



EQUINE INFECTIOUS ANEMIA

Definition	Diagnostic Sampling, Testing and Handling	Biosecurity Issues for Receiving Animals
Clinical Signs	Post-mortem	Disinfection
Incubation Period	Specific Control Measures	Zoonotic Potential
Risk Factors		
Transmission		

Definition	Equine Infectious Anemia (EIA) is caused by equine infectious anemia virus (EIAV), a lentivirus in the family Retroviridae. EIA has been found nearly worldwide. Countries free of EIA include Iceland and Japan.
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.
Incubation Period	The incubation period is a week to 45 days or longer. Some horses remain asymptomatic until they are stressed or may never show outward clinical signs.
Risk Factors	Sharing of blood-contaminated equipment (dental, tattoo, surgical) Sharing of blood-contaminated needles, syringes, IV sets Blood transfusion from a donor horse of unknown EIA status Horses residing in EIA endemic regions without vector control
Transmission	Once acquired, EIA is a chronic, life-long infection with no known cure and no vaccine for prevention. Chronically infected equids serve as reservoirs of the virus for potential transmission to other equids. • Vector Transmission (most common). • Tabanidae family of flies are the most effective vectors, especially horse flies and deer flies. • Virus is transmitted mechanically on the mouthparts of biting insects. Virus persists in the blood leukocytes of the horse for life and in the plasma during the febrile episodes. • Iatrogenic transmission can occur and can be an important means of spread. This virus can also be transmitted in blood transfusions or on contaminated needles/syringes/IV sets, surgical instruments, and dental equipment. It is reported to persist for up to 96 hours on hypodermic needles. • EIA virus may also be passed from mare to her foal in utero. Possible transmission through milk has been reported in some nursing foals.



Diagnostic Sampling, Testing and Handling

- Virus can be found in semen. Although venereal transmission does not seem to be a major route of spread, one stallion appears to have transmitted the virus to a mare with a vaginal tear during breeding.
- The possibility of aerosol transmission by infectious material during close contact was raised during the 2006 outbreak in Ireland.
- Equine infectious anemia is often confirmed by serology. The two most commonly used serologic tests are the agar gel immunodiffusion (AGID), commonly known as the “Coggin’s” test, and the enzyme-link immunosorbent assay (ELISA).
- Horses are usually seronegative on the AGID test during the first 2-3 weeks after infection, and in rare cases they may not develop antibodies until 60 days post-exposure or longer. Experimental evidence suggest that antibody production may be delayed in donkeys and mules.
- A positive test indicates the presence of EIA-specific antibodies. The ELISA test can detect antibodies earlier than the AGID test. As the ELISA test may produce false positive results, the confirmatory test for EIA is the AGID test.
- Testing for Equine Infectious Anemia must be performed at a USDA-approved laboratory. For a listing of approved laboratories visit https://www.aphis.usda.gov/animal_health/lab_info_services/downloads/ApprovedLabs_EIA.pdf
- Virus isolation is not required for diagnosis, but it can be done. Virus isolation is performed in horse leukocyte cultures.
- Positive EIA tests are reported by the laboratory to local state or federal animal health officials within 24 hours of the positive test result, as EIA is a regulated disease in the U.S. A state or federal animal health official will locate the positive reactor animal, quarantine the horse, and obtain a serum sample for confirmatory testing. Reporting of confirmed EIA cases in the U.S. can be found at the following link: https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/horse-disease-information/equine-infectious-anemia/ct_equine_infectious_anemia
- 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.
 - Horses epidemiologically-linked to the positive horse that may be located at another facility.
- 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 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.



Post-mortem	The spleen, liver and abdominal lymph nodes may be enlarged, and the mucous membranes can be pale. In chronic cases, emaciation may also be noted. Edema is often found in the limbs and along the ventral abdominal wall. Petechiae may be observed on internal organs, including the spleen and kidney. Mucosal and visceral hemorrhages and blood vessel thrombosis have also been reported. Chronically infected horses that die between clinical episodes usually have no gross lesions, but some animals may have proliferative glomerulonephritis or ocular lesions.
Specific Control Measures	Biosecurity Guidelines • There is no known treatment. Infected horses become lifelong carriers and pose a risk of infection to other horses. As such management options for an EIA positive horse are euthanasia or lifetime quarantine with permanent isolation at least 200 yards away from non-infected horses. • Prevention is key to 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, syringe, and IV set 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. See “Disinfection” section below. • Only administer commercially licensed blood or blood products. • Keep open wounds clean and covered, if possible. • Use a sterile needle and syringe each time when puncturing a multi-dose medication bottle. • Use a sterile technique when drawing up and administering medications. • 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.
Biosecurity Issues for Receiving Animals	• Require proof of a recent negative EIA test at time of purchase or for new horses entering the premises. • Separate horses with fevers, reduced feed intake, and/or lethargy from other horses
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. Pressure washing of



AAEP Infectious Disease Guidelines: Equine Infectious Anemia

Zoonotic Potential

contaminated surfaces should be avoided as aerosolization of the virus from blood and bodily fluids on the surfaces could occur.

There is no evidence that equine infectious anemia is a zoonotic risk.

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