Potomac Horse Fever:

**How is it spread?**

How can you protect your horse?

Potomac Horse Fever is caused by an organism known as Neorickettsia risticii (formerly called *Ehrlichia risticii*). This organism is similar in many ways to the organisms that cause Lyme Disease and Rocky Mountain Fever. In lower Michigan, we see many cases of Potomac Horse Fever each summer. It is a serious disease that results in fever and severe diarrhea. Some horses will also develop laminitis (serious inflammation of the hooves, also known as founder) as a result of the disease. Although it is treatable in the early stages with the antibiotic oxytetracycline, it often goes unrecognized until it is difficult to treat. Some affected horses will die, and often the ones that live have difficult recoveries. In vaccinated horses, PHF can still cause disease but it is usually more mild and responds well to treatment.

In the past few years, researchers at the University of California-Davis Veterinary school have discovered a lot about how this disease is transmitted. As a horse owner, understanding the life cycle of the disease will help you protect your horse from it.

The PHF organism lives inside tiny trematodes (fluke parasites) that infect snails. When these trematodes reproduce, they hatch cercaria, tiny swimming larvae, that leave the snails and go into the water environment. These larvae carry the PHF organism inside them.

These PHF-carrying cercaria are eaten by other larvae—The water-dwelling larvae of the mayfly and caddis fly. When the larvae hatch into flying insects, they take the Cercaria, and the Potomac Horse Fever, with them.

These flies do not generally live very long. Their life span is only a few days. As they die, they may contaminate pasture, feed, hay, bedding and other surfaces that your horse has contact with.

When your horse accidently ingests one of these flies, the Potomac Horse Fever organism comes with it. In the horses intestines, the PHF organisms are released from the cercaria and begin to multiply, causing inflammation of the gut. This inflammation results in the fever, diarrhea, and toxemia (release of toxins from infection into the bloodstream) that we recognize as Potomac Horse Fever.

How does knowing this help you as a horse owner? Well, first of all, we know that the PHF organism is almost always going to be found near water. Creating boundaries of trees, hedges, and other vegetation between your property and water sources can help insure that the insects do not travel to your property.
Also, we know that certain flies can carry the disease. These flies are attracted to light during the night hours. So, avoiding leaving on lights in the barn that will attract the flies can help lower your horse’s risk of coming in contact with the disease. Whenever possible, keep feed and hay stored away from insects.

![Flies swarming around Stable light bulb](image)

Finally, since the disease carrying organisms are dependent on water, avoid allowing standing water on your horse properties. Keep water buckets and troughs cleaned out regularly. Establish grading or drainage so that standing water does not develop around pasture areas. This will have the additional benefit of reducing the mosquito population. Mosquitoes carry other diseases such as West Nile, so you don’t want them around any way.

![Foot of a horse who developed laminitis from PHF](image)

There is a vaccine for Potomac Horse Fever, and we recommend it in the spring for all horses because the disease is so prevalent in our area. However, the vaccine produces limited immunity (resistance to infection). Usually the immunity is short-lived, about 3 months. For this reason we routinely recommend a booster in July to keep the horse fully protected. While vaccinated horses do occasionally get PHF, they usually get only a mild illness and recover.

![Horse On IV fluids](image)

Watch your horse closely during the summer months, especially if there is a noticeable rise in the number of insects around. Potomac Horse Fever is what we call biphasic, meaning it has two separate phases. The horse will have a fever for 1-2 days, then his temperature will return to normal. As the fever fades, the diarrhea begins. Usually there is a second high fever when the diarrhea develops. The antibiotic is most effective if given before the diarrhea begins. Unfortunately, a lot of horse owners do not realize the horse is sick until the diarrhea starts. At that point antibiotic treatment is less effective. By paying close attention, you will identify it when it is still very treatable. Every barn should have a digital thermometer. If your horse does not seem “right” during the summer months, check his temperature and call your vet if it is above 102.5 F.

Treatment of PHF involves intra-venous (IV) antibiotics, Banamine to manage the fever and toxemia, and often large volumes of IV fluids. Keeping the horse from dehydrating often requires a lot of fluids because the diarrhea is profuse. Some horses will develop either severe anemia (low red blood cells) or very low white blood cell counts. In very severe cases, plasma transfusions may be necessary. If laminitis develops, more intensive care is required to help the horse recover. Horses often lose several hundred pounds during the course of treatment. The exception is vaccinated horses, who usually get only a mild fever and mild diarrhea.