

Vaccines

Annual Vaccinations *By Joyce Harman*

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The vaccine issue is a complex one. There is not one perfect answer as to whether to vaccinate, or what to use. It is clear that annual vaccines can have negative effects on our animals, yet many people board their horses in barns where they are required to vaccinate. This lengthy article covers some of the latest thoughts about vaccinating, the use of titers and alternatives to regular vaccination.

Each spring we begin thinking about vaccinations. The vaccine issue is actually a complex one and needs the active participation of the owner to help make the best decisions for the horse. The days of just vaccinating all horses with the same protocol should be gone, but are part of the current reality of many boarding establishments and veterinary practices.

Definitions

Generically the process of protecting against an infectious disease by "priming" the immune system with material, the immunogen, designed to stimulate an immune response to the infectious agent is known as immunization ([www. answers.com](http://www.answers.com)). Vaccination is used when the immunogen is itself a living infectious agent, normally either a closely related bacterial species (as with smallpox and cowpox), or by using a strain weakened by some process. Technically immunization is different from vaccination in that vaccination uses a viable infecting agent (i.e., it can make the individual sick, ex: a live virus vaccine) while immunization does not use a viable agent (killed virus vaccine, or even just part of a virus-recombinant vaccine). In everyday horse language, we use the words interchangeably. Either form of priming the immune system can produce a measurable "antibody" in the blood. A test for how much of this antibody is present is called a titer or serologic test. The measure of a titer response in the blood is one indication of how well a horse might be protected against a disease. Little research has been done to determine the exact amount of a titer needed. However, most vaccines are sold based on the fact that they produce a measurable titer in the blood, rather than that they are proven to protect a horse against an actual disease challenge.

Titers are a useful indicator, but not the perfect answer to determining the protection status of a horse. The reason they are not perfect is that the immune system is very complex and there are many more places inside the body where the vaccine can protect other than in the blood. Cells inside the body can also have immune responses, called cellular immunity. We cannot measure this from the outside easily. So, it is possible to have a horse with a low blood titer, that is actually well protected. Some university vaccine researchers feel that if any titer is present at all, there will be protection at the cellular level. Also they feel that even animals with no titer may be well protected. Titers are, however, the main way available to the horse owner and veterinarian to get an indication of how well your horse could be protected.

Many veterinarians refuse to check titers thinking they are invalid, and many more just do not know how to interpret the results or even to which laboratories to send the samples. The American Veterinary Medical Association (AVMA, www.avma.org, type in vaccine) does acknowledge that titers can be a measure to determine a need to for revaccination, but does

caution that the data is unclear. The best way to approach titers is to use the results as a guide and take all the factors discussed below into account.

Annual vaccinations, official positions For years we have been vaccinating our animals on a yearly or twice a year basis, however the actual need for doing this has not been documented. I am enclosing a paragraph from one of the major small animal veterinary textbooks that quotes research from several years ago: "A practice that was started many years ago and that lacks scientific validity or verification is annual revaccinations. Almost without exception there is no immunologic requirement for annual revaccination. Immunity to viruses persists for years or for the life of the animal. Successful vaccination to most bacterial pathogens produces an immunologic memory that remains for years, allowing an animal to develop a protective anamnestic (secondary) response when exposed to virulent organisms. Only the immune response to toxins requires boosters (e.g., tetanus toxin booster, in humans is recommended every 7 to 10 years), and no toxin vaccines are currently used for dogs and cats (they are used in horses-tetanus and botulism, ed comment). Furthermore, revaccination with most viral vaccines fails to stimulate an anamnestic (secondary) response as a result of interference by existing antibody (similar to maternal antibody interference). The practice of annual vaccination in our opinion should be considered of questionable efficacy unless it is used as a mechanism to provide an annual physical examination or is required by law (i.e., certain states require annual vaccination for rabies)." Current Veterinary Therapy XI - Small Animals, p 205.

