



**Dr. Matt Schaefer**  
**Dairyland Veterinary Service**  
**[www.dairylandvet.net](http://www.dairylandvet.net)**

## **Potomac Horse Fever**

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**It is early this year and I have already treated 2 horses for Potomac Horse Fever. Here is a quick review of the disease.**

**What is it and what do we know about the organism?** Potomac fever is caused by *Neorickettsia risticii*, an organism member of the *Erlischiaea* family. According to the isolates obtained from clinical cases, there is diversity in the organism and each isolate has a different pattern of antigenic proteins. Therefore, Potomac horse fever is caused by more than one strain of *Neorickettsia risticii*. Current vaccines are only made using one strain, which likely explains its lack of efficacy in some cases. Cases of Potomac horse fever have a seasonal presentation with the highest number of cases with clinical signs in July, August, and September.

**What is the distribution in the country?** Potomac horse fever is found throughout North America and has been reported in most regions of the United States and Canada. Studies have shown that 16-33 percent of horses with no history of having had the disease have evidence of having been exposed to *N. risticii*.

**How does a horse get *N. risticii*?** Several studies have been conducted to determine the route of infection and have revealed that a parasite, living in freshwater snails and aquatic insects, is a reservoir for *N. risticii*. The parasites and *N. risticii* have been found in adult and immature forms of aquatic insects, such as caddisflies, mayflies, damselflies, dragonflies, and stoneflies. Therefore, the seasonality of PHF is likely related to the seasonality of the flying insect.

**Can it be transmitted from horse to horse?** Direct transmission from horse to horse does not occur.

**What signs should a horse with PHF show?** The typical clinical signs observed in horses with PHF include: fever, anorexia (not eating), colic, depression, ileus (nonmotile gastrointestinal tract — the horse does not defecate), diarrhea, and laminitis. Clinical signs and severity vary, but common to all cases PHF is the manifestation of colitis (inflammation of the bowel). However, some horses with PHF can pass normal looking feces without showing any signs of colitis.

**The first prominent sign of PHF often observed by owners is a decrease in feed intake.** In fact, some horses may not initially show any other clinical signs. Usually this anorexia is followed by dehydration and toxemia characterized by very bright looking mucous and a bright red/purple line on the mucosal surface above the teeth (toxic line). Many horses, upon becoming infected with PHF will develop a fever with an initial rise in temperature of approximately 103-106° F, but the presence of this fever may go unnoticed as this initial fever resolves within hours. However, it is often followed by 3-7 days of persistent fever, along with other clinical signs. Laminitis often develops in cases of severe endotoxemia, but in some occasions it can be the only sign. Laminitis in most cases results in euthanasia of the horse within days of the onset. *N. risticii* can cause abortions, and it is related to placentitis and retained placenta in most cases. The aborted fetus will show signs of the infections as well.

**Is there a test to diagnose PHF?** Although the presentation, blood analysis and response to treatment can be suggestive of PHF, a blood test called polymerase chain reaction (PCR) and /or isolation of the organism in cultures is necessary to accurately diagnose the disease.

**Is there a way to treat PHF?** The drug of choice to treat *N. risticii* infection in horses is oxytetracycline. Oxytetracycline is able to interfere with the control mechanism of *N. risticii* and allows the macrophage to eliminate the organism. Oxytretracycline should be administered by a licensed veterinarian once a day for 3 to 5 days, and it is most effective when given in the early stage of the disease. Because clinical signs of PHF mimic other highly contagious diseases, such as salmonellosis, it is recommended to isolate affected horses.

**What can I do to control or prevent exposure?** Until modes of transmission are clearly known, and all sources of the infection (insects, etc.) are identified, attempts to prevent exposure may not be successful. Turning off lights at night in the stable and barn areas will decrease the amount of insects attracted to the areas and contamination of feed and water.

**Should I vaccinate?** Several vaccines are commercially available in the U.S., but efficacy is questionable. Research has shown that once an horse develops an infection with *N. risticii*, the horse can develop an immunity to that particular strain for as long as 20 months. Vaccination may decrease clinical signs but it will not prevent infection and illness.

Source: College of Veterinary Medicine Michigan State University, Dr. Santiago Garcia

**\*Vaccination is not optimal, but we may want to consider vaccination as it does lessen the severity of the disease and at best it will prevent some cases. If you want to do this, it should be done starting immediately since transmission will reach its peak soon. The vaccine has a very limited range of protection which peaks according to some sources 2 months after inoculation. By 3 months the efficacy (protection) can be reduced by 70% By inoculating the yearly booster now, we can get peak protection during the time of year when we see the most cases—late summer, early fall. Also, consider boosting all respiratory diseases at this time such as influenza, rhino, strangles especially in trail, show and performance horses.**

A note on vaccinations.....

Unless your horse resides at a large facility in which veterinary call fees can be reduced by the number of clients, I generally try to get yearly vaccinations done within 2 visits / year. This spring we very successfully used a combination vaccine that took care of a lot of antigens (diseases) with 1 syringe. However, starting now, a lot will be due for rabies, Potomac horse fever (if you choose it) and possibly an encephalitis booster.

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