

Equine Herpes Virus – New Jersey

Equine Herpes Virus type 1 (EHV-1) is found world-wide in the horse population, and most horses have been infected or exposed to it by 1 to 2 years of age. The virus remains latent (hidden) in the body, and may be expressed at any time of the horse's life, particularly when the animal is stressed. Because of recent outbreaks of disease in the United States, it is important for horse owners, trainers, show hosts, and anyone else involved in the equine industry to learn as much as possible about this virus, in order to prevent its spread when horses are gathered together in any event or forum.

The EHV-1 virus spreads quickly from horse to horse, has a high morbidity (infection rate) and can cause a wide range of symptoms, from a complete lack of clinical signs to respiratory problems, especially in young horses, and spontaneous abortions in pregnant mares. In addition, the neurologic form EHV-1 can cause an acute paralytic syndrome which often results in a high mortality. The incubation period of EHV-1 is typically 2-10 days but unapparent infections may be spread for 21 days. Transmission of the virus is mostly via direct contact with infected materials; therefore, tack, feed and water buckets, and other equipment must not be shared between horses, and biosecurity measures must be utilized. While highly infectious, the virus does not persist in the environment and is neutralized by hand soap, alcohol-based hand sanitizers, and sunlight. The virus does not affect humans and other domestic animals, with the exception of llamas and alpacas.

Clinical signs in the respiratory disease include fever, serous nasal discharge, depression, pharyngitis, cough, inappetence, and/or submandibular or retropharyngeal lymphadenopathy (enlarged lymph nodes). The EHV-1 respiratory strain can occasionally cause neurologic signs (nerve damage and encephalitis – inflammation of the brain). The EHV-1 neurologic strain also causes swift neurologic signs. In horses infected with the neurologic strain of EHV-1 or EHV-1 respiratory strain causing neurologic signs, the clinical signs include mild incoordination, posterior weakness/paralysis and recumbency, loss of bladder and tail function, urine dribbling, and loss of sensation to the skin in the perineal and inguinal areas. In exceptional cases, the paralysis may progress to quadriplegia and death. Prognosis depends on severity of signs and the period of recumbency. When the EHV-1 virus causes neurologic signs, the correct terminology for the disease is EHM, Equine Herpes Myeloencephalopathy.

There is currently no known method to reliably prevent the neurologic form of EHV-1 infection. It is recommended to maintain appropriate vaccination procedures in an attempt to reduce the incidence of the respiratory form of EHV-1 infection, which may help prevent the neurologic form. Transmission of the virus can occur via coughing or sneezing over a distance of up to 35 feet as well as by direct contact with infected horses, touching infected horses and then touching healthy horses

without hand-washing or disinfecting the hands, contaminated feed and/or water buckets, manure and equipment.

EHV-1 and EHV-4 are reportable diseases in NJ. Anyone who suspects or knows that a horse has this disease must report it to the State Veterinarian, at 609-671-6400, within 48 hours. Samples submitted to the Division's Animal Health Diagnostic Laboratory from veterinarians can be tested for EHV-1 for New Jersey veterinarians for a fee. At least 10 ml of blood collected in a purple top tube, and nasal swab in viral transport media [preferred] or 1 ml of saline should be submitted. Veterinarians should call the laboratory for more information at 609-406-6999.

What can be done to help prevent the spread of the EHV-1 virus?

- First, understand that the vast majority (over 80%) of US horses 2 years old and older have already been infected/exposed with the EHV-1 herpes virus, from their dams. Horses carry the virus in their systems, and at any time, especially if under stress, could potentially shed the virus.
- Practice biosecurity at all times. The goal of a biosecurity plan is to prevent the transmission of infectious agents among individuals.
- Prevent horse-to-horse contact; let each horse have its OWN equipment, tack, grooming equipment, water and feed bucket, etc. DO NOT SHARE any of this equipment with any other horse.
- Prevent humans from touching your horse, especially around the face, nose, and neck. If people have to touch the horse (groomers, hair braiders, veterinarians, etc), insist that they wash their hands with soap and water, or use an alcohol-based hand sanitizer BEFORE they touch your horse. Insist that they do the same AFTER they touch your horse. People can spread the virus this way from horse to horse if they do not sanitize their hands.
- If a common hose is to be used for watering, be sure that the nozzle and any other part of it that could touch the inside or outside of the water bucket is disinfected with diluted bleach (dilute 1 to 10 parts water). When it is disinfected, hold the hose high above the water bucket, and do not touch any part of the bucket with the hose. Do not immerse the hose end into your water bucket when filling it. Better still: bring several gallon jugs of your own water to water your horse, so that you do not need to use the common hose.
- Spray the bottoms of your shoes/boots with disinfectant right after the show and before coming back home to your barn.
- Wash your clothes immediately after attending a show, especially if you may have accidentally brushed up against other people's horses.
- Keeping your horse in its trailer, when possible, and not stabled with unknown status horses is better for the horse's biosecurity.
- Temperature check your horse for at least 2 weeks after the show, twice a day. If any fever is found, immediately call your veterinarian. Also call your

veterinarian if your horse goes off feed or does not act normally in any other way, or has problems walking.

