, face or mouth,

evident by drooping eyes, ears or lips; difficulty swallowing; seizures or collapse; abnormal sweating; loss of sensation along the face, neck or body; and/or head tilt with poor balance (horses assume a splay-footed stance or lean against stall walls for support). There are three tests currently available to test for EPM. Each of them has pros and cons. **Serum Antibody Test.** This test is run on a sample of blood and detects circulating antibodies to *S. neurona*. If the result comes back negative, the horse does not have the disease. However, if the result comes back positive, it does not mean that the horse is currently infected, only that it has been exposed to *S. neurona* at some point in its life. About 50-60% of the equine population has been exposed to *S. neurona*, but less than 1% actually develop the disease. **Cerebral Spinal Fluid (CSF) Western Blot.** This test is run on CSF obtained from a spinal tap. The test is more invasive than the serum test, but is more accurate at detecting active infection because the fluid should not have antibodies in it unless the organism is actually in the brain or spinal cord. **IgM Capture ELISA.** This recently developed test is run on a blood sample and looks for an immunoglobulin (antibody) specifically found during an active *S. neurona*

infection. This test shows great promise, but has not been widely used yet. It is run only at the University of California-Davis. There are two treatment options for EPM. The traditional treatment protocol is a six-month course of trimethoprim-sulfonamide (an antibiotic) and pyrimethamine (an antiprotozoal agent). However, a newer drug, ponazuril (an antiprotozoal), is the only FDA-approved treatment for EPM, and is labeled for a 28-day course of therapy. In some cases, a second round of ponazuril is necessary. Ponazuril is marketed as an oral paste under the trade name Marquis®. Vitamin E and thiamine (both are thought to protect and heal the nervous system) can also be used as adjunctive therapies for EPM, but do not kill the EPM parasite. About 60-70% of horses with EPM that are treated will improve, and 15-25% will recover completely. A better outcome seems to be associated with starting treatment early, and the most significant improvement is generally seen within the first four weeks. Eighty percent of horses will remain positive on CSF Western Blot tests despite treatment (even if they appear clinically normal), and relapses are seen within two years in about 10-20% of these horses.

Inside This Issue

Equine Protozoal Myeloencephalitis	1
When to Call Your Vet	2
National Animal ID System Update	2
2007 Horse Trail Pass	2

Up Coming Events REGIONAL HORSE OWNER PROGRAMS

February 10th, 2007

St. Paul, MN
College of Vet Medicine

February 17th, 2007

Crookston, MN
UMC Horse Facility

February 24th, 2007

Rochester, MN
Heintz Center

March 10th, 2007

Foley, MN
Foley School

March 24th, 2007

Cloquet, MN
Cloquet Forestry Center

Pre-registration is required for all programs and registration is limited.

On-line registration is available at: www.cvm.umn.edu/outreach. The cost to attend each program is \$35/person.

For more information visit www.extension.umn.edu/horse or contact Kristi at 888-241-0719 with additional questions or to register by mail.



When to Call Your Vet Continued

Problems with the nervous system can arise due to trauma, organ problems or infections. Call your veterinarian immediately if your horse has abnormal behavior, muscle twitching that persists, difficulty walking, head tilt, bite wound plus change in behavior, or seizure activity (abnormal motion followed by dullness). While you wait, put the horse in a stall with minimal objects or in a small area by itself, make sure everyone leaves the stall or area to avoid injury, and decrease stimulation (other horses moving by, noise,

lights). A horse that seems to have problems with the urinary system can have a urinary stone, colic or a severe muscle disorder. Call your veterinarian immediately if your horse is straining to urinate, can't seem to move his/her back end properly, or has brown urine. While you wait, take a heart rate, collect urine if he/she urinates, and don't exercise the horse. Horses may develop breathing problems with pneumonia, or with problems in the head that prevent them from breathing well through the nose. Horses cannot breathe

By Erin Malone, DVM, U of M

through their mouths. They can also develop problems in the head that can lead to severe blood loss. Call your veterinarian immediately if your horse makes noise while breathing at rest (not exercising), flares his/her nostrils while at rest, has rapid breathing after a wound or after an illness, or has bloody nasal discharge. While you wait, minimize exercise and stress. If it could be strangles, try to isolate the horse, their gear and caretakers, take the horse's temperature if it is used to it, and if the barn or horse is hot, put cold water

along the horse's backbone. Due to the environment, horses can injure their eyes relatively easy. Injuries need to be treated aggressively to prevent loss of vision. Call your veterinarian immediately if your horse is squinting, suddenly blind, or there are cuts or tears to the eyelid. While you wait, put your horse in a dark stall. Next month, our last article in the when to call your vet series will be discussed. It will discuss when to call your vet with concerns regarding breeding and foaling.

Update on National Animal ID

By: Krishona Martinson, PhD, U of M

There are two significant updates regarding National Animal Identification System (NAIS) for equine: movement and identification. Reportable movements are a major concern and topic of discussion. It has been recommended that the horse industry continue to rely on the current regulatory mechanisms in place that track movement. These regulations include; brand inspection, Certificate of Veterinary Inspection (CVI), VS-127 Permit, and/or

International CVI. These tracking measures will serve as the starting point for trace back in the event of a disease outbreak. The other change involves equine identification, and standardization of the identification practices currently in the horse industry. It has been recommended that states standardize requirements for CVIs and that, for NAIS compliance, horses should be identified with the ISO/ANSI compatible RFID chip (11784/85, 134.2 kHz),

implanted in the nuchal ligament on the left side, in the middle third of the neck, halfway between the ears and the withers. It was also recommended that official identification (i.e. microchip) be necessary when a horse is transported to any premises where a brand inspection, CVI, VS 127 permit, or International CVI is required. Finally, there are no regulations being developed at this time for the NAIS to be a nationally mandated program. It is currently

proposed that it be implemented on a voluntary basis and not be applied to the horse industry until 2010. These recommendations were made by the Equine Species Working Group (ESWG) which includes 35 representatives of the horse industry and animal health officials. The United State Department of Agriculture now needs to accept, reject or amend the updates. To view the entire report, go to www.usda.gov/nais

Horse Trail Pass New in 2007. The Department of Natural Resources (DNR) will begin administering the new Horse Trail Pass on January 1. Sales of the Horse Trail Pass will generate funds that will assist the DNR in addressing important horse trail needs on state trails and in state parks, state recreational areas and state forests (the pass does not include local or county parks/trails, only state areas). Funds will be used to acquire and develop trails and trail facilities, and to maintain and rehabilitate existing horse trails. Anyone aged 16 and older who is riding, leading or driving a horse on state horse trails needs to have either a signed daily or annual Horse Trail Pass in their possession. An annual Horse Trail Pass is \$20 (\$4 for daily pass). The annual pass is valid for the calendar year of purchase, (or the date of purchase) and ending December 31. Horse Trail Passes are available on-line (http://www.dnr.state.mn.us/horseback_riding/index.html), by phone (1-888-665-4236), or in person at ELS license agents around the State of MN.