

EPM

Opossums & Horses don't mix—the basics of EPM

EPM stands for Equine Protozoal Myeloencephalitis. The disease, EPM, is caused by a protozoan (a one-celled animal) named *Sarcocystis neurona*.

Horses are not a natural host for this protozoan but rather are innocent bystanders that sometimes become victims. The North American Opossum (and armadillos and other animals) appear to be the normal host for *S. neurona*.

EPM in the U.S.

Currently, 50-55% of all horses in the United States have been exposed to *Sarcocystis neurona*. But, exposure does NOT equal disease! Exposure can be identified by a blood test for antibodies to *S. neurona*. Opossums, *Sarcocystis*, and horses have been together for a long time. EPM is not a new disease, only a newly recognized disease that can now be diagnosed and confirmed with laboratory tests.

How are horses exposed?

Horses become exposed to *Sarcocystis neurona* by eating the immature forms of the protozoan contained in opossum feces. The protozoa then migrate through a horse's intestines and into the bloodstream.

At this point, horses form antibodies (confirmed by the exposure blood test). Most horses will clear the infection and remain disease free.

Unfortunately, a few horses do not clear the infection and the protozoan crosses into the brain

and spinal cord (central nervous system). If enough *S. neurona* penetrate into the central nervous system, EPM disease occurs.

Clinical Signs of EPM

The symptoms of EPM are highly variable and depend on the number or protozoa in the central nervous system and where they localize. From the time they enter the central nervous system until outward clinical signs develop can range from a minimum of two weeks or as long as two years.

There is a long list (too long to mention here) of possible clinical signs of EPM. The symptoms may be mild or very severe. Generally, any neurologic sign

could result from EPM but the most common is incoordination and ataxia (stumbling) on one side of the body. The neurologic signs become progressively worse with time. The key to remember is that this is a **progressive** neurologic disease!!

Diagnosis of EPM

At the present time there is only one definitive method for diagnosing EPM. This requires a spinal tap to collect cerebrospinal fluid (CSF) from the horse. The fluid is then tested for *S. neurona* DNA or antibodies. False negatives are possible but false positives are rare.

You need to test CSF for a diagnosis of EPM; a positive BLOOD test only indicates exposure to *S. neurona*, NOT diagnosis of EPM disease!!!!

EPM Treatment

Recently, new treatment options are available which are more affordable and offer shorter treatment than the medications

used a few years ago. The response to treatment is variable, depending on the extent/site of spinal cord damage.

Prevention tips

10% of all neurologic problems in horses are currently diagnosed as EPM. Only a small number of horses (approximately 14 horses a year out of every 10,000 horses) will develop EPM.

Thus, the risk of your horse having EPM is small, but it is still there. *Reducing exposure to opossum feces will lessen the risk.* Pelleted or steamed grains kills the protozoa in the heat treatment process. Avoid open food (especially cat food—opossums love cat food!), water, or garbage containers in your barn that may attract opossums. Wire mesh fences may keep opossums out of your horse pastures or hay fields, but these fences are not generally practical to do.

Another main concern with the vaccine is that it will make it impossible to diagnose EPM in a vaccinated horse because the vaccine will automatically give a positive spinal tap result.

There is not any method to currently differentiate between positive vaccination versus positive for disease. Also, the vaccine will not stop a current infection or prevent clinical signs in a horse already harboring *S. neurona* in its central nervous system.

Thus, if your horse is vaccinated for EPM, and then shows symptoms of EPM (remember it can take up to two years to show up), the spinal tap test to diagnose the disease becomes worthless. These are things to consider prior to jumping in and vaccinating your horse. You need to weigh the pros and cons.

