

Equine Herpesvirus-1: Neuropathogenic Strain Frequently Asked Questions

January 2012

Are there different strains of Equine Herpes Virus-1 (EHV-1)?

There are two strains of EHV-1 ubiquitous in the environment. The wild type non-neuropathogenic strain of the virus most commonly causes respiratory disease, abortion and neonatal foal death, but may occasionally result in neurological disease. Licensed vaccines effective against this strain of the virus are available. The mutant neuropathogenic strain of EHV-1 (NEHV-1) most commonly causes the neurologic disease syndrome, Equine Herpes Myeloencephalopathy (EHM). Currently manufactured licensed vaccines have no label claims to protect against the mutant neuropathogenic strain.

What is Equine Herpes Myeloencephalopathy (EHM)?

EHM is the neurological disease syndrome caused by EHV-1. The EHV-1 virus may damage blood vessels in the brain and spinal cord resulting in the various neurological clinical presentations of the disease.

Are all equids susceptible to EHV-1?

All equids are susceptible to EHV-1. Mules and donkeys are asymptomatic carriers that do not show clinical signs of the disease but can shed EHV-1 spreading the disease.

Can humans be infected with EHV-1?

EHV-1 is not transmissible to humans.

Are other animal species susceptible to infection with EHV-1?

There are rare reports of disease caused by EHV-1 in alpacas, llamas and guinea pigs. The disease does not affect livestock, cats or dogs.

Can a horse be a carrier of EHV-1?

It is thought that a significant percentage of horses are asymptomatic carriers of EHV-1. Similar to herpes viruses in other species, the dormant form of EHV-1 can reactivate at a later date, but generally with a low viral load posing a low risk of infecting another horse. It is unusual for latent carriers of the neuropathogenic EHV-1 strain to reactivate and cause reintroduction of the disease at a later time.

How does the virus shed from an infected horse?

Some horses infected with the neuropathogenic strain of EHV-1 can shed a large amount of virus in nasal secretions. Horses that have been exposed to the virus and not showing clinical signs of disease can also shed virus into the environment. Respiratory shedding of the virus generally occurs for 7-10 days, but may persist longer in infected horses.

How does this virus spread?

EHV-1 is shed in nasal secretion and can spread by direct horse-to-horse contact. The virus may also be spread indirectly through contact with objects contaminated with the virus, such as clothing, human hands, equipment, tack, trailers, feed/water buckets and wash rags. The virus can become airborne but only for short distances.

How long can the virus live in the environment?

Sunlight and dry environments inactivate the virus. It is estimated that the virus remains viable on clothes and human hands for 4-6 hours. In the environment under normal circumstances, it is estimated that the virus can remain viable for up to 7 days however, under moist conditions away from sunlight; it may be viable for up to one month.

What are the clinical signs of the neuropathogenic strain of EHV-1?

Clinical signs of EHM in horses may include fever, nasal discharge, limb edema, incoordination, hindquarter weakness, recumbency, lethargy, urine dribbling and diminished tail tone.

Equine Herpesvirus-1: Neuropathogenic Strain Frequently Asked Questions

January 2012

As an owner of an exposed horse, what should I do to monitor my horse?

Owners of exposed or potentially exposed horses should monitor the rectal temperature of each horse two times a day. A rectal temperature greater than 102°F commonly precedes other clinical signs of EHM. If a temperature reading above 102°F occurs or other clinical signs of disease are observed, immediately contact your private veterinarian for evaluation of the horse and preferably collection of nasal swabs and blood for laboratory testing.

How soon after exposure could my horse show clinical signs of disease?

The EHV-1 incubation period is defined as the period of time from horse exposure to the virus to the time the horse displays clinical signs of disease. The incubation period for EHM is typically from two (2) to ten (10) days, but may be as short as twenty-four (24) hours or as long as fourteen (14) days. The clinical sign of fever typically precedes respiratory signs and limb edema. Neurological signs may appear suddenly, progress rapidly and peak in intensity within 24-48 hours of the onset of neurologic signs.

What is the likelihood that my exposed horse will get sick and die?

Due to the limited number of past EHM outbreaks, there is little field data incidence of illness and death in exposed horses. Studies indicate that 80% of infected horses will display a fever; 30-35% of infected horses will develop neurologic signs; and 5-15% of infected horses will die or require euthanasia. Long term prognosis is good for infected horses that do survive.

How is the neuropathogenic strain of EHV-1 diagnosed?

Diagnosis of EHM is based on clinical signs and detection and isolation of the virus. A private practitioner should obtain a nasal swab and blood sample from an exposed horse with clinical signs of EHV-1 for submission to a diagnostic laboratory to test for the virus. Laboratory testing can determine the presence and specific strain of EHV-1.

