

Immunizations: Protect Your Horse against Contagious Diseases

Few things will protect your horse from the ravages of disease as easily and effectively as immunizations. The vaccinations administered by your veterinarian to your horse place a protective barrier between the animal and a whole list of problems: tetanus, encephalomyelitis (sleeping sickness), influenza, rhinopneumonitis, rabies, strangles, and Potomac Horse Fever, to name the most common.

Vaccinations are a vital part of proper equine management. If incorporated into a program that includes regular deworming, an ample supply of clean water, a good nutrition program, and a safe environment, you and your horse will be all set to enjoy many happy, healthy, productive years together.

What to Expect

A good immunization program is essential to responsible horse ownership, but just as in humans, vaccination does not guarantee 100% protection. In some situations, immunization may decrease the severity of disease but not prevent it completely. This is due to many complicated scientific reasons, such as differences in the virulence or severity of some diseases (such as influenza).

Vaccination involves injection of bacteria or viruses that are inactivated or modified to avoid causing actual disease in the horse. Two or more doses are usually needed to initiate an adequate immune response.

Once the immunization procedure is completed, the protective antibodies in the blood stand guard against the invasion of specific diseases. Over time, however, these antibodies gradually decline. Therefore, a booster shot is needed at regular intervals. Protection against some diseases such as tetanus and rabies can be accomplished by boosting once a year. Others require more frequent intervals to provide adequate protection.

Vaccinations Needed

The specific immunizations needed by a particular horse or horses depend upon several factors: environment, age, use, exposure risk, value, geographic location, and general management. Your veterinarian can help you determine the vaccination program best suited to your horse's individual needs.

The following diseases are those most often vaccinated against. Again, your veterinarian will know what is best for your horse.

Tetanus. Sometimes called "lockjaw", tetanus is caused by toxin-producing bacteria present in the intestinal tract of many animals and found in abundance in the soil where horses live. Its spores can exist for years. The spores enter the body through wounds, lacerations, or the umbilicus of newborn foals. Therefore, although not contagious from horse to horse, tetanus poses a constant threat to horses and humans alike.

Symptoms include muscle stiffness and rigidity, flared nostrils, hypersensitivity, and the legs stiffly held in a sawhorse stance. As the disease progresses, muscles in the jaw and face stiffen, preventing the animal from eating or drinking. More than 80 percent of affected horses die.

All horse should be immunized annually against tetanus. Your veterinarian may recommend additional boosters for mares and foals. Available vaccines are inexpensive, safe, and provide good protection.

Encephalomyelitis. More commonly known as "sleeping sickness", this disease is caused by the Western Equine Encephalomyelitis (WEE) virus or the Eastern version (EEE). WEE has been noted throughout North America, while EEE appears only in the east and southeast. VEE, the Venezuelan variety, has not been seen in the United States for many years. However, a recent outbreak of VEE occurred in Mexico. Mosquitoes most often transmit sleeping sickness, after the insects have acquired the virus from birds and rodents. Humans also are susceptible when bitten by an infected mosquito, but direct horse-to-horse or horse-to-human transmission is very rare.

Symptoms vary widely, but all result from the degeneration of the brain. Early signs include fever, depression, and appetitive loss. Later, a horse might stagger when it walks, and paralysis develops in later stages. About 50 percent of horses infected with WEE die, and the death rate is 70 to 90 percent of animals infected with EEE or VEE.

All horses need an EEE and WEE vaccine at least annually. Pregnant mares and foals may require additional vaccinations. The best time to vaccinate is spring, before the mosquitoes become active. In the South and West, some veterinarians choose to add a booster shot in the fall to ensure extra protection all year-round.

Vaccinations needed (continued)

Influenza. This is one of the most common respiratory diseases in the horse. Highly contagious, the virus can be transmitted by aerosol from horse to horse over distances as far as 30 yards, for example, by snorting or coughing.

