

# Equine Herpesvirus 1

*Equine Herpesvirus 1 (EHV-1), is an economically important disease for the horse industry, causing abortion (sporadic or storms), neonatal death, respiratory disease in young horses and myeloencephalopathy (a neurologic manifestation of the disease - paralysis). Outbreaks of this virus have a negative impact on the equine industry worldwide due to interference with movement of horses across borders and cancelled competitions.*

## Virology

---

EHV- 1 contains a double-stranded linear DNA enclosed by an icosahedral capsid and surrounded by a tegument layer and an envelope. There are nine EHV, five (EHV1- to EHV-5) cause different diseases in the domestic horse, whilst EHV-6 to EHV-9 infect wild equids. In the domestic horse population the alpha-herpes virus (EHV-1 and EHV-4) are the most important.

These viruses are ubiquitous in the equine population and have sophisticated life cycles adapted to exploit the host animal population and ensure virus persistence. Latency (animals carrying the virus in an asymptomatic way) is a key aspect of the virus persistence in the equine population.

## Clinical Signs

---

This virus can affect horses of any age. EHV-1 infection is associated with three syndromes: abortion and early fetal death, respiratory disease and neurologic disease. EHV-1 causes late term abortion, normally there are no other clinical signs on the mare and abortion occurs precipitously. Abortion storms are rare today due to improve management practices and vaccination of pregnant mares. Respiratory disease is normally mild upper respiratory, causing fever and lethargy. The neurologic form of EHV-1 causes different degrees of paralysis in the affected animal with devastating consequences when the animal becomes recumbent. This form of the disease is rare affecting approximately 10 % of the infected horses.

## Epidemiology of Transmission

---

The main reservoir of this virus is the latently infected horse. Environmental persistence is likely to be limited, however the environment plays a key role in spreading the disease during outbreak situations. EHV-1 is highly contagious and easily spread through direct horse-to-horse contact and indirectly via contaminated fomites, surfaces and dirty hands or clothing. The most common transmission route for the virus is through the respiratory tract via aerosolized droplets of the respiratory tract secretions. Inhalation or ingestion of virus from contaminated surfaces can also lead to infection. During an abortion the fetus, fetal fluids and placenta contains large amount of virus, thus being highly infectious.

## Control

---

Control of EHV-1 is a combination of management practices, biosecurity, cleaning and disinfection and an adequate vaccination program.

There are three key points in the control of this disease:

- Preventing the virus to enter the premises
- If the virus entered the herd, then limiting its spread and severity of clinical signs.
- Limiting the spread of the virus to other farms during an outbreak.

The virus is easily inactivated by most commonly approved EPA and Health Canada registered disinfectants. Ensuring fomites and environmental surfaces are properly disinfected can help limit the transmission of the virus.

## References

---

American Association of Equine Practitioners

<http://www.aaep.org/info/horse-health?publication=753>

Merck Veterinary Manual

[http://www.merckvetmanual.com/mvm/respiratory\\_system/respiratory\\_diseases\\_of\\_horses/equine\\_herpesvirus\\_infection.html](http://www.merckvetmanual.com/mvm/respiratory_system/respiratory_diseases_of_horses/equine_herpesvirus_infection.html)

MacLachlan, N. J., Dubovi, E. J. (2010). *Fenner's Veterinary Virology* (4th ed.). Cambridge, MA: Academic Press an imprint of Elsevier.

Slater J. Equine Herpesviruses. In: *Equine Infectious Diseases*