The AVMA web site contains several documents with current information about new thoughts on small animal vaccination. There is little research on horses, so the issue is ignored by the profession and no guidance is given for the equine practitioner. Here are some quotes from the AVMA web site that shows the lack of research about the topic and asks for individualization of vaccine protocols:

1. "...When designing a vaccination program, veterinarians consider the pet's lifestyle, related disease risks, and the characteristics of available vaccines."
2. "Q: How often should pets be revaccinated? A: This is a subject of ongoing research and healthy debate. No one truly knows how long protection from various vaccines lasts (*italics added by JCH*). Veterinarians have traditionally vaccinated annually; however, they are now learning that some vaccines induce immunity that lasts less than one year, whereas others may induce immunity that lasts well beyond one year. The AVMA recommends that veterinarians customize vaccination programs to the needs of their patients. More than one vaccination program may be effective."
3. "Q: How does my pet's lifestyle affect its vaccination program? A: Some pets are homebodies and have minimal opportunity for exposure to infectious disease, whereas others have a great deal of exposure to other pets and/or wildlife by virtue of their activities. Still other pets live in geographic areas that place them at greater risk for contracting some infectious diseases. Differences in lifestyle illustrate the importance of customizing a vaccination program to individual patients."
4. "Q: Are there risks? A: Although most pets respond well to vaccines, like any medical procedure vaccination carries some risk. The most common adverse responses are mild and short-term, including fever, sluggishness, and reduced appetite. Pets may also experience

temporary pain or subtle swelling at the site of vaccination. Although most adverse responses will resolve within a day or two, excessive pain, swelling, or listlessness should be discussed with your veterinarian. Rarely, serious adverse responses occur. Contact your veterinarian immediately if your pet has repeated vomiting or diarrhea, whole body itching, difficulty breathing, collapse, or swelling of the face or legs. These signs may indicate an allergic reaction. In very rare instances death can occur. Visit with your veterinarian about the latest information on vaccine safety, including rare adverse responses that may develop weeks or months after vaccination."

These next quotes are from a paper published on the AVMA web site: "...Dr. Ford was on the American Animal Hospital Association Canine Vaccine Task Force, which released its vaccination guidelines in spring 2003. These guidelines recommended three-year booster intervals in adult dogs for distemper virus, parvovirus, adenovirus-2, and parainfluenza virus.... "...Many veterinarians have responded to the three-year guidelines with resistance. "It was truly a bitter pill, and we did not take this well," said Dr. Ford, who is also a Brigadier General in the U.S. Air Force Reserve. "At issue here is that the bitterness of the pill prevails. Despite growing acceptance of the guidelines, there is still considerable resistance...." "...Veterinarians are resistant because, when one examines the services that veterinarians provide in the United States, Europe, and the United Kingdom, vaccination is at the top of the list for both cats and dogs..."

"...COBTA (an AVMA vaccine advisory group) concluded that evidence shows that some vaccines provide immunity beyond one year. While annual vaccinations have been highly successful in curbing disease, the one-year revaccination frequency recommendation found on many vaccine labels is based on historical precedent, not scientific data. Even in cases where scientific data were submitted to qualify a label claim, the data generated generally represent a minimum duration of immunity and don't resolve the question about average or maximum duration of immunity." (italics added by JCH). What do these quotes mean to you? It is wise to give some thought to your vaccination schedule, and to not just vaccinate blindly for every possible disease. For some it may be time to make a change in your schedule. Vaccines are stressful to the immune system. Vaccines should not be given to animals that are in any way ill, whether the problem is a skin condition or a serious internal disease. The package insert in vaccines states that only healthy animals should be vaccinated. Remember that people used to be vaccinated only a few times as young children, then as adults only for flu or if the person is going to a foreign country. Now the current vaccine program for children has gotten as excessive as it has for the horses.

Vaccination must be done at the level of comfort of the animal's caretaker. If you feel uncomfortable changing the vaccination program, keep examining the issues. More evidence is surfacing that over-vaccination is a problem and should not be done, but until sound research tells us exactly what to do, the decisions are up to the individual.