Signs to watch for are similar to those in human with a cold, i.e., dry cough, nasal discharge, fever, depression, and loss of appetite. With proper care, most horses recover in about 10 days. Some, however, may show symptoms for weeks, especially if put back to work too soon. Influenza is not only expensive to treat, but results in a lot of “down time” and indirect financial loss, not to mention discomfort to your horse.

Unfortunately, influenza viruses constantly change in an effort to bypass the horse’s immune defense. Therefore, duration of protection is short-lived and revaccination is recommended every two to four months.

Not all horses need influenza vaccination. However, animals that travel or are exposed to other horses should be regularly immunized against influenza. Follow your veterinarian’s advice as to whether your horse needs influenza vaccine.

Rhinopneumonitis. Two distinct viruses, equine herpes virus type 1 (EHV-1) and equine herpes virus type 4 (EHV-4), cause two different diseases, both of which are known as rhinopneumonitis. Both cause respiratory tract problems, and EHV-1 may also cause abortion, foal death, and paralysis. Infected horses may be feverish and lethargic, and may lose appetite and experience nasal discharge and a cough. Young horses suffer most from respiratory tract infections and may develop pneumonia secondary to EHV-1.

Rhinopneumonitis is spread by aerosol and by direct contact with secretions, utensils, or drinking water. Virus may be present but unapparent in carrier animals.

All pregnant mares must be immunized. Foal, weanlings, yearlings, and your horses under stress should be vaccinated.

Immune protection is short. Therefore, pregnant mares are vaccinated at least during the 5th, 7th, and 9th months of gestation, and youngsters at high risk need a booster at least every three months.

Other Disease Threats. Several other diseases are common, although the need for vaccination against them is a highly individual one. Rely on your veterinarian to guide you.

Other diseases include:

Strangles. A highly contagious and dangerous disease. There may be some side effects associated with vaccination; therefore, it is important to discuss the risks versus benefits of vaccination with your veterinarian.

Rabies. A frightening disease, which is more common in some areas than others. Horses are infected infrequently, but death always occurs. Rabies can be transmitted from horses to humans.

Botulism. Known as “shaker foal syndrome” in young horses, this disease can be serious. Botulism in adult horses, “forage poisoning”, also can be fatal. Vaccines are not available for all types of botulism, but pregnant mares can be vaccinated in endemic areas.

Equine viral arteritis (EVA). A complicated disease, which can result in some breeding restrictions and export problems. Follow your veterinarian’s recommendations.

Potomac Horse Fever. A seasonal problem with geographic factors. One third of affected horses die.

To Summarize

For primary immunization, an initial vaccination is required, followed by a repeat dose in 3-4 weeks. The following is a handy reference guide for scheduling your horse’s immunizations:

- **Tetanus:** All horses. Foals at 2-4 months. Annually thereafter. Brood mares at 4-6 weeks before foaling.
- **Encephalomyelitis:** All horses. Foals at 2-4 months. Annually in spring thereafter. Brood mares at 4-6 weeks before foaling.
- **Influenza:** Most horses. Foals at 3-6 months, then every 3 months. Traveling horses every 3 months. Brood mares biannually, plus booster 4-6 weeks pre-foaling.
- **Rhinopneumonitis:** Foals at 2-4 months and younger horses in training. Repeat at 2-3 month intervals. All brood mares at least during 5th, 7th, and 9th months of gestation.
- **Rabies:** Foals at 2-4 months. Annually thereafter.
- **Strangles:** Foals at 8-12 weeks. Biannually for high-risk horses. Brood mares biannually with one dose 4-6 weeks pre-foaling.
- **Potomac Horse Fever:** Foals at 2-4 months. Biannually for older horses. Brood mares biannually with one dose at 4-6 weeks pre-foaling.

Many combination vaccinations are available. Please check with your veterinarian for the best protocol for your horse. Appropriate vaccinations are the best and most cost-effective weapon you have against common infectious diseases of the horse. A program designed with the help and advice of your veterinarian will keep your horses and you happy and healthy for many years to come.

