



### Eastern Equine Encephalitis (EEE)

**Disease Name:** Eastern Equine Encephalitis, Eastern Equine Encephalomyelitis or EEE

**Disease Type:** Viral

**Transmission:** Vector borne. This virus is transmitted by mosquitoes or other biting insects. Birds act as reservoirs for the virus; mosquitoes and other biting insects then carry the pathogen from infected birds and transmit it to horses when they bite. A horse affected with EEE is not contagious and poses no risk to other horses, humans or birds.

**Frequency:** Low

**Incubation period:** 3-7 days

**Carrier status:** Infected horses cannot transmit the disease to other horses. The virus can only be transmitted to a horse via an insect vector.

**Shedding period:** Infected horses do not shed the virus nor do they act as a source of virus to insect vectors.

**Latency:** Infected horses pose no risk of infection to other horses.

**Severity:** High. Morbidity rate in horses infected with EEE is 75-95%.

**Clinical signs and symptoms:**

- Depression and anorexia without fever when initially infected
- Moderate to high fever 102.5-104.5°F (39.17-40.28°C)
- Lack of appetite
- Lethargy/drowsiness
- Neurologic signs- Onset of neurologic disease is frequently sudden and progressive
  - Periods of hyperexcitability, apprehension and/or drowsiness
  - Fine tremors and fasciculations of the face and neck muscles
  - Convulsions
  - Cranial nerve paralysis-- facial paralysis and weakness of the tongue are very common
  - Head tilt, droopy lip, muzzle deviation
  - Weakness, ataxia, and dysmetria (incoordination) in one or all limbs
  - Complete paralysis of one or more limbs
  - Colic
  - Recumbency (inability to stand)
  - Death

**Diagnoses:** Diagnosis is made by a veterinarian by measuring titers in serum (a component of whole blood), using an ELISA (enzyme-linked immunosorbent assay) or, less commonly, with PCR on CSF (cerebrospinal fluid).

**Treatment:** There is no cure for Eastern Equine Encephalitis. Supportive care is administered in horses which show clinical signs.

**Prognosis:** Poor. Horses infected with EEE do not often survive. Morbidity rate is 75-95% and death usually occurs within 2-3 days of onset of signs.

**Prevention:** Keep all horses up to date on vaccinations. Initial vaccination is followed in 4 to 6 weeks with a booster; yearly revaccination is recommended. More frequent boosters (i.e. twice yearly) are recommended in areas with year-round mosquito seasons and in endemic areas. Practice vector management on all properties where horses are kept:

- Use insect repellents frequently; re-apply after rain.
- Keep horses in at night when possible, and apply insect repellent.
- Eliminate or minimize standing water.
- Stock tanks or ponds with mosquito-feeding fish.
- Eliminate brush piles, gutters, old tires and litter.
- Remove all equipment in which standing water can collect.

**Biosecurity:** There are no recommended biosecurity protocols nor do restrictions need to be placed on affected or recovered animals as they pose no risk of infection to other horses. Practice vector control management on your facility to reduce risk of transmission from insects.