Is there a treatment for the neuropathogenic strain of EHV-1?

Supportive treatments for EHM include administration of intravenous fluids, anti-inflammatory drugs, antiviral drugs and other appropriate supportive therapies.

Are antiviral drugs effective against EHM?

In horses with a high risk of exposure, develop a fever or test positive for EHV- 1, the administration of antiviral drugs may decrease the severity of clinical symptoms in a horse infected with EHM.

Are vaccines protective against the neuropathogenic strain available?

There is no USDA licensed EHV-1 vaccine with label claim for protection against the neurologic strain of EHV-1. Limited research results indicate that some licensed EHV- 1 vaccines have been shown to reduce nasal shedding of the virus and, in some cases, reduce the amount of virus present in the blood of an infected horse. Use of vaccination during an outbreak is controversial and risk-based; a decision to vaccinate should be made in consultation with a veterinarian.

What disinfectants are effective against EHV-1?

Herpes viruses are susceptible to many disinfectants. In general, a 1:10 dilution of bleach to water is effective against EHV-1. Both alcohol and bleach disinfectants are inactivated by organic matter, such as manure and soil. Before, disinfection process, all areas must be thoroughly cleaned with soap or detergent to decrease the organic matter present. In barn environments, it is advisable to use a disinfectant that retains activity in the presence of organic matter since it cannot be completely eliminated. Phenolics, such as 1 Stoke Environ® or SynPhenol-3®, and accelerated hydrogen peroxide products, such as Virkon®, retain activity. Be sure to follow manufacturer recommendations and label instructions for the disinfectant selected.



Equine Herpesvirus-1: Neuropathogenic Strain Frequently Asked Questions

January 2012

Where can I get the most up-to-date information on neuropathogenic EHV-1 disease outbreaks in California?

In California, EHV-1/EHM is a disease that must be reported to State Animal Health Officials within 48 hours of diagnosis. The California Department of Food and Agriculture (CDFA) Animal Health Branch (AHB) is responsible for monitoring EHV-1/EHM outbreak, for conducting EHV-1/EHM disease investigations, for confirming positive cases and issuing quarantines on EHV-1 positive horses. For the latest information on confirmed cases in California, visit http://cdfa.ca.gov/ahfss/animal_health/equine_herpes_virus.html or call the AHB Headquarters Office at 916-900-5002.

Where do I report a suspect case of EHV-1/EHM?

In California, any suspect case of EHM should be reported to the CDFA Animal Health Branch (AHB) Headquarters Office (916-900-5002) or a local AHB District Office (See District Office Telephone numbers below).

What determines a confirmed case of EHV-1?

The California Department of Food and Agriculture (CDFA) Animal Health Branch (AHB) defines any horse which displays compatible clinical signs AND has a positive laboratory diagnostic test for the neuropathogenic strain of Equine Herpes Virus-1 as a confirmed case.

What biosecurity measures should be implemented for EHV-1 positive or suspect horses?

- Isolate any suspect, exposed, or confirmed positive EHV-1/EHM horse.
- Restrict access of personnel to isolation area.
- Wear protective clothing including coveralls, rubber boots or plastic boot covers and disposable gloves when entering the stall or contacting an EHV-1/EHM suspect, exposed or confirmed positive horse. All protective clothing should be disposed of or washed before contacting any other horses.
- Use disinfectant-saturated foot mats or foot baths filled with disinfectant at entry and exit doors to barns and stalls. Be certain to change foot bath solutions frequently since the presence of organic matter may deactivate the disinfectant.
- Wear disposable gloves while handling infected animals. Thoroughly wash your hands with soap and water between contacts with horses.
- Always handle healthy animals first and sick animals last.
- Use separate grooming, feeding and handling equipment for each horse.

Where can I get additional EHV-1/EHM information?

- CDFA EHV-1 Webpage: http://cdfa.ca.gov/ahfss/animal_health/equine_herpes_virus.html
- USDA EHV-1 Webpage: <http://www.aphis.usda.gov/vs/nahss/equine/ehv/>
- American Assoc. of Equine Practitioners: http://www.aaep.org/EHV_resourcesowner.htm
- UC Davis Center for Equine Health: http://www.vetmed.ucdavis.edu/ceh/ehv1_general.cfm

<i>CDFA Animal Health Branch Offices</i>	
Sacramento (HQ)	916-900-5002
Modesto	209-491-9350
Ontario	909-947-4462
Redding	530-225-2140
Tulare	559-685-3500