

1. [FAQ: Regarding Equine Herpesvirus \(EHV\)](#)

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Written by the AAEP (2017)

**1. What is equine herpesvirus (EHV)?**

Equine herpesviruses are viruses that are found in most horses all over the world. Almost all horses have been infected with the virus and have no serious side effects. It is currently unknown what causes some infected horses to develop the serious neurological forms that may be fatal.

**2. EHV stands for equine herpes virus. This is a family of viruses which are named by numbers such as EHV 1, 3, 4. There are more viruses in this family, but EHV 1, 3, and 4 pose the most serious health risks for domestic horses.**

To date, nine EHV's have been identified, worldwide. Equine herpesvirus myeloencephalopathy (EHM) is another name for the neurologic disease associated with equine herpesvirus (EHV) infections.

- EHV-1: Can cause four manifestations of disease in horses, including neurological form, respiratory disease, abortion and neonatal death.
- EHV-3: Causes a venereal disease called coital exanthema that affects the external genitalia but has not been shown to affect fertility.
- EHV-4: Causes a nonfatal upper respiratory tract disease in foals and is uncommonly associated with abortion and rarely with neurological disease.

EHV is a common DNA virus that occurs in horse populations worldwide. The two most common species are EHV-1, which causes abortion, respiratory disease and neurologic disease; and EHV-4, which usually causes respiratory disease only but can occasionally cause abortion and rarely neurological disease.

Respiratory disease caused by EHV is most common in weaned foals and yearlings, often in autumn and winter. Adult horses are more likely than younger ones to transmit the virus without showing signs of infection.

EHV-1 myeloencephalopathy (EHM) results from widespread vascular or blood vessel injury after damage to the lining of the blood vessels of the blood-brain barrier. Neurologic signs result from inflammation of the blood vessels, blood clots, and death of neurologic tissue. Cases of EHM occur singly or can affect multiple exposed horses. They may or may not be associated with a previous or ongoing EHV-1 respiratory or abortion disease outbreak.

**3. How does EHV spread?**

EHV-1 is contagious and spread by direct horse-to-horse contact via the respiratory tract through nasal

secretions. It is important to know that this virus can also be spread indirectly through contact with physical objects that are contaminated with the virus:

- Human contaminated hands or clothing
- Contaminated equipment and tack
- Contaminated trailers used for transporting horses
- Contaminated wipe rags or other grooming equipment
- Contaminated feed and water buckets

The air around the horse that is shedding the virus can also be contaminated with infectious virus. Although it is known that the virus can be airborne, it is difficult to establish the distance the virus can spread in this manner under typical horse management and environmental conditions.

#### **4. How long can the virus live outside of the horse's body? This includes on clothing, footwear, walls, buckets, tack, etc.**

The virus can survive up to 7 days in the environment under normal circumstances, but can remain alive for a maximum of one month under perfect environmental conditions. The most important measure is to first clean equipment and horse housing areas. *(Please note: It is important to wash and rinse surfaces when possible prior to applying disinfectants.)* Cleaning first allows for removal of organic material which makes the disinfectants more effective. After cleaning the surface, follow with a disinfection process. The virus is easily killed in the environment by most disinfectants. Conventional disinfectants and detergents are the best. It is important to perform hand hygiene (wash hands with soap and dry thoroughly or use alcohol based hand sanitizer) when moving between horses that are grouped separately to avoid spreading pathogens that may contaminate your hands.

#### **5. What are some of the signs of EHV?**

After infection, the incubation period may be as short as 24 hours, is typically 4-6 days, but can be longer. EHV-1 typically causes a biphasic (two-phase) fever peaking on day 1 or 2 and again on day 6 or 7. With respiratory infections there is often serous or mucoid nasal and ocular discharge, but not a lot of coughing. There may be some persistent enlargement of submandibular lymph nodes (lymph nodes under the jaw). With the neurologic form, there are typically minimal respiratory signs, fever (rectal temperature greater than 101.5 degrees F) being the only warning sign. Neurologic disease appears suddenly and is usually rapidly progressing, reaching its peak intensity within 24 to 48 hours from onset of initial neurologic signs. Clinical signs of the neurologic disease may include:

- Nasal discharge
- Incoordination
- Hind limb weakness
- Loss of tail tone
- Lethargy

- Urine dribbling
- Head tilt
- Leaning against a fence or wall to maintain balance
- Inability to rise

## 6. How is EHM diagnosed?

Diagnosis of EHM is based on clinical signs and isolation of the virus. Diagnostics performed by your veterinarian may include:

- Nasal swab collection for laboratory examination and detection of virus by quantitative polymerase chain reaction (qPCR) assay and/or by virus isolation
- Blood collection to detect virus by qPCR assay or by virus isolation.
- Blood samples should be collected 2 to 3 weeks apart for levels of antibodies specific to EHV-1.

