



## Vaccinations

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### Why vaccinate? What you should know about equine vaccinations

Vaccines contain agents (a killed or weakened organism) that stimulate a specific immune response that prevents an animal from developing a particular virus or bacteria. An *inactivated vaccine* contains a virus or bacteria that has been killed and is no longer pathogenic or capable of reproducing that disease. An *attenuated live vaccine* contains a weakened virus or bacteria that can no longer cause the actual disease, but is still capable of stimulating the horse's specific immune response.

### When should horses start receiving vaccinations?

Foals should receive their first vaccinations when they're between four and six months of age, around the time they're being weaned. If the mothers have received regular vaccinations, their milk will contain enough antibodies to protect the foals until then. Foals whose mothers haven't had regular vaccinations, however, may be started on their vaccinations earlier – as young as three months of age.

Horses that are just starting their vaccines will usually receive two injections spaced four weeks apart followed by regular annual vaccines.

### Which are the core “must-have” vaccines?

Every horse is an individual, so it's best to discuss your animal's specific needs and your region's specific vaccine requirements with your veterinarian. Generally, the core vaccines protect against rabies, eastern/western equine encephalitis (EEE/WEE), tetanus and the West Nile virus. EEE/WEE and tetanus vaccines are administered together in a three-way vaccine, while rabies and West Nile vaccines are administered separately. A combination vaccine that includes West Nile virus is available, however, and is often used in most horses receiving their annual boosters in the spring.

**EEE, WEE and West Nile virus** are vector-borne diseases spread by bloodsucking insects, usually mosquitoes, which transmit the virus from wild birds or rodents to horses. Although West Nile virus is the only one that's been reported in Canada over the past few years, all three of these diseases have serious implications for human health because people can contract them through mosquito bites.

Horses seem particularly susceptible to **tetanus**, a bacterial disease that is fairly progressive and difficult to treat. The animals often become infected through an injury that's low to the ground or through any other opening that provides a gateway for the bacteria. Most horses die once they've shown the clinical signs of tetanus.

Although **rabies** is rare in horses, it is spread through the bites of infected wild animals such as bats, skunks and raccoons and is not unknown (one equine case in 2016, two in 2015). Horses that develop the disease very seldom survive. Rabies is also a reportable disease under Canada's *Health of Animals Act*, and all suspect cases must be reported

to the Canadian Food Inspection Agency (CFIA). Because of this status, there are specific rules regarding the management of affected animals and other animals and people who come in contact with suspect cases.

### **Which vaccinations are optional?**

The optional or risk-based vaccines are those which certain horses need or should have if they're exposed to specific diseases or are more likely to contract based on their lifestyle.

There are several **equine influenza** vaccines available which vary based on the content of the most common strains of influenza that have been circulating through equine populations in North America and Europe. Equine influenza is highly contagious and causes clinical signs similar to those found in humans with the flu – high fever, nasal discharge and cough.

Although the vaccine provides only six to seven months of immunity, it's usually administered once in the spring each year. It's advisable, however, to booster these vaccines every six months. This is particularly important for horses that travel a lot and are exposed to other animals at shows, training facilities, racetracks and other public events.

Approximately 70 per cent of horses have attracted the **equine herpes virus (EHV-1 and EHV-4) or rhinopneumonitis** before the age of one. The virus then lies dormant in the nerve ganglia of the head region until the animal is in a stressful situation – that's an opportunity for it to reactivate. Once reactivated, the virus can be shed or passed on to other horses through coughing or nasal secretions.

None of the herpes virus vaccines are labelled or proven to protect horses against a specific mutation of the virus that causes neurological signs. This strain triggers severe inflammation in the spinal cord that causes an affected horse to have weakness in the hind (ataxia) and be unable to empty its bladder. Although veterinarians can provide supportive therapy for the effects of the disease, there is no cure for the highly infectious virus. Even with treatment, some animals do not survive and others that recover still retain some of the neurological signs. Although outbreaks of neurological disease due to this mutated strain have been sporadic in Canada over the years, it's been reported every year at several Thoroughbred racetracks in the United States. This is a sign that young animals exposed to a new environment and a highly