Holistic veterinarians are trained to look for subtle signs of disease and have more tools in their medicine chest to treat these chronic problems. Many holistic vets, including myself, find a variety of illnesses related to over-vaccination. Some of these are serious and life-threatening, while others are annoying. Reactions can occur up to about two months after a vaccination. Horses often become more susceptible to other diseases if their immune system is in poor

shape after excessive vaccination. So, it is best to look at the vaccination issue with the information below and make decisions based on thinking rather than a rote program. Annual vaccinations, practical applications The key to a successful program is to examine each disease and vaccination based on the risk of the disease versus the risk and benefit of the vaccine. For example, flu in the horse is not life-threatening, is easy to treat with alternative medicine and can be treated fairly well with conventional medicine (remember, it is a viral disease and antibiotics do not treat viruses). The injectable flu vaccine was proven to not work in a large study and in my opinion seems to be one of the most stressful vaccines for the horse. The intranasal vaccine does work, and should last for a long time, though there is no research to support its effects past 6 months to one year. Since the injectable vaccine is fairly ineffective, stressful to the horse (high risk) and disease is not serious (unless you just have to make that show!), the benefit of the vaccine is very low.

Rabies is the opposite in all ways. The disease is life-threatening and very serious and the vaccine is highly effective. However, since the vaccine is so effective, only a few shots in the lifetime of the horse will be protective for most horses. Extensive research in humans has shown that fairly low titers are very protective. Most horses in my practice have titers thousands of times higher than the protective level needed in humans. And, though no research indicates exactly what titer is needed by an equine, it is safe to say that the high titers seen in horses should be protective.

Potomac Horse Fever vaccines fall somewhere in the middle when analyzed. The vaccine has not been shown to have complete protection. If it were extremely effective, it would have eliminated the disease, since currently it is safe to say that most horses living along the Potomac River are vaccinated, yet the disease appears each year and horses still can die from it. However, if your barn is along a major river basin (high risk), and cases are seen each year in your immediate area, vaccination may be a wise thing to try, recognizing that it is not a perfect vaccine. However, if you are not along a river basin (low risk) and the veterinary practices in your immediate area do not see many cases, then it is a vaccine to skip. The vaccine does not appear to be as hard on the horses as some others. Titers are available and often are seen at a protective level without constant revaccination.

The Rhinopneumonitis vaccine is another vaccine where the disease is a low-risk upper respiratory infection. The vaccine is poorly effective; as such many vets recommend it every couple of months. It does seem to cause many side effects (high risk for the horse). The viral infection is easy to treat with alternative medicines such as homeopathy and Chinese herbs, but often is so mild it requires little treatment. The dangerous neurological form of the disease is not covered by any vaccine. Horses vaccinated against the respiratory form may actually be more susceptible to the neurological form if it passes through a barn. The abortion form of the disease does have a vaccine, but it needs to be given every few months, and is probably not needed in mares that foal at home rather than at a large facility with lots of chance for exposure. Titers can be taken, though they tend to be fairly low.

Tetanus is a high-risk disease with no titer test available. It also seems to be a very safe vaccine (low risk). In the early 1990s when a titer test was available, the vaccine appeared to be very effective with high titers for long periods of time without revaccination. This may be a vaccine to keep in the program, but it is also probably one that could be done every few years instead of yearly.

Strangles is a highly contagious disease, but actually is not usually life-threatening if the animal is cared for well, and is fairly easy to treat with both alternative and western medicine. The healthier the horse's immune system is, the less likely it is to get sick, and the easier it is to recover. Once the long-lived bacteria get onto a premise, it is a disease that can affect new horses coming onto the property. Most horses who have had the disease are immune for life. Since it is so contagious, barns with active cases are usually quarantined to prevent the spread of the disease. Strangles is a messy disease, the horse does feel sick and they do get abscesses that drain. However, it is a low risk disease as far as the long-term health of the horse goes. The vaccine seems to cause more problems than any other vaccine, so is high risk vaccine. Titers are available. An outbreak of this disease is one of the best places to use the homeopathic nosodes discussed later in this paper.

Western Encephalitis does not exist in the east, and Eastern Encephalitis not in the west. However, you cannot buy a vaccine for just one of these diseases. The disease is seen mostly in warm parts of the country with a large mosquito population. Occasionally it is seen in other parts of the country, but in general many areas of the country are at a low risk for the disease. In a high risk area, it may be advisable to vaccinate or at least check titers, since the disease can be life-threatening (high risk disease). The vaccine seems to be moderately safe, but can cause some reactions. Titers are available.