## 7. Is it safe to travel with my horse? (i.e. trail ride, horse show, etc.)

Consult with your local and [state/provincial veterinarian's](#) office regarding any newly developed travel restrictions.

Safety and precaution is always recommended, even when an outbreak has not occurred. Biosecurity is important at all times. Please see the [AAEP Biosecurity Guidelines](#).

## 8. If I'm involved with hosting an equine event or show, should the event/show continue, should it be cancelled, or does it depend on the location of the event?

It is advised to seek updates from the event organizer and from [State Animal Health Officials](#).

## 9. How do I handle horses returning from events where they may have been exposed to EHV?

Infections other than EHV-1 can also spread by horse-to-horse contact, so keeping a horse with a fever isolated is a very good practice in any case. However, any horse returning from any event should be isolated to prevent the spread of any infectious disease whether or not there is a fever.

If you handle a horse with EHV-1 and don't wash your hands or change clothing, the infection may be transmitted to other horses. A solution of 1 part chlorine bleach to 10 parts water is effective for decontaminating equipment and environment. Washing clothing in hot water with detergent and drying in a dryer is adequate and less damaging to clothing. Click [here](#) for more biosecurity cleaning measures.

If your horse develops fever, respiratory signs or neurological signs, immediately notify your veterinarian

and do not move the horse or horses in the immediate area. Alert those who have horses in the adjacent area to cease all movement of horses in and out of the facility until a diagnosis is confirmed by testing and a targeted plan for the control of spread of disease is developed in consultation with your veterinarian.

For horses that **may** have been exposed to the infectious agents and therefore at risk for disease, there are some steps to take to minimize the risk of spread of the disease in their home facility. Even if these horses are returning home from events at which no disease was reported, and even if these horses appear healthy, precautions are needed as these horses could bring it home and spread it at their home farm – this is the classic way this disease spreads:

- These horses should be isolated from any other horses when they return to their home facility. Isolation requires housing them away from other horses (i.e. the horse should be stabled in a barn, turn out shed, paddock or another area where there is no contact with other horses), using different dedicated equipment to feed, clean and work with them than is used with any other horses, and rigorous hygiene procedures for horse handlers (hand hygiene, wearing separate clothes when contacting the horses, etc.). Please discuss this with your veterinarian.
- We strongly advise owners to call their veterinarians to discuss how long to keep the horses isolated at home, but even if they don't develop fevers this should be at least 21 days.
- These horses should have their temperature taken twice a day and recorded, as elevation in body temperature is typically the first and most common sign of infection. Horses with elevated temperatures (101.5 degrees F or greater) should have nasal swabs and blood drawn by your veterinarian.
- If a horse develops a fever and is found to be shedding EHV-1 then the level of risk to other horses on the premises increases significantly. Affected farms should work closely with their veterinarian to develop a targeted management plan for that situation, if it develops.
- The [AAEP EHV Control Guidelines](#) can be used by your veterinarian to assist you in developing a more detailed response plan.

It is essential that the isolation facility have supervised oversight by an individual knowledgeable in disease control and quarantine procedures to avoid the possibility of spread of disease agents. When it comes to biosecurity, compliance with the small details of the plan matter and all personnel need to be informed of the plan to avoid inadvertent errors that can lead to spread of disease agents. Your veterinarian can assist you with this.

#### **10. What do we do if we already have a potentially exposed horse on a farm?**

It still makes sense to isolate this horse from other horses; even though it may have already been in contact with other horses, start isolation procedures to stop further exposure. It is very important not to mix horses from different groups to accomplish this. Try and isolate the suspect horse without moving other horses from one group to another – segregation of horse groups is key, because this will help you reduce spread if an outbreak starts.

