



## Equine Herpes Myeloencephalitis

### What is Equine Herpes Myeloencephalopathy?

Equine Herpes Myeloencephalopathy (EHM) is a neurologic condition associated with Equine Herpes Virus Type-1 (EHV-1) infection in horses. Although EHV-1 is ubiquitous in the equine population and generally causes respiratory disease and abortion in mares, the neurologic form is a less common clinical manifestation of the virus. However, during the past decade, the number of reported individual cases and outbreaks of the neurologic disease associated with EHV-1 have increased, indicating that EHM is an emerging disease. Neurologic deficits commonly observed in EHM include a lack of coordination, most severe in the hind limbs, incontinence or dribbling urine, and constipation. Some horses may even become recumbent and unable to stand. Fevers greater than 103 F may be noted and may occur before the onset of neurologic symptoms. With symptomatic and supportive care, some horses can survive EHM; however, once recumbent, the prognosis for recovery becomes poor. Surviving horses can make a complete recovery while some horses may be left with permanent neurologic deficits.

Most horses become infected with EHV types 1 and 4 within the first year of life. Active infection typically results in symptoms such as fever, lethargy, cough or nasal discharge. After initial infection, the virus goes into a latent or dormant state, persisting at low levels in the white blood cells (T lymphocytes) and the trigeminal ganglia neurons without causing clinical disease or spread of infection to other horses. Most adult horses have latent EHV infections. Recrudescence (reactivation) may occur with stress or compromise of the immune system, resulting in viral replication, increased levels of the virus released into the blood stream (viremia) and spread of the virus to the respiratory tract and other organ systems. During recrudescence, upper respiratory symptoms may reoccur along with significant viral shedding from the upper respiratory tract. At this point, the virus can be spread to other horses through nasal secretions. Other less common clinical manifestations of EHV-1 include neurologic disease, late-term abortions in mares, severe and often fatal neonatal pneumonia and ocular lesions. Specifically, viremia can enable EHV-1 to spread to the central nervous system and infect endothelial cells lining the blood vessels, causing inflammation and damage to the microvasculature (otherwise known as vasculitis). The EHV-1 induced vasculitis can further lead to infarction and ischemia, decreasing blood flow within areas of the spinal cord, ultimately resulting in neuronal injury. Currently, we do not know why EHV-1 infection progresses to cause neurologic disease in some horses and not others; however, infection with specific strains of EHV-1, high levels of viremia, age of the horse and differences in the host immune system response likely contribute.

### When should I be concerned?

If your horse develops sudden neurologic deficits including ataxia or lack of coordination, incontinence or dribbling urine, staggering or inability to stand with or without concurrent



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fever, you should call a veterinarian for further evaluation. This horse should be isolated from other horses until a diagnosis is known.

## Testing for EHV-1

Random testing for EHV-1, particularly without the presence of clinical symptoms, is not advised. Only horses with acute onset of neurologic symptoms and/or fever should be tested for EHV-1. Polymerase chain reaction (PCR) testing that detects the EHV-1 DNA can be performed on nasopharyngeal swabs and whole blood samples to identify horses with significant viral shedding and high circulating levels of the virus within the blood.

## Is there a vaccination that prevents EHM?

Although horses are frequently vaccinated for EHV-1/4, these vaccines are not currently labeled to prevent EHM. However, these vaccines are shown to limit the severity of upper respiratory disease and the degree of viral shedding associated with EHV-1/4 infection. These vaccines also promote herd immunity and may limit spread of the virus between horses. Specific brands of EHV-1/4 vaccines are even labeled to prevent abortion in mares. At this time, the role of vaccination in the prevention of EHM remains unknown and more research is under way in this area. Currently, the American Association of Equine Practitioners Vaccination Guidelines for adult horses recommends vaccinating “at risk” horses for EHV-1/4 every six months. Specifically, these guidelines recommend vaccinating your horse for EHV-1/4 if the horse is less than 5 years of age, travels to equestrian events (such as horse shows, competitions or group trail rides), resides on a breeding farm or has contact with pregnant mares. In addition, if your horse stables at a boarding facility where horses travel to and from other equestrian events, vaccinating every six months for EHV-1/4 is recommended. If your horse is entering a high-risk area or population where active EHV-1 infection has been recently documented, talk to your veterinarian about administering a booster vaccine no sooner than two weeks prior to potential exposure. Currently, it is not recommended to vaccinate horses with active EHM or EHV-1 infection or horses in direct contact with EHV-1-positive horses during an outbreak.

## Additional Resources:

- [http://www.vetmed.ucdavis.edu/ceh/local\\_resources/pdfs/currenthealth\\_w\\_hitepaperEHM.pdf](http://www.vetmed.ucdavis.edu/ceh/local_resources/pdfs/currenthealth_w_hitepaperEHM.pdf)
- <http://www.aaep.org>
- [https://www.aphis.usda.gov/vs/nahss/equine/ehv/equine\\_herpesvirus\\_brochure\\_2009.pdf](https://www.aphis.usda.gov/vs/nahss/equine/ehv/equine_herpesvirus_brochure_2009.pdf)
- <http://www.respe.net/system/files/EHV1consensusStat|VIM09.pdf>

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