

Potomac Horse Fever

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In July of 2007, our clinic treated several cases of Potomac Horse Fever (PHF) that were referred to us from around Iowa. PHF is a serious disease that presents with high fevers, profuse diarrhea, and acute laminitis (founder) in horses of all ages.

PHF was first recognized in 1979 in this country when a group of horses from the Potomac River area in Maryland contracted severe diarrhea. PHF is caused by the bacteria *Neorickettsia Risticii* (previously known as *Ehrlichia Risticii*) that is carried by aquatic insects near rivers, streams, or ponds. With recent advances in diagnostic DNA research, and the diligent work of veterinarian researchers at UC Davis, University of Minnesota, Iowa State and Ohio State University, more is known about the transmission and life cycle of this infectious bacterium.

The life cycle is quite complicated and involves flatworms (flukes), freshwater snails, aquatic insects, and birds. There is an informative article written by Lee Farren on PHF and its life cycle in the June 2007 *Equus Magazine* (page 50-58). Minnesota's College of Veterinary Medicine also has a useful website link on PHF at www.cvm.umn.edu/newsandevents/facts/Potomac_Horse_Fever.html. It is important to understand the life cycle of the organism in order to know how it infects horses and how to prevent infections.

One confirmed route of transmission of PHF to horses was determined after the investigation of Dr. Julia Wilson who traced back several cases of the disease to a horse show in Minnesota in July 2005. The show facility was invaded by a swarm of infected mayflies. The dead mayflies contaminated the feed, forage and bedding of the horses. Some horses ingested the aquatic insects infected with *Neorickettsia Risticii*. The bacteria multiply in the horse's digestive tract, which causes inflammation and thus diarrhea. Horses tend to have a high fever (104 °F), poor appetite, and depression. Toxins from the inflamed intestinal tract may absorb into the blood stream, causing acute laminitis in all four feet and can trigger abortion in pregnant mares.

The DNA of the organism can be detected in the blood or feces of affected horses by using polymerase chain reaction (PCR) testing. It is preferred that the



Although a mayfly hatch/swarm may be a welcome event for many fishermen, such did not prove to be the case during a 2005 outbreak of PHF in Minnesota. Dr. Julia Wilson traced several cases of that outbreak back to a horse show where dead mayflies contaminated feed, forage, and bedding.

samples be taken before antibiotics are administered. Horses that are suffering from PHF can be treated with intravenous (IV) oxytetracycline, anti-inflammatory drugs (banamine and DMSO), and supportive IV fluid therapy. Horses with PHF must be treated early and aggressively or they may die from this disease.

There is also a vaccine for PHF. Unfortunately there are several strains of the bacteria, thus the vaccine is not 100% effective at preventing the disease. Studies have shown that the vaccine does decrease the severity of the clinical signs in horses that become sick.

If you live in an area near the water, or will be hauling horses to areas near the water, please protect your animals against this severe disease. To reduce the risk of Potomac Horse Fever you can follow these guidelines:

1. Vaccinate your animals against PHF.
2. Reduce the horse's exposure to night lights that may attract aquatic insects.
3. Keep hay and feed inside and covered

thereby reducing contamination from infected insects.

4. As difficult as it may be, it is important to prevent horses from drinking from natural water sources, such as ponds or streams that may be infected with the life stages of *Neorickettsia risticii*.

These safety measures are particularly important during the late summer months of July through September. If your horse shows any signs of a high fever and diarrhea, please contact your veterinarian immediately so that the proper diagnostics and treatment can be performed.

Dr. Woodford graduated Summa Cum Laude from Creighton University in Omaha, NE in 1994 with a Bachelors of Science Degree in Chemistry. She then received a Master of Science in Organic Chemistry from the University of Wisconsin-Madison in 1996. In 2002, Dr. Woodford graduated with honors from Iowa State University and received her Doctorate in Veterinary Medicine.

With an interest in lameness and performance horses, Dr. Woodford pursued academic studies in alternative therapies. In 2006, Dr. Woodford became certified in Animal Chiropractic by the American Veterinary Chiropractic Association.

She just completed the Equine Veterinary Acupuncture course at the Chi Institute in Florida.