

# Equine Infectious Anemia

## The Disease

Equine Infectious Anemia (EIA), also known as “Swamp Fever”, is a viral disease of all equidae (horses, donkeys, mules and zebras). The virus belongs to the family that includes the human immunodeficiency virus (HIV), and other animal immunodeficiency viruses. All equids are susceptible to EIA. The virus is not transmissible to humans.

The virus persists in the horse’s white blood cells, and in the plasma (non-cellular portion of the blood) during febrile episodes. The amount of virus in the infected animal’s blood varies. Stress due to racing, heavy exercise, transport, or illness due to other causes may elevate the amount of virus in the blood.

This virus does not persist in soil or water. The virus is viable (infective) for up to 96 hours on contaminated needles. The virus stays viable in the mouthparts of a biting fly for less than four hours. Thus, horses in close contact with an infected horse are at risk of infection via fly bite.

## Transmission

EIA is spread either via biting flies or via humans. Natural transmission occurs when a deer or horse fly bites and consumes a blood meal from an infected horse and transfers the virus via its’ mouthparts to another horse. Additionally, pregnant mares may pass the virus to the foal in utero or through the milk. Stallions can infect mares at breeding.

People can introduce virus to a naïve horse through the use of infected blood or blood products, or through the use of blood contaminated equipment such as needles, syringes, surgical instruments, dental equipment, tattooing equipment, or any other equipment that may have come in contact with infected blood.

**Never** reuse needles, syringes, or surgical equipment without proper sterilization, which requires use of an autoclave and specialized disinfectants. Consult a veterinarian about proper sterilization techniques.

## Prevalence of EIA

Typically, California detects one to two EIA-positive horses per year. However, the cluster of cases between 2013 and 2015 were associated with racing Quarter Horses. Ten of these horses were also found to be positive for infection with *Theileria equi*, the causative agent of Equine Piroplasmiasis.

Year	# EIA Cases in CA
2012	2
2013	8
2014	27
2015	3
2016	0
2017	1
2018	0

## Clinical Signs

Clinical signs can vary widely. Most infected horses are asymptomatic, showing no signs of disease. Acutely infected animals may develop a fever, go off feed, or die suddenly. A chronically infected equine may develop non-specific signs such as weight loss, weakness, anemia, and swelling of the legs, chest, and abdomen.

## Diagnosis

A serologic (blood) test confirms the diagnosis of EIA. The two most commonly used serologic tests are the agar gel immunodiffusion (AGID), commonly known as the “Coggins” test, and the enzyme-link immunosorbent assay (ELISA). A positive test indicates the presence of EIA specific antibodies. The ELISA test can detect antibodies earlier than the Coggins test. As the ELISA test may produce false positive results, the confirmatory test for EIA is the AGID test.

Positive EIA tests are reported, by the laboratory, to local state or federal animal health officials within two days of discovery as EIA is a regulated disease in the U.S. In California, a California Department of Food and Agriculture (CDFFA) Animal Health Branch (AHB) veterinarian will locate the positive reactor animal, quarantine the horse, and obtain a blood sample for confirmatory testing.

If there is a positive horse at a facility, a regulatory veterinarian will perform an investigation to identify exposed horses which includes:

- Any horse that resides with or near positive horses.
- Any horses that may have shared equipment such as needles, syringes, dental equipment, tattooing, or surgical equipment with a positive horse.
- Nursing offspring of the positive horse or exposed horse.

All horses classified as exposed are placed under quarantine and tested for EIA. To identify recently infected horses incubating the disease, all exposed horses are retested 45-60 days after the removal of the EIA positive horse from the premises. Exposed horses are placed under quarantine until the retest confirms negative EIA status of the horse.

### **Treatment and Management of Positive Horse**

There is no known treatment. Infected horses become lifelong carriers and pose a risk of infection to other horses. As such, the management options for an EIA positive horse are:

- Euthanasia, or
- Lifetime quarantine with permanent isolation at a minimum of 200 yards from all other horses. No movement is permitted, unless under a special movement permit to a research facility. Positive horses must be permanently identified by microchip.

### **Prevention**

Prevention is key on stopping the spread of EIA. There is no approved vaccine for EIA in the U.S. Below are some ways to protect horses from contracting the EIA virus:

- Use a sterile needle and syringe for **all** injections or treatments.
- Disinfect dental, tattoo, surgical equipment, lip chains, and bits thoroughly between horses. Remove all debris and blood with soap and water before disinfection.
- Only administer commercially licensed blood or blood products.
- Keep open wounds clean and covered, if possible.
- Use a sterile needle each time when puncturing a multi-dose medication bottle.
- Consult a veterinarian to demonstrate how to use a sterile technique when drawing up medications.

- Require proof of a recent negative Coggins test at time of purchase or for new horses entering the premises.
- Only participate in races or events that require evidence of a negative Coggins test for every horse entering the racetrack to prevent disease entry.
- Separate horses with fevers, reduced feed intake, and/or lethargy from your other horses and contact your veterinarian.
- Practice good fly control by regular mucking of stalls, proper disposal of manure away from horse stabling areas, and use of fly sprays or natural predators to minimize fly presence.

### **Disinfection**

This virus is readily destroyed by most common disinfectants such as bleach or alcohol. Since alcohol and bleach-based disinfectants are inactivated by organic matter, such as manure or soil, surfaces must first be cleaned thoroughly with soap and water before disinfectants are applied. Be sure to follow the manufacturers' recommendations and the label instructions for all disinfectants.

#### **Reportable Disease Alert**

Equine Infectious Anemia is a reportable disease (pursuant to §9101 of the California FAC, Title 3 California CR §797 and Title 9 CFR §161.4(f)) and must be reported within two days of discovery. If your horse is exhibiting clinical signs consistent with EIA or has been exposed please contact your private practitioner or CDFA officials.

[Reportable Disease List](#)

#### **Animal Health and Food Safety Services Animal Health Branch**

Headquarters - (916) 900-5002  
Redding District - (530) 225-2140  
Modesto District - (209) 491-9350  
Tulare District - (559) 685-3500  
Ontario District - (909) 947-4462  
**USDA-APHIS** (916) 854-3950 or (877) 741-3690

For more information, please go to the following:

[Equine Infectious Anemia Information Page](https://www.cdfa.ca.gov/ahfss/Animal_Health/Equine_InfectiousAnemia.html)  
[https://www.cdfa.ca.gov/ahfss/Animal\\_Health/Equine\\_InfectiousAnemia.html](https://www.cdfa.ca.gov/ahfss/Animal_Health/Equine_InfectiousAnemia.html)