AAEP GUIDELINES FOR VACCINATION OF HORSES

The schedule below is a suggested vaccination schedule provided by the American Association of Equine Practitioners, and is based on generally accepted veterinary practices. Infectious disease control programs in conjunction with vaccination are important in maximizing the health, productivity and performance of your horse. Your veterinarian can help design a health management program to reduce exposure to infectious disease agents in your horse's environment and lessen the incidence of illness. Disease control programs should be tailored to your individual needs with consideration given to ages, types, activities, and number of horses in your program. *You should consult with your veterinarian regarding the specific needs of your horse.*

Disease/Vaccine	Foals/Weanlings	Yearlings	Performance Horses	Pleasure Horses	Broodmares	Comments
West Nile Virus	First dose: 3 – 4 months. Second dose: 1 month later (plus 3 rd dose at 6 months in endemic areas).	Annual booster, prior to expected risk. Vaccinate semi-annually or more frequently (every 4 months), depending on risk.	Annual booster, prior to expected risk. Vaccinate semi-annually or more frequently (every 4 months), depending on risk.	Annual booster, prior to expected risk. Vaccinate semi-annually or more frequently (every 4 months), depending on risk.	Annual, 4-6 weeks prepartum.	Annual booster is after primary series. In endemic areas, booster as required or warranted due to local conditions conducive to disease risk. Vaccinate semi-annually or more frequently (every 4 months), depending on risk.
Encephalomyelitis (EEE, WWW, VEE)	EEE: (in high-risk areas) First dose: 3-4 months. Second dose: 4-5 months. Third dose: 5-6 months. WWW, EEE (in low-risk areas) and VEE: From non-vaccinated mare: First dose: 3-4 months. Second dose: 4-5 months. Third dose: 5-6 months. From vaccinated mare: First dose: 6 months. Second dose: 7 months. Third dose: 8 months.	Annual, Spring. Annual, Spring.	Annual, Spring. Annual, Spring.	Annual, Spring. Annual, Spring.	Annual, 4-6 weeks prepartum. Annual, 4-6 weeks prepartum.	In endemic areas, booster EEE and WEE every 6 months; VEE only needed when threat of exposure; VEE may only be available as combination vaccine with EEE and WEE.
Tetanus Toxoid	From non-vaccinated mare: First dose: 3-4 months. Second dose: 4-5 months. From vaccinated mare: First dose: 6 months. Second dose: 7 months. Third dose: 8-9 months.	Annual	Annual	Annual	Annual, 4-6 weeks prepartum.	Booster at time of penetrating injury or surgery if last dose not administered within 6 months.

