

# Equine Health Solutions

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## **Foal Vaccination Update**

Vaccination is a key component of any horse health program. Research on the horse's immune system over the last few years has resulted in several new foal vaccination recommendations that all horse owners should be aware of. Two of the biggest developments concern the age of the foal when they receive their primary vaccination series and the number of vaccinations in those series necessary to provide *solid immunity*. Because the mare's protective antibodies do not cross her placenta during gestation, foals are born essentially without protection against disease. They rely, during the first few months of their life, totally on the antibodies they absorb from the mare's colostrum (first milk). Recent research has proven that foals, who have nursed and received adequate amounts of antibodies from the mare, possess adequate antibody levels to protect them until they are approximately six months of age. In addition, the research demonstrated that the maternal antibodies present in the foal inactivated many of the vaccines given to them during the first few months of life. Foals that received good quality colostrum were not only unresponsive to the vaccine, but the owner would be wasting their time and money while giving themselves a false sense of security. Therefore, foals, whose mothers are vaccinated four to six weeks prior to foaling, and are getting adequate amounts of colostrum, should not be vaccinated against most diseases until they are around 6 months of age. Because of the uncertainty of the quality of colostrum received, foals born to non-vaccinated mares or mares with unknown vaccination history, should receive their initial vaccination series like we traditionally have done starting at 3 to 4 months of age.

Recent studies have also shown that foals receiving the initial primary two dose vaccination series recommended by the manufacturer's label **may not be adequately immunized** and should instead receive a primary series of three doses of vaccine at varying intervals. Remember that geographic location, age, use, and anticipated exposure vary from location to location and so a "standard" vaccination program is impossible. Therefore, it is important that you visit with your local equine veterinarian about specific vaccination recommendations in your area of the country. This may all seem confusing, so following are the recent major disease recommendations published by **The American Association of Equine Practitioners(AAEP)**.

The AVMA defines core vaccinations as those "that protect from diseases that are endemic to a region, those with potential public health significance, required by law, virulent/highly infectious, and/or those posing a risk of severe disease. Core vaccines have clearly demonstrated efficacy and safety, and thus exhibit a high enough level of patient benefit and low enough level of risk to justify their use in the majority of patients." Core vaccines are Eastern/Western Encephalomyelitis, Tetanus, West Nile, and Rabies. High Risk vaccines are Equine Rhinopneumonitis and Influenza.

In the United States, **Eastern, Western, or Venezuela Equine Encephalomyelitis virus** can cause equine encephalitis (sleeping sickness). The pregnant mare should be boosted 4-6 weeks prior to foaling. Starting at 6 months of age, their foal should then receive the primary 3 dose sleeping sickness vaccination series at 4-week intervals. The foal born to a mare that was not boosted or unknown history, should begin their primary series at 3 to 4 months of age. Annual spring booster vaccination is recommended for all horses. Horses in the southern portion of the country, where the disease is prevalent year round, should receive a booster vaccination at six-month intervals.

**Tetanus** (lockjaw) is an often-fatal disease caused by the bacterium *Clostridium tetani*. The organism lives in the intestinal tract of animals and is abundant in the soil. Spores enter the horse's body through wounds, but can also enter the umbilical cord of newborn foals. The annual booster of tetanus toxoid for pregnant mares should be administered 4 to 6 weeks prior to foaling to protect the mare if she sustains foaling-induced trauma and to booster the antibody levels in her colostrum. Her foal should receive a primary series of 3 doses of tetanus toxoid at 4-week intervals beginning at 6 months of age. Foals born to a non-vaccinated mare should receive the initial 3-dose series at 4-week intervals starting at 3 to 4 months of age. Regardless of the age when they received their primary 3-shot series, all horses should receive an annual tetanus toxoid booster.

**West Nile** virus (WNV) is the leading cause of arbovirus encephalitis in horses and humans in the United States. Horses represent 96.9% of all non-human mammalian cases of WNV disease. The virus is transmitted from avian reservoir hosts by mosquitoes to horses, humans and a number of other mammals. West Nile virus is transmitted by many different mosquito species and this varies geographically. Horses and humans are considered to be dead-end hosts for WNV; the virus is not directly contagious from horse to horse or horse to human. Foals of vaccinated mares: administer a primary 3-dose series beginning at 4 to 6 months of age. A second dose is recommended to be administered 4 to 6 weeks after the first dose. The third dose should be administered at 10 to 12 months of age prior to the onset of the next mosquito season. Foals of unvaccinated mares should receive a primary series of 3 doses initiated at 3 - 4 months of age; the second dose administered 30-days after the first and the third administered 60-days after the second dose. If the primary series is initiated during the mosquito vector season, an interval of 3-4 weeks between the second and third doses is preferable to the above described interval of 8 weeks. Revaccinate annually prior to mosquito season thereafter.

**Rabies** is a fatal disease with considerable public health significance. Exposure occurs through the bite of an infected or "rabid" animal such as a raccoon, fox, skunk, or bat. Bites occur more often on the muzzle, face, and lower legs. The virus migrates via nerves to the brain where it initiates rapid, progressive, invariably fatal encephalitis. The annual rabies booster for the mare should be administered prior to breeding, or 4 to 6 weeks prior to foaling, to a pregnant mare. Her foal should be given a primary series of 3 doses, with the first dose of vaccine administered no earlier than 6 months of age. The second dose should be given 4 to 6 weeks later. The third dose should be given at 10 to 12 months of age. Revaccinate annually thereafter. Foals of unvaccinated mares also are administered a primary series of 3 doses. The first dose of vaccine should be administered at 3 to 4 months of age; the second dose should be given 4 weeks later. The third dose should be given at 10 to 12 months of age. Revaccinate annually thereafter.

**Equine Influenza** (Flu) and **Equine Herpes virus** (Rhino) are viruses that both cause respiratory disease that varies in severity from mild to severe and are characterized by fever, lethargy, loss of appetite, nasal discharge and cough. Both are highly contagious and a major problem in young horses, as well as horses being shown or raced. For influenza prevention, pregnant mares should be boosted 4 to 6 weeks before foaling. A foal born to a vaccinated mare that is kept isolated from exposure to horses from other premises, should delay the primary influenza vaccination series until the foal is 9 months of age and the vaccination should consist of 3 doses at 4-week intervals. Primary vaccination series of a foal born to a non-vaccinated mare should begin when the foal is 6 months of age. Subsequent vaccination should occur at 3 to 12 month intervals, based on the horse's risk of acquiring infection. For your specific horse, it's always a good idea to follow your local veterinarians' recommendations. In the case of Herpes virus, colostral antibodies do not last as long, so the foal should receive the Rhinopneumonitis EHV-1/EHV-4 vaccine starting when the foal is 4 to 6 months old; this is another 3-dose series giving the second dose 4-6 weeks after the first, and the third at 10-12 months of age. Immunity following vaccination is short-lived, so it is recommended that foals, performance, and show horses at high risk, should be vaccinated at 3 to 4 month intervals.

Appropriate vaccinations are the best and most cost-effective weapon you have against common infectious diseases of your horse. But remember that even the best vaccination program may not prevent all disease. The help and advice of your local equine veterinarian is important in determining an optimal vaccination program to fit your horse's needs. If you are administering the immunizations yourself, your vet can explain the proper way to store and handle the vaccines correctly in order to maximize their effectiveness and avoid any problems. Remember, their health depends on you!

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