West Nile virus is the new disease on the block. It seems to be moving across the country leaving behind a low level of disease. However, we do not yet know what the disease patterns are or will be from year to year. It is a high risk disease (serious if your horse gets it), and possibly a problematic vaccine (there are quite a few reactions to some of the vaccines). So, vaccinating is not without some risk, and it is important to make the decision for each horse based on its health history. The young, strong animals are least susceptible. Titers are available and it appears that the vaccine and possibly some natural immunity are fairly effective as many titer levels are good.

Time of year for vaccinating

When making decisions about vaccination, study the disease. As an example, it is pointless to vaccinate for a mosquito-carried disease in October if you live in New England, or anywhere in the northern 2/3 of the country where there are no mosquitoes in the winter. The diseases that are carried by mosquitoes include Eastern and Western Encephalitis and West Nile Virus. All of these diseases occur primarily when the mosquito population builds up to high level in the late summer and fall. Cases are rare earlier in the year. Potomac Horse fever also occurs in July through October. So, for these late summer diseases it would be better to vaccinate in May for maximum protection rather than in February or March when it is convenient.

The best way to get maximum benefit from vaccination is to spread the shots out rather than overload the whole system with everything at once. If the immune system is at all weak, multiple vaccines given the same day may not be very effective. Rabies and tetanus are year-around diseases, so these could be given at any time of the year. Save the late spring for diseases of the summer. Then the horse has maximum protection during the peak of the disease and there is no need to vaccinate twice a year for vaccines that may not be as effective. Twice a year vaccination adds more stress to the immune system.

Alternatives to vaccination

There are several alternatives to the conventional schedule. One is to check titers and just vaccinate for those diseases that have low levels of antibodies present. Another is to improve the health of the horse's immune system to help prevent susceptibility to disease, or to help the horse cope with the vaccine better. Homeopathic nosodes are another possible way to help the immune system.

When using with a regular vaccine, some of the side effects can be prevented by giving the homeopathic remedy *Ledum Pal.* 30X or 30C (6-8 tablets once a day for three days following a vaccination). This treatment can prevent reactions such as a stiff neck and lethargy, as well as some of the more severe reactions seen. *Ledum* can also help prevent some of the long-term negative effects of vaccines, though nothing can prevent all problems.

It is important to improve the overall health of your horse's immune system with good nutrition and immune system support. The exact details of a program can be tailored to your horse's needs with a nutritionally-oriented veterinarian as well some good research on the part of the caretaker.

Another option for vaccines is to use homeopathic nosodes, which are like a homeopathic form of a vaccine. The nosode is made from the diseased part of the animal (such as mucous from the nose of a strangles horse), but is diluted so that it works like other homeopathic remedies. Nosodes often get used in place of vaccines. There is little research to support their use, and what has been done has not shown much promise. However, having said that, clinically there are many instances around the world where nosodes are used successfully in the prevention of disease. It must be stated that no one can promise nosodes will prevent disease, and anyone that says that is giving false information. The correct answer is that they might work. The general conclusion in a recent discussion amongst holistic vets is that nosodes work best in the face of an out-break of a disease, but may not help much in the day-to-day long-term prevention. Regular vaccination is often not advised in the face of an outbreak, since it takes at least ten days for the vaccine to trigger the immune system. If the animal has already been exposed to the disease but does not yet have symptoms, sometimes a vaccination can make them sicker. Nosodes can be very helpful here.

The giving of any homeopathic remedy alters that body's chemical and energetic makeup. Most holistic vets are leaning away from using nosodes except in an outbreak situation. Nosodes are available for most of the common diseases, including West Nile, however they are only available through prescriptions with a holistic veterinarian. And it is best not to just give them to any horse without knowing something about the current state of health. In many cases it is better to improve health than to just throw nosodes into the horse and hope for the best. When several generations of animals have been raised using no vaccines or only a few nosodes, the offspring become healthier and more resistant to diseases of all types.

Conclusion

There is not one perfect answer to the vaccination issue. Each and everyone must make the best, informed decision for each horse, each year. As new information comes available, read and learn everything you can. Your horse will thank you.