- Call your veterinarian if you have any other questions about the EHV-1 virus, and vaccination programs.

SIMPLE DISINFECTION PROTOCOL FOR EHV-1:

- 1) Thoroughly clean the areas before disinfection i.e. remove all organic material (manure, bedding, food...)
- 2) Dilute five tablespoons of household bleach per one gallon of water (or 1 part bleach (sodium hypochlorite) and 9 parts water)*
- 3) Use this solution to spray or dip cleaned surfaces, tools, footwear, etc.
- 4) Use disposable materials or products that can be disinfected when treating sick or isolated animals

*Disinfectants should always be mixed at the recommended concentrations, more is not necessarily better

More Biosecurity Measures to prevent EHV-1 infection and dissemination

Large groups of horses sharing a common airspace can all be infected by one horse shedding the virus. If you suspect that your horses have been exposed to EHV-1, take rectal temperatures daily (normal adult body temperature is 100.5°F). Typically, horses infected with EHV-1 have a temperature of 102°F or higher. There are three major steps in preventing the dissemination of EHV-1, you can:

- 1) Reduce the risk of introduction of the disease to horses in the premises,
- 2) Reduce the spread of the disease to other horses in the premises and
- 3) Reduce the spread of infection beyond the infected premises

The following management practices will help minimize infections between horses:

- Have an original, recent Health Certificate on new arrivals, and, for attending horse shows (preferably within 48 -72 hours prior to a horse show).
- Verification of vaccination of new introductions. Vaccination of new animals should be done at least 14 days before entering a facility. Follow the recommendations of your veterinarian.
- New arrivals should be healthy without recent fever or other clinical signs of infection.
- New arrivals should originate from a premise without a recent history of EHV-1 infection. If infection has been identified, additional precautions should be taken.
- Isolate newly arrived horses for 2-3 weeks (take daily temperature).
- Restrict movement to and from the isolation area.
- Isolated horses should be treated, fed and cleaned last (after the resident horses) .
- Isolated horses should be treated, fed and cleaned with dedicated equipment.

- Use hygienic measures (gloves, coveralls, hand washing with soap, alcohol-based hand sanitizers, and foot baths).
- Have dedicated tack, grooming equipment, wipes, and any other material for each animal.
- Avoid sharing fences, buckets, common water sources.
- Do not dip the water hose into the bucket.
- Isolate sick horses (any disease).
- Always work sick horses last in your chore routine. Change/clean clothing after completing chores.
- Clean and disinfect trailers after each use (remove organic material prior to disinfecting).
- Changing coveralls and cleaning and disinfecting boots when moving between barns, farms can help minimize the risk of spreading all types of diseases.
- Separate horses in small groups.
- Do not rotate horses from stall to stall.
- Properly dispose of bedding and leftover feed or hay.
- Keep your horses in top physical condition to eliminate any stress: excellent feed, plenty of rest, sunshine, hoof care, teeth care, worming regimens, and up-to-date vaccinations. Have your veterinarian work with you to correct any other underlying disease problem your horse may have, which may cause its immune system to be stressed.

If you have any questions please call the New Jersey Department of Agriculture (609) 671-6400.

EHV is a **reportable** disease in New Jersey. If you have a horse exhibiting neurological signs, suspect EHV, or you have questions or concerns, please call the Division of Animal Health at 609-671- 6400. The New Jersey Animal Health Diagnostic Laboratory can test horses for EHV and recommends PCR testing for horses exhibiting neurological signs. For further information about testing, please contact the laboratory at 609-406-6999. A discounted price is available for multiple samples.

EHV-1	Neurologic PCR (\$50.00)	EHV-1 SN titer (\$15.00)	2-4 days
	Whole blood PTT/Nasal swab, brain tissue	1 ml serum, w/cold pack	
Contact Dr. Amar Patil (609)671-6405 or via email at amar.patil@ag.state.nj.us *PTT-purple top tube **spinal fluid			

Laboratory specimen(s), along with a laboratory submission form, may be sent to:

(If sent via courier service):

NJ Department of Agriculture
Animal Health Diagnostic Laboratory
NJPHEAL, 3 Schwarzkopf Drive
Ewing, NJ 08628

(If sent via U.S. Postal Service):

NJ Department of Agriculture
Animal Health Diagnostic Laboratory
P.O. Box 330
Trenton, NJ 08625

A copy of the American Association of Equine Practitioners biosecurity guidelines and many excellent EHV resources can be found at www.aaep.org/ehv_resources.htm.

More information on the Equine Herpes Virus (EHV-1) can be found at the following Websites:

- University of California Davis School of Veterinary Medicine “Awakening the Dormant Dragon: Neurological Form of Equine Herpesvirus-1”,
<http://www.vetmed.ucdavis.edu/ceh/docs/horsereport/pubs-HR25-2-bkm-sec.pdf>
- Gluck Equine Research Center, University of Kentucky,
<http://www.ca.uky.edu/gluck/BiblioEHV1.asp>
- University of Florida, College of Veterinary Medicine,
<http://extension.vetmed.ufl.edu/files/2012/02/EHV-June-2011.pdf>