Disease/Vaccine	Foals/Weanlings	Yearlings	Performance Horses	Pleasure Horses	Broodmares	Comments
Influenza	Inactivated injectable: From non-vaccinated mare: First dose: 6 months. Second dose: 7 months. Third dose: 8 months. Then at 3 month intervals. From vaccinated mare: First dose: 9 months. Second dose: 10 months. Third dose: 11-12 months. Then at 3 month intervals. <hr/> Intranasal modified live virus: First dose: 11 months: has been safely administered to foals less than 11 months.	Every 3-4 months. <hr/> Every 6 months.	Every 3-4 months. <hr/> Every 6 months.	Annual with added boosters prior to likely exposure. <hr/> Annual before breeding.	At least semi-annual, with 1 booster 4-6 weeks prepartum. <hr/> Annual before breeding.	A series of at least 3 doses is recommended for primary immunization of foals. Not recommended for pregnant mares until data available. Use inactivated vaccine for prepartum booster. If first dose is administered to foals less than 11 months of age, administer 2 nd dose at or after 11 months.
Rhinopneumonitis (EHV-1 & EHV-4)	First dose: 4-6 months Second dose: 5-7 months. Third dose: 6-8 months. Then at 3 month intervals.	Booster every 3-4 months up to annually.	Booster every 3-4 months up to annually.	Optional: semi-annual if elected	Fifth, seventh & ninth month of gestation. (Inactivated EHV-1 vaccine); optional dose at third month of gestation.	Vaccination of mares before breeding and 4-6 weeks prepartum is suggested. Breeding stallions should be vaccinated before the breeding season and semi-annually.
Strangles	Injectable: First dose: 4-6 months. Second dose: 5-7 months. Third dose: 7-8 months (depending on the product used). Fourth dose: 12 months. Intranasal: First dose: 6-9 months. Second dose: 3 weeks later.	Semi-annual.	Optional: semi-annual if risk is high.	Optional: semi-annual if risk is high.	Semi-annual with 1 dose of inactivated M-protein vaccine 4-6 weeks prepartum.	Vaccines containing M-protein extract may be less reactive than whole-cell vaccines. Use when endemic conditions exist or risk is high. Foals as young as 6 weeks of age may safely receive the intranasal product. A third dose should be administered 2-4 weeks prior to weaning.
Rabies	Foals born to non-vaccinated mares: First dose: 3-4 months. Second dose: 12 months. Foals born to vaccinated mares: First dose: 6 months. Second dose: 7 months. Third dose: 12 months.	Annual	Annual	Annual	Annual, before breeding.	Vaccination recommended in endemic areas. Do not use modified-live-virus vaccines in horses.

Disease/Vaccine	Foals/Weanlings	Yearlings	Performance Horses	Pleasure Horses	Broodmares	Comments
Potomac Horse Fever	First dose: 5-6 months. Second dose: 6-7 months.	Semi-annual	Semi-annual	Semi-annual	Semi-annual with 1 dose 4-6 weeks prepartum.	Booster during May and June in endemic areas.
Botulism	Foal from vaccinated mare: 3 dose series of toxoid at 3- day intervals starting at 2-3 months of age. Foal from non-vaccinated mare: see comments.	Consult your veterinarian.	Consult your veterinarian.	Consult your veterinarian.	Initial 3-dose series at 30-day intervals with last dose 4-6 weeks prepartum. Annually thereafter, 4-6 weeks prepartum.	Only in endemic areas. A third dose administered 4-6 weeks after the second dose may improve the response of foals to primary immunization. Foal from non-vaccinated mare may benefit from: 1. Toxoid at 2,4 and 8 weeks of age. 2. Transfusion of plasma from vaccinated horse. 3. Antitoxin. Efficacy needs further study.
Equine Viral Arteritis	Intact colts intended to be breeding stallions: One dose at 6-12 months of age.	Annual for colts intended to be breeding stallions.	Annual for colts intended to be breeding stallions.	Annual for colts intended to be breeding.	Annual for seronegative open mares before breeding to carrier stallions; isolate mares for 21 days after breeding to carrier stallion.	Annual for breeding stallions and teasers, 28 days before start of breeding season; virus may be shed in semen for up to 21 days. Vaccinated mares do not develop clinical signs even though they become transiently infected and may shed virus for a short time.
Rotavirus A	Little value to vaccinate foal because insufficient time to develop antibodies to protect during susceptible age.	Not applicable	Not applicable	Not applicable	Vaccinate mares at 8,9 and 10 months of gestation, each pregnancy. Passive transfer of colostral antibodies aid in prevention of rotaviral diarrhea in foals.	Check concentrations of immunoglobulins in foal to be assured that there is no failure of passive transfer.

*As with administration of all medications, the label and the product insert should be read before administration of all vaccines.

Schedules for stallions should be consistent with the vaccination program of the adult horse population on the farm and modified according to risk.

EEE= Eastern Equine Encephalomyelitis; WWW= Western Equine Encephalomyelitis; VEE= Venezuelan Equine Encephalomyelitis; EHV- 1= Equine Herpes Virus Type 1.