Check temperatures of all horses on the farm twice daily (fever spikes can be missed if you check once daily) and keep a log of these recordings. If fevers are detected, then test for EHV-1. The value of starting healthy horses on an anti-viral treatment when there is no evidence of disease on the farm is questionable. Consult with your equine veterinarian for further guidance.

#### **11. What treatments and specific anti-viral treatments can I use against EHM on a farm?**

If EHM is present on a farm, then the risk to other horses at that farm is greatly increased. Stringent quarantine and [biosecurity procedures](#) must be implemented immediately. Treatments may include anti-inflammatory drugs and some horses may require intravenous fluids. Antibiotics may be used to treat a secondary bacterial infection if one develops; however, antibiotics have no effect on the equine herpesvirus itself.

For horses on the farm that develop fever, test EHV-1 positive, or have a high risk of exposure, anti-viral drugs may decrease the chance of developing EHM. The benefit of antiviral treatment of the horse should be discussed with your veterinarian

#### **12. Is there any value to using booster vaccination against EHV1 at this time?**

Unfortunately, none of the current EHV-1 vaccines carry a label claim for prevention of EHM. More research is needed to identify a vaccine that may prevent this form of the disease. Some of the EHV-1 vaccines have been shown to reduce nasal shedding and, in some cases, reduce viremia. These products may therefore have some theoretical value against EHM by reducing viremia, and certainly against spread of the virus. For more information regarding these vaccines, consult with your equine veterinarian.

If horses on the farm are previously vaccinated against EHV-1, the booster vaccination should quickly increase immunity, and perhaps reduce spread of EHV-1 if it is present. Vaccination in these circumstances is controversial. The use of vaccination is therefore a risk-based decision.

#### **13. How long can my horse shed the virus? Is it safe for the horse to return to work/show ring when symptoms clear?**

The [AAEP EHV Control Guidelines](#) suggests to horse owners whose horse(s) were on the premises of an EHV-1 confirmed case to maintain isolation procedures (primary perimeter) for 28 days after last suspected new infection.

In the absence of clinical disease, the risk of exposure decreases with time. A shorter quarantine period, such as 21 days, may be justified if, during this time, no horse has had any fever (temperature taken at least 24 hours without treatment with non-steroidal drug), abortion or neurologic signs and all exposed horses are tested and have a negative test result using nasal swabs for EHV-1 by qPCR. There should be compliance with requirements by state animal health officials for duration of quarantine and testing.

#### **14. What methods of prevention can I implement to avoid EHV outbreak and other disease transmission?**

Two main methods of prevention you can establish to help avoid disease outbreak on your premises include vaccination and biosecurity protection.

The goal of vaccination is to induce resistance to infection prior to exposure by producing a strong and durable immune response without inducing clinical signs of disease in the vaccinated animal. While there are several vaccines available for protection against both respiratory disease and abortion as a result of EHV-1 infection, at this time there is no equine licensed vaccine that has a label claim for protection against neurologic disease (EHM). Consult with your veterinarian for further guidance if you are considering the use of EHV-1 vaccines.

[Biosecurity](#) means doing everything you can to reduce the chances of an infectious disease being carried onto your farm by people, animals, equipment, or vehicles, either accidentally or on purpose. Anything that touches an infected horse or sheds secretions from sick horses has the potential to transfer pathogens to other horses. You are the best protection your horses have.

**15. At what point will the “All Clear” be posted and when can I start attending events again or can events/shows start operating?**

The EHV-1 virus is a normal occurring virus found in the equine population. All of the reasons why EHV-1 causes severe neurological signs in some horses are not fully understood. If you are travelling to an event, contact your veterinarian well in advance of the departure date to verify what testing is required. Interstate travel may have different requirements and these requirements may vary to each equine event or venue.

There is never an “ALL CLEAR/ NO RISK” when horses commingle. Basic every day biosecurity is always recommended. You can obtain updates on situations in your area from your State Veterinarian and on the AAEP website.

Please consult with your [State/Provincial animal health office](#), show, or other equine venue to confirm if an event is still scheduled and whether any further testing or other health requirements are needed before entering the state/facility/grounds.

**Additional Resources**

Resources from the USDA, AAEP, AVMA and others may be found online [here](#).

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