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## Vaccines

Vaccines provide protection against debilitating diseases, or, if your horse does contract the disease, they often recover easier and faster if they have been previously vaccinated. Different vaccines have different protocols as to when they should be given, depending on the transmission route of the disease. Viral diseases that are transmitted by biting insects should be vaccinated for early in the spring, before the insects come back. These vaccines should generally be boosted again in the early fall, because summer in the mid-Atlantic region is so long. Diseases caused by other vectors, such as bacteria found commonly in the environment, can be vaccinated against any time during the year. It is also important to note that some vaccines have longer immunity than others do, as the antibodies produced by a vaccine decline over time.

Equine encephalomyelitis, also called sleeping sickness, comes in several varieties—Eastern (EEE), Western (WEE), and Venezuelan (VEE). It is a viral infection that affects the horse's central nervous system. Clinical signs can progress from depression and sleepiness to paralysis and death. WEE is found all over the United States; EEE is found in the eastern and southern parts of the country; and VEE is very rare, but has been seen in Mexico. Equine encephalomyelitis is a bug-borne disease transmitted primarily by mosquitoes; therefore, it is important to vaccinate early in the spring, before the bugs return for the summer. Vaccination is recommended once a year, except in endemic areas.

West Nile Virus has been reported in almost every state of the United States. It is a mosquito-borne encephalitis that affects the central nervous system. Clinical signs can range from fever to paralysis of the hind limbs to death.

Potomac Horse Fever (PHF) was originally found in Virginia and Maryland near the Potomac River, but has now been reported in many areas of the United States, as well as overseas in Europe and Australia. It is an infectious disease primarily of the gastrointestinal tract and is transmitted by aquatic insects. Most infected horses show colic, depression, appetite loss, diarrhea, and intermittent fever. Laminitis is a common secondary development. Because PHF is usually seen seasonally, from late spring to early fall, and because the disease is endemic to Northern Virginia, it is recommended that horses be vaccinated twice a year—spring and fall.

Rabies is a viral disease that progresses quickly and ends with neurologic symptoms and death. Rabies is passed from animal to animal, usually through a bite. Since horses live outdoors, they are always at risk of being bitten by a wild, and possibly rabid, animal. Clinical signs of the disease can differ widely among horses, so the disease can be difficult to diagnose early. People can easily be exposed while trying to treat a sick animal. Because rabies can be passed from horses to humans, it is especially important to vaccinate against this disease once a year.

Horses are especially sensitive to the neurotoxins produced by the bacteria that cause Tetanus, a neuromuscular disease. The disease itself causes paralysis, rigidity, and death. The bacteria are very common in the soil and generally enter the horse through deep wounds in the lower extremities (e.g., hoof punctures, joint punctures, and lower limb lacerations). Vaccination is recommended once a year, and, if it's been at least three months since the last vaccine, a booster is recommended with the occurrence of any penetrating wound.

Strangles is a disease caused by the strep equi bacteria and is extremely contagious between horses. Depression, loss of appetite, high fever, nasal discharge, and swelling of the lymph nodes in the head and neck are common signs of the disease. The bacteria can also survive for long periods in the environment. The vaccine is intranasal and is recommended once a year.

Botulism is another neurologic disease that causes loss of motor function and death. Horses may show signs of weakness, muscle tremors, stumbling, drooping eyelids, and loss of tongue and tail tone, among other symptoms. The bacteria that causes botulism is found worldwide and most commonly affects adult horses after ingesting decaying organic matter. Vaccination is recommended once a year.

Equine influenza appears all over the United States. It is an acute respiratory disease that is highly contagious between horses. Clinical signs usually show suddenly in affected horses, especially dry cough, nasal discharge, and fever. Because the disease travels easily as we trailer our horses around, and a horse shows signs of disease only several days after infection, it is important to keep vaccine immunity high. Vaccination is recommended two to four times a year, depending on circumstances.

Equine rhinopneumonitis comes in two varieties: equine herpesvirus 1 (EHV-1) and equine herpesvirus 4 (EHV-4). Initial exposure to the virus causes respiratory disease, and it is highly contagious between horses. EHV-4 generally causes respiratory disease, but EHV-1 can cause respiratory disease, paralysis, and abortion in pregnant mares. Common symptoms of the disease include fever, lethargy, loss of appetite, and nasal and ocular discharge. Young horses and stressed horses are especially vulnerable. Previously-exposed animals may not show any signs of the disease until they are in stressful situations, and then the virus becomes active and causes disease. The protection offered by the rhino vaccine does not seem to last as long as for other diseases, so vaccination is recommended two to four times a year.

Lyme disease (*Borrelia*) is an endemic tick-borne disease in our area. It can manifest as fever, lethargy, weight loss, joint pain, back pain, behavioral problems, and poor performance. There is no approved vaccine for use in horses, however, the approved canine vaccine has shown promise in horses and appears to provide protection against the disease. We have done an in-house clinical trial, have used it on our and clients horses and have found positive titer results indicating response to vaccination. Give the office a call at 540-554-2004 if you're interested in more information about this promising vaccine.

## Summary

<b>Vaccine</b>	<b>Vaccination Frequency</b>	<b>When to Give</b>
Eastern and Western Encephalitis	Once a year	Spring
West Nile Virus	Twice a year	Spring & Fall
Potomac Horse Fever	Twice a year	Spring & Fall
Rabies	Once a year	Any time
Tetanus	Once a year (plus booster if penetrating wound received)	Any time
Strangles (intranasal)	Once a year	Any time
Botulism	Once a year	Any time
Influenza	Two to four times a year	Any time
Rhinopneumonitis	Two to four times a year	Any time
Lyme	Initial series of 3, Once a year	Any time