

Equine Piroplasmosis: An emerging threat to Florida horses¹

Sally DeNotta and Amanda House²

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Every year in the United States, numerous horses are found to be positive for equine piroplasmosis (EP). Most cases occur in Florida and the Southern United States, and most transmission occurs through needle sharing and contaminated blood products. EP is considered a foreign animal disease in the U.S. and suspect or confirmed cases of EP require notification of State and Federal animal health officials. All horses imported to the United States must be tested for EP prior to release from quarantine. The recent rise in EP cases in the U.S. underscores the importance of early recognition and prevention. This article reviews the clinical signs, transmission, and prevention strategies for EP in horses.

What is Piroplasmosis?

Piroplasmosis is caused by the protozoan parasites *Babesia caballi* and *Theileria equi*. It also can affect donkeys, mules, and zebras; but clinical disease in those equids is rare. The disease is naturally transmitted by ticks and other biting insects; however, recent outbreaks in the United States have been linked to shared needles and the illegal practice of blood doping on unsanctioned horse racing venues. Equids infected with *T. equi* or *B. caballi* become life-long carriers of the organism and may present with or without clinical signs. Carrier horses are also capable of transmitting the disease to ticks—vectors that can transmit it to other horses. The disease is considered endemic in Africa, Central and South America, Asia, the Middle East, the Caribbean, and the Mediterranean. The U.S. has not been considered an endemic region. When infection occurs, *T. equi* tends to be the most common agent, rather than *B. caballi*. However, infection with both parasites can occur simultaneously.

Once horses become infected with the parasite, it usually takes between 5 and 30 days for any signs of the disease to appear. Generally, affected horses display nonspecific signs that can look similar to other diseases, such as fever, depression, anorexia, pale or yellow gums, and swelling of the limbs. Reddish-brown or discolored urine may also be observed. Laboratory abnormalities typically include anemia (low red blood cell

count) and low platelet counts. Some horses will develop no clinical signs of illness at all.

Risk Factors for Infection

- Horses residing in EP endemic regions with potential tick exposure.
- Sharing or re-use of blood-contaminated needles, syringes, intravenous administration sets, or multi-dose drug products.
- Re-use of blood-contaminated equipment (dental, tattoo, surgical, etc.).
- Blood transfusion from a donor horse of non-negative or unknown EP status.
- Use of illegally imported or poorly regulated biologics and blood products.

Diagnosis

Several laboratory tests are available for diagnosis of EP. Occasionally, the parasite can be seen on microscopic examination of a blood smear. The most common tests are blood tests that look at antibodies to the organism. The U.S. Department of Agriculture (USDA) standard test is the cELISA (competitive enzyme-linked immunosorbent assay). Specific laboratories (the National Veterinary Services Laboratories and Texas Veterinary Diagnostic Services Laboratories) have been identified to run the tests and report the results. The Bronson Animal Disease Diagnostic Laboratory (BADDL, formerly Kissimmee Animal Disease Diagnostic Laboratory) in Florida is also approved by the USDA for equine piroplasmosis testing. BADDL can test blood samples for interstate and intrastate purposes, but the National Veterinary Services Laboratories is still testing all international transport samples.

Management of Positive Horses

Horses that test positive for equine piroplasmosis MUST be reported to state animal health officials and immediately quarantined. Local veterinarians work with state and federal veterinarians to ensure that quarantine guidelines are being followed and are in place. Equids found positive for EP in the United States must be placed under state quarantine and may enroll in the USDA-APHIS-approved EP treatment program, remain

under life-time quarantine, or be euthanized. The USDA-APHIS-approved EP treatment program uses a high-dose imidocarb dipropionate (and anti-protozoal medication) protocol to attempt permanent organism clearance from the animal. Success rates for the treatment protocol have been high, but some cases may require additional treatment or may not respond to treatment at all.

Prevention is Key

Prevention is crucial for stopping the spread of EP. There is no approved vaccine for EP in the U.S. Most cases of EP in the US are the results of needle sharing and contaminated blood products, all of which are totally preventable. To avoid this, do not engage in any practice that could transfer even a small amount of blood from one horse to another. All dental, surgical, and tattoo equipment must be thoroughly disinfected between horses. A new sterile needle and syringe should be used for each injection, whether into a muscle or a vein.

Additionally, a previously used needle should never be inserted into a drug or vaccine multidose vial—use a clean one each time. Work with your veterinarian to ensure that all equipment is thoroughly cleaned and disinfected between horses. If you notice that your horse has a fever, lethargy, reduced appetite, or any of the aforementioned clinical signs, contact your veterinarian for an evaluation. EP is still a very uncommon disease in the U.S., but it is critical to be vigilant and follow preventative measures to protect our horses.

Additional Resources:

Equine Piroplasmiasis. American Association of Equine Practitioners (AAEP) Disease Guidelines. 2022. www.aaep.org

USDA-APHIS Equine Piroplasmiasis: <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/equine/ep/equine-piroplasmiasis>

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² Sally DeNotta, clinical associate professor, UF College of Veterinary Medicine, Department of Large Animal Clinical Sciences, Gainesville, FL; Amanda House, associate dean for academic and student affairs and professor; former equine Extension specialist; College of Veterinary Medicine, Large Animal Clinical Sciences, UF/IFAS Extension, Gainesville, FL; UF/IFAS Extension, Gainesville, FL 32611.

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