

Equine Protozoal Myeloencephalitis (EPM)

Equine Protozoal Myeloencephalitis (EPM) is a master of disguise. This serious disease can be difficult to diagnose because its signs often mimic other health problems in the horse and signs can range from mild to severe.

More than 50% of all horses in the United States may have been exposed to the organism that causes EPM. The causative agent is a protozoal parasite called *Sarcocystis neurona*. The disease is not transmitted from horse to horse. Rather, the protozoa are spread by the definitive host, the opossum, which acquires the organism from cats, raccoons and skunks. The infective stage of the organism (the sporocysts) is passed in the opossum's feces. The horse comes into contact with the infective sporocysts while grazing or eating contaminated feed or drinking water.

Once ingested, the sporocysts migrate from the intestinal tract into the bloodstream and cross the blood/brain barrier. There they begin to attack the horse's **central nervous system**. The onset of the disease may be slow or sudden. If left undiagnosed and untreated, EPM can cause devastating and lasting neurological damage.

SYMPTOMS

The clinical signs of EPM can be quite varied. Clinical signs are usually asymmetrical (not the same on both sides of the horse). Actual signs may depend on the severity and location of the lesions that develop in the brain, brain stem or spinal cord. Signs may include:

- Ataxia (**incoordination**), spasticity (stiff, stilted movements), abnormal gait or lameness
- Incoordination and weakness which worsens when going up or down slopes or when head is elevated
- **Muscle atrophy**, most noticeable along the topline or in the large muscles or 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
- **Head tilt** with poor balance; horse may assume a splay-footed stance or lean against stall walls for support



Several factors may influence the progression of the disease; however these four things appear to be important:

1. The extent of the infection (i.e. the number of organisms ingested)
2. How long the horse harbors the parasite prior to treatment
3. The point(s) in the brain or spinal cord where the organism localizes and damage occurs
4. Stressful events following infection or stressful events while infected

HORSES AT RISK

EPM is considered the number one cause of neurologic problems in horses today. Almost every part of the country has reported cases of EPM. However, the incidence of disease is much lower in the western United States, especially in regions with small opossum populations. However, due to the **transport** of horses and feedstuffs from one part of the country to another, almost all horses are at risk.

Not all horses exposed to the protozoan *Sarcocystis neurona* will develop the disease and show clinical signs of EPM. Some horses seem to mount an effective immune response and are able to combat the disease before it gains a foothold. Other horses, especially those under stress, can succumb rapidly to the debilitating effects of EPM. Still others may harbor the organisms for months or years and then slowly or suddenly develop symptoms.



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Next month we will discuss Diagnosis, Treatment and Prevention of EPM