Health Care FAQ

What are the Signs of EHV Infection?

There are four Herpesviruses that are widespread in the horse environment and which are associated with a variety of disease syndromes in horses. They are called Equid Herpesviruses 1, 2, 3 and 4 (EHV-1, EHV-2, EHV-3 and EHV-4). EHV-1 and EHV-4 are the most significant forms of the virus.

What are the Signs of EHV Infection?

**EHV-1**

In its most common form, EHV-1 causes respiratory disease. Horses show variable signs that include elevated temperature, watery nasal discharge, enlarged glands under the jaw and coughing. Some cases may progress to secondary pneumonia. EHV-1 can also cause single or multiple abortions ('virus abortion') in mares during mid to late pregnancy. In addition, infected foals may be prematurely born alive but soon fade and die while others are born dead at full term. Disastrous epidemics ('abortion storms') can occur in susceptible pregnant mare populations. Thirdly, this virus can also cause devastating neurologic disease in the form of depression, incoordination and paralysis.

**EHV-2**

EHV-2 does not usually cause illness on its own but is believed to cause suppression of the horse's immunity to other viral infections and allow them to cause signs of disease, usually respiratory infection, i.e. elevated temperature, watery nasal discharge, enlarged glands under the jaw and coughing.

**EHV-3**
EHV-3 is a venereal disease that affects the genitalia of breeding animals.

**EHV-4**

EHV-4 is a common cause of coughing and loss of performance in racehorses. Usually the respiratory disease is not severe but the disruption to training and performance programs and consequent economic losses can be very significant.

**Treatment**

Treatment is usually supportive, as specific anti-Herpesviral agents available for humans have not been proven to be successful in horses.

**Respiratory Disease**

Horses with respiratory disease may benefit from medication to reduce temperature and coughing and antibiotics may be given to help prevent or combat secondary infection with bacteria, all reducing time to recovery.

**Paralysis**

Horses affected by paralysis can be very difficult to manage. Anti-inflammatory drugs may help to ease clinical signs but if the condition progresses, the horse may be unable to stand unassisted. If such cases are to be treated, the horse needs to be supported in a sling and may need to receive water and food intravenously or by stomach tube. Some horses respond to support in slings better than others, and recovery depends on patient compliance.

**Abortion**

Abortion cannot be treated but must be managed to proceed as easily and safely as possible in terms of the mare's health and that of others. She must be isolated from all other pregnant mares, including those that she has lived with throughout her pregnancy because she, her placenta and her placental fluids are highly infectious.
to other mares only after she has aborted. Affected foals are usually stillborn or die shortly after birth.

**How Does EHV Spread?**

**Infectious Material**

EHV spreads mainly by inhalation of infectious material, either from nasal discharge or from fluid that may be coughed or sneezed over a wide area. Following abortion, the placenta, its fluids, the fetus or dead foal are heavily contaminated with virus and are a potent source of infection by inhalation from other mares.

"Shedders"

It is possible for horses to spread the virus even when they are not showing signs of illness, i.e. they can be asymptomatic carriers. These horses are called 'shedders' and are very difficult to detect because they may only spread virus when stressed by transport, illness, competition etc. Once a horse has been infected with herpesvirus, it typically becomes a shedder. The majority of horses in any given population are shedders.

**Mating**

Coital exanthema is spread by direct genital contact during mating. The blisters contain fluid that is highly infectious and breeding must stop until all spots have cleared.

**Horses Affected**

In a group of horses that have not been previously infected or vaccinated, introduction of the virus usually results in disease in all of the animals. Horses that have been previously infected or vaccinated may exhibit reduced or no clinical signs of infection.

**Diagnosis**
**Blood Tests**

Specific blood tests can be used to determine if a respiratory infection is associated with EHV-1 or 4 infection. In most cases, two blood samples are taken 10 days to two weeks apart and tested to see if antibodies have been produced to one of the viruses (seroconversion). While the horse is often well on the way to recovery by the time results are available, the information may help with the management of other horses in the same barn.

