

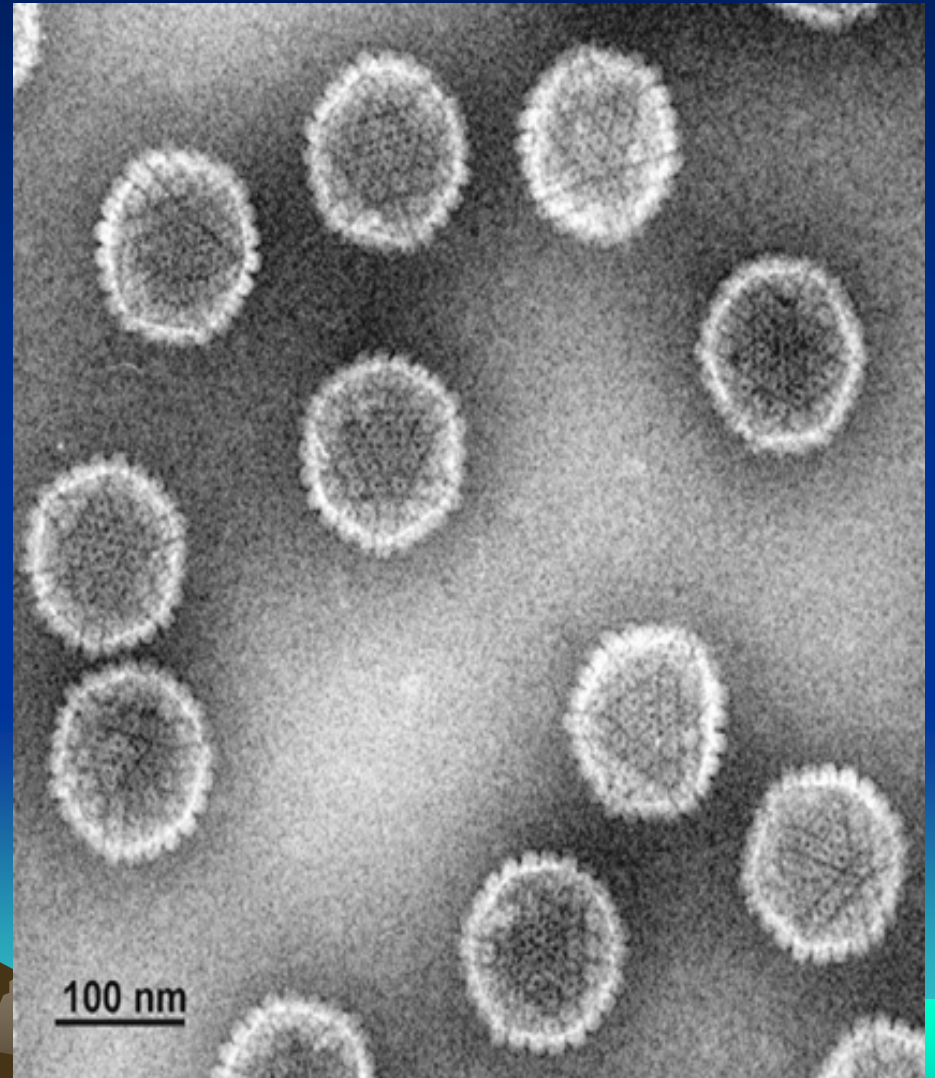
Equine Herpes Virus (EHV)

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EHV: the virus

- Double stranded DNA virus
- Infectious to equids (and possibly llamas and alpacas); highly contagious
- Not infectious to humans or other animals



EHV : Clinical Signs

- 3 Forms of Clinical Disease

- Respiratory form: most common (fever, cough \pm nasal discharge, depression, inappetence) lasting 1-7 days



- Abortion form: late term abortion in pregnant mares exposed to EHV



- Neurological form: less common, most serious (ataxia ie incoordination, weakness in hind end, poor tail tone, urinary incontinence, \pm head tilt, \pm recumbency)



EHV: Clinical signs

- Incubation period (time from exposure to first clinical signs) is 2-10 days
- Recovery is usually complete in horses with the respiratory and abortion forms of EVH
- Recovery of horses with the neurological form depends on severity of clinical signs
 - Horses with mild clinical signs may recover completely
 - Horses with moderate clinical signs may recover fully or have residual neurological defects
 - Horses with severe clinical signs (unable to rise) may die or require euthanasia.
- Recovery can take weeks to many months.

EHV

- EHV (like all herpes viruses) can result in latent infection (eg the virus survives in the nerves of the horse for the rest of its life)
- This usually causes no problem, and the horse is not contagious to others.
- In some cases, under periods of stress or illness, the latent virus may reactivate and cause respiratory viral shedding with or without clinical disease. Under these circumstances, the horse would again be contagious to other horses

EHV: the disease

- Prior to 2003, most EHV outbreaks involved self-limiting respiratory disease in young horses with occasional abortions. The neurological form was rare
- Since 2003 outbreaks of a mutated form of EHV that produces more a higher percentage of the more severe neurological disease have occurred in at least 10 states (most recently in Florida)



EHV: Treatment

- Because viral infections do not respond to antibiotics, most treatments for viral infections are symptomatic, eg to treat the clinical signs, rather than the virus itself
 - Non-steroidal anti-inflammatory drugs (Banamine, phenylbutazone, etc) to reduce fever and minimize pain
 - Intravenous fluids to prevent dehydration if horse is not drinking



