Although it may seem that spring is still far away, the crocuses beginning to pop up in my garden assure me otherwise. With the arrival of spring, many horse owners start thinking about getting their horse's vaccinations updated. I cannot tell you how many times I've heard an owner say "Just give him whatever he needs, Doc." So which vaccines does your horse need?

The American Association of Equine Practitioners (AAEP) has classified equine vaccines into two categories, core vaccines and optional vaccines. Core vaccines are ones that are recommended for every horse regardless of his lifestyle or usage. Optional vaccines are given to horses at higher risk for that particular disease based on their lifestyle as determined by the veterinarian and owner. Core vaccines are comprised of Eastern & Western Equine Encephalomyelitis, West Nile Virus, Rabies, and Tetanus. The AAEP defines core vaccines 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." Optional vaccines include Strangles, Botulism, Potomac Horse Fever, and Equine Influenza/Herpes Virus (Rhinopneumonitis).

Eastern & Western Equine Encephalomyelitis (EEE & WEE) are viral diseases of the central nervous system that are transmitted by mosquitoes. They cause severe neurologic dysfunction including, but not limited to, lethargy, head pressing, recumbency, coma, and seizures. There is no treatment for these diseases, and they are generally fatal within a few days. These diseases have a greater than 95% fatality rate. The vaccination is very effective although its protection begins to wane after approximately six months. Therefore, if you vaccinate early in the year (before mid-May) or there is a very warm fall with an extended mosquito season, it is recommended that your horse receive a booster vaccine in the late fall (late October to early November).

West Nile Virus is also a viral disease that affects the central nervous system, but it is generally less severe than either EEE or WEE. Signs include lethargy, weakness, and fine muscle tremors of the head, neck, and shoulder area. Severely affected horses may become recumbent (down). Supportive care can be effective in nursing a horse through the disease, but horses that become recumbent rarely survive. Horses that remain standing have an approximately 75% chance of survival, but recumbency decreases the survival rate to less than 30%. As with EEE & WEE, the vaccine is very effective, but protection begins to wane after six months. Re-vaccination is recommended on the same schedule as EEE & WEE.

Rabies is another viral disease that affects the central nervous system of horses. Additionally, it can also infect all other mammals including humans. As opposed to EEE, WEE, and West Nile which cannot be transmitted from horse to horse or horse to human, rabies is transmissible via a bite from an infected animal. Signs of rabies can vary dramatically from case to case. Aggression, self-mutilation, seizures, lethargy, coma, and hypersensitivity to sound have all been reported. Rabies is universally fatal. Horses that are showing signs of rabies need to be reported to the state department veterinarian due to the human health risk. Vaccination against rabies is very effective and needs to be repeated yearly.

Tetanus is a bacterial disease caused when spores of the tetanus bacterium (*Clostridium tetani*) gain access to the horse's tissues through an open wound, most commonly a puncture wound. Once the spores enter, they "hatch" into the bacteria and start producing tetanus toxin. The toxin causes spastic (stiff) paralysis. The tetanus bacterium is found in the soil and is a risk to all horses. Affected horses adopt a very stiff posture and a stilted gait. In addition, they are hypersensitive to sound, movement, and light. Although treatment is possible with antibiotics and supportive care, many affected horses die. The tetanus vaccine is extremely effective. Routine vaccination is recommended once yearly with a booster given at the time of a penetrating injury or surgery.

Strangles is a highly contagious bacterial respiratory disease of horses caused by *Streptococcus equi*. It causes upper respiratory disease in addition to the hallmark abscessation of the submandibular lymph nodes. Lymph nodes in other areas of the body can also be affected, a complication called "bastard Strangles." Although Strangles is rarely fatal, it is a cause of significant suffering for affected horses. Signs include copious nasal discharge, fever, difficulty breathing, inappetance, and swelling and abcessation of the submandibular lymph nodes. Treatment includes lancing of the abscesses and possible antibiotic treatment. The vaccine is not 100% protective against Strangles, but vaccinated horses tend to have more mild signs if they do contract the disease. Horses should receive the Strangles vaccine if they reside on a property with a previous history of Strangles, travel extensively, or are exposed to horses from the Amish community.

Botulism is a bacterial disease caused by the anaerobic spore-forming bacterium *Clostridium botulinum*. Botulism causes flaccid (weak) paralysis of affected horses. Signs include inability to swallow, poor anal tone, recumbency, and difficulty breathing. Botulism is a severe disease that is extremely difficult to treat in adult horses. Supportive care and administration of antitoxin can be effective if the horse remains standing. However, horses that become recumbent rarely survive. Horses can contract botulism from a contaminated wound, consuming feed contaminated with animal carcasses (most usually mice) or decaying plant matter, or consuming improperly cured hay, haylage, or silage. Horses that are fed from round bales are at particular risk of botulism due to the way the bales are produced and stored. Therefore, it is recommended that all horses eating from round bales, haylage, or silage be vaccinated for botulism. The vaccine is very effective and should be administered yearly.

Potomac Horse Fever (PHF) is a disease caused by *Neorickettsia risticii*. It is most common in the eastern states but has been documented elsewhere. PHF most commonly occurs in late spring to early fall with most cases concentrated in July, August, and September. Signs may include fever, inappetance, diarrhea, colic, and laminitis. The vaccine against PHF is only partially protective against the disease, but vaccinated horses appear to be less severely affected if they do become ill. This lack of efficacy may be due to variation in the strains of organism in different areas or other unknown factors. Vaccination against PHF is recommended if cases have been seen in area in prior years.

Equine Influenza and Equine Herpes Virus (Rhinopneumonitis) are both viral respiratory diseases that mainly affect young horses. Signs of both diseases include fever, inappetance, nasal discharge, lethargy, and cough. In addition, Equine Herpes Virus can also cause abortion in pregnant mares and neurologic disease in affected horses. Both diseases are highly contagious and spread by close contact between horses. Combination and separate vaccines are available for each of these diseases however they are not 100% protective. Frequent vaccination can decrease the severity of the diseases and may reduce the spread during an outbreak. If a killed vaccine (the most common type) is used, re-vaccination is recommended at two to three month intervals. Horses should be vaccinated if they are young (less than 5 years old), travel, are exposed to new horses or horses that travel extensively, are pregnant, or come in contact with pregnant mares.

When deciding which vaccines to have administered to your horse, always discuss his individual risk factors with your veterinarian. As they say, "An ounce of prevention is worth a pound of cure." It is usually easier and less expensive to prevent a disease than treat it.

Michelle Egli, DVM
Delmarva Equine Clinic