**Abortion**

It is not possible to predict or diagnose an abortion due to EHV-1 or 4 on the basis of a blood test. The mare may have been infected several weeks before the abortion occurred and even when seroconversion (a significant rise in specific blood antibody levels) is demonstrated, this cannot be differentiated from coincidental respiratory challenge. A specific postmortem examination must be performed on the dead fetus or foal to look for characteristic pathological changes and specific samples must be collected for laboratory examination to detect the virus.

**Coital Exanthema**

Coital exanthema is usually diagnosed and acted upon on the basis of typical clinical signs. In some cases the infection is confirmed by demonstration of EHV-3 antibody seroconversion in paired blood samples collected 10 days apart and by isolation of EHV-3 virus from fluid collected from the blisters.

**Control and Prevention**

**Vaccination and Isolation**

Ideally, all horses should be vaccinated to reduce the incidence of Herpesvirus diseases and to minimize the shedding of virus into the horse environment. If an outbreak of respiratory disease occurs, affected animals should be isolated until they have fully recovered.
Vaccination in the face of disease, i.e. where an abortion or paralysis case has occurred is not recommended as horses who are incubating infection may react badly to vaccination.

**Group Housing**

Where possible, horses should be kept in groups and these groups kept constant to minimize the risk of disease spread from one group to another.

**Pregnant Mares**

Pregnant mares should be kept in small fixed groups according to their stages of pregnancy and no young animals or horses out of performance training should be introduced to their groups. Each group should have plenty of paddock space and separate stable accommodation and pregnant mares should never be kept in over-crowded conditions.

**Abortion or Stillbirth**

If an abortion or stillbirth occurs, contact your veterinarian without delay. The affected mare and fetus should be immediately isolated from all pregnant mares, including those that she has lived with throughout her pregnancy, until the results of the postmortem examination are known and EHV-1 infection has been ruled out.

The placental membranes and fluids are highly infectious and should be disposed of immediately by burning or burying with lime. Your veterinarian may be able to arrange safe disposal of these membranes for you. They should be sealed within two strong intact plastic sacs.

The stable used by the mare should be thoroughly steam cleaned and disinfected before being used by another horse. In-contact pregnant mares should not be re-located and should be isolated in their small in-contact group until they either abort or produce a healthy live foal.

**Herpesvirus Vaccines**

Vaccines against EHV-1 and EHV-4 infection are available. They do not completely prevent individual horses from infection but they reduce the risk of infection, they reduce the risk of spread of infection to other horses via shedding of virus from stressed animals, and they reduce the severity of clinical signs if infection occurs.

Vaccinated horses may not show any signs of disease but may still show a rise in antibody level after infection. Unfortunately, no vaccine has been proven to protect horses from the neurological form of the disease.

**Vaccination Recommendations and Schedules**
All pregnant mares should be vaccinated and stud farms that board mares for foaling should not accept pregnant mares who have not been fully vaccinated. Individual 'virus' abortions have become unusual and abortion 'storms' are now rarely, if ever, seen in vaccinated mare populations.

The vaccine should be given according to the manufacturer's recommendations. For non-pregnant horses this is a primary course of two to three injections four to six weeks apart followed by booster vaccinations at six-month intervals. Pregnant mares are vaccinated at five, seven and nine months of pregnancy with Pneumabort K (a vaccine that specifically targets EHV-1).

Unfortunately, neither natural infection nor vaccination produces long-lasting immunity to Equid Herpesvirus infections. This reflects the nature of the virus, but experience suggests that disease incidence is significantly lower in vaccinated horse populations.

### Vaccination Benefits

The benefits of vaccination therefore include:

- Reduced risk of infection
- Reduced shedding of virus by latently infected horses
- Reduced severity of clinical signs
- Less time off exercise
- Lower cost of veterinary treatment