EHV

- Other diseases can have similar clinical signs
 - Respiratory and Febrile Signs: Equine Influenza, Equine Viral Arteritis, Strangles and others
 - Neurological Signs: Rabies, equine protozoal myelitis (EPM), West Nile Virus infection, eastern equine encephalitis (EEE), western equine encephalitis (WEE), etc
 - Abortion (many agents)



EHV: Diagnosis

- Diagnosis is based on clinical signs and must be confirmed by laboratory testing
 - Nasal swab PCR (polymerase chain reaction) to detect the DNA of the virus; indicates active shedding of the virus
 - PCR of blood (white blood cells, eg buffy coat) to detect virus in the blood (viremia)
 - Virus isolation (eg actually growing the virus in the lab) from above specimens or from necropsy specimens



EHV: Transmission

- Virus is secreted in respiratory secretions of infected horses for up to a month; peak virus shedding is in the first week following infection, when the fever is present
- Virus is also present in fetuses aborted due to EHV and associated fluids, placenta, etc.
- Virus can spread from horse to horse by aerosol (up to 35 feet) transmission or direct (nose to nose) contact



EHV: Transmission

- Fomites (tack, buckets, clothing, grooming equipment, bedding) contaminated with the virus can also transmit the virus to other horses
- The virus can last in the environment and on contaminated surfaces for at least a week, and up to 28 days
- EHV is easily killed by most disinfectants;
 - remove manure,
 - clean with soap/detergent
 - rinse with water
 - disinfect



EHV: Prevention

- Good biosecurity and management
 - Isolate new horses from rest of the herd for 3-4 weeks; check temperatures daily
 - Do not share tack, buckets, etc with outside horses (eg at shows, meets, etc)
 - Minimize stress in animals (good nutrition, regular deworming, normal daily routines and training schedules, good vaccination program to prevent other diseases)



EHV: Prevention

- Consult with your veterinarian regarding EHV vaccine use
- Keeping temperature logs (written records of daily or twice daily temperatures) is a good way of monitoring a horse population for this disease. Horses that are infected will usually spike a fever (even if there are no other clinical signs); normal horse temperature is 99.5-100.5; fevers with EHV can range from 102-107 degrees F



EHV: Vaccination

- **Modified live and killed vaccines are available for EHV**
- **Both help minimize severity of respiratory clinical disease; this may decrease spread of the disease**
- **Killed vaccine used in pregnant mares**
- **Current vaccines do not offer much protection against neurological form of EHV**
- **These vaccines only offer protection for 3-6 months; horses that travel may need boosters several times per year**
- **Horses should be vaccinated prior to exposure; most vaccines do not offer protection until 7-10 days following vaccination, most require boosters for optimum protection**



EHV Outbreak at UCONN

- Early January, 2007, 3 horses in polo barn showed neurological signs (neck pain, head tilt, ataxia (in-coordination))
- Tufts ambulatory clinic examined horses and took samples to conduct laboratory testing for EVH and several other diseases
- Self-imposed quarantine (eg no horses entering or leaving the premises) was instituted immediately
- Tests for EVH were positive (results came 3 days later)
- Biosecurity measures were instituted at the barn to prevent spread of the disease within the premises and to horses outside UCONN.
- An official quarantine was placed on the UCONN equine facility by the CT state veterinarian

EVH Outbreak at UCONN

- At the start of the outbreak, 31/80 horses were housed inside in the 2 big barns (polo and lesson barns)
- The other horses were housed outside or at the research barns
- The infection has spread through much of the polo and lesson barns; to date 23/31 have shown clinical signs of EVH
- 5 / 23 have had obvious neurological signs
- The remaining horses have shown fever +/- cough or respiratory signs and/or depression
- All horses (including the neurological horses) are stabilized or improving; many no longer show clinical disease
- No horses have become recumbent
- No horses have died or been euthanized
- No horses housed outside of the polo and lesson barns have shown clinical signs of EHV

EVH Outbreak at UCONN: Steps taken to prevent spread of disease

- Quarantine in place: no horses in or out of the UCONN horse facility
- Horses in the polo and lesson barns do not have contact with other UCONN horses; they are restricted to specific areas
- Human traffic has been curtailed
 - Only horse barn staff and student workers specifically working at the horse barn as of January are allowed in the facility
 - Horse barn staff and students are following strict biosecurity measures to prevent spread of EHV to other UCONN horses and to horses outside UCONN, including use of footbaths, coveralls left at the horse barn, gloves, and washing and disinfection of hands, boots, and clothing. Uninfected horses are handled separately, prior to infected horses.
 - Visitors will not be allowed until the quarantine has been lifted

EVH Outbreak at UCONN: Steps taken to prevent spread of disease

- Students who are working at UCONN horse facility should not have contact with other horses until the quarantine is lifted
- Students that plan to and work or ride at other area farms should not work at the UCONN horse facility until the quarantine is lifted
- Classes and activities involving direct use of UCONN horses will be curtailed or modified until the facility has a clean bill of health and quarantine is released by the state veterinarian.



EVH at UCONN

- Quarantine can be lifted once there have been no new cases for at least 3 weeks, and affected horses have had a negative nasal swab PCR test, demonstrating that the horses are no longer contagious
- The state veterinarian will determine when these conditions have been met, and release the quarantine
- Depending on circumstances, we hope that quarantine may be lifted in early March

