



## Equine Piroplasmosis (EP)

**Disease Name:** Equine Piroplasmosis, EP

**Disease Type:** Protozoal, Tick-borne, Blood-borne

**Transmission:** *Babesia caballi* and *Theileria equi*, the pathogens responsible for Equine Piroplasmosis, are blood-borne protozoa that are carried and transmitted by ticks. The disease can also be spread via iatrogenic transmission (human caused through medical procedures) - via medical equipment such as needles, syringes, IV tubing, or other equipment contaminated with blood or through transfusion of blood or blood products from an infected horse. Transmission from mare to foal in utero has also been documented although it is not common.

**Frequency:** Low. EP is a foreign animal disease in the United States and is reportable to state and federal animal health officials.

**Incubation period:** 7-22 days

**Carrier status:** Horses that survive the initial phase of the disease become long-term carriers.

**Shedding period:** Infected horses do not shed the protozoa but do act as a source of transmission by ticks or through equipment contaminated with an infected horse's blood.

**Latency:** Infected horses can act as a source of protozoa for tick vectors but are not infectious to other horses via direct contact.

**Severity:** High. Mortality rate for horses infected with EP has been reported as high as 50%. Some horses diagnosed with EP are euthanized either due to severity of clinical signs or as part of a regulatory response.

### Clinical signs and symptoms:

- Weakness
- Lethargy
- Lack of appetite
- Fever
- Anemia
- Jaundice (yellowing of the mucous membranes)
- Swollen abdomen
- Labored breathing
- Constipation
- Colic
- Hemoglobinuria (red urine)

**Diagnoses:** Diagnosis is made by measuring antibody titers to the organism in serum (a component of whole blood), using an ELISA (enzyme-linked immunosorbent assay), CFT (complement fixation test), or



IFA (immunofluorescent assay). The parasite can also be detected by microscopic examination of a blood smear in horses showing clinical signs. Polymerase chain reaction (PCR) testing can additionally be used to identify the DNA of EP organisms in whole blood samples if the organism is present at high enough levels.

**Treatment:** All EP-infected horses are managed under official state quarantine. Treatment for EP requires enrollment in the USDA-APHIS EP treatment program in which a high-dose imidocarb dipropionate protocol is used to achieve permanent clearance of the organism from the horse. Successfully treated and cleared horses are eligible for quarantine release after return to negative antibody status on all diagnostic tests. The time to reach negative antibody status varies and can take from several months to 2 years after completion of successful treatment.

**Prognosis:** Poor, unless treated. Mortality rate has been reported up to 50%. Horses confirmed positive for EP must be quarantined and can be enrolled in the USDA-APHIS EP treatment program or may be exported or euthanized.

**Prevention:** Prevent the transfer of blood between horses. Never share IV tubing, needles, syringes, or medical equipment contaminated with blood between horses. Extreme caution should be taken with blood transfusions and any horse serving as a blood source for transfusion should be tested negative for blood-borne diseases like EP and EIA (Equine Infectious Anemia). Additionally, EP is transmitted by ticks that have fed on an infected horse. Reduce the risk of exposure to ticks by keeping pastures mowed, removing brush and weeds, and using insecticides such as natural and synthetic pyrethrins.

**Biosecurity:** Horses confirmed positive for EP must be quarantined and can be enrolled in the USDA-APHIS EP treatment program or may be exported or euthanized. Check horses for ticks regularly. Never share IV tubing, needles, syringes, or medical equipment contaminated with blood between horses. Use only U.S.-licensed biologics and plasma products on horses. Horses that travel out of the U.S. to EP-endemic regions are at risk of contracting EP from the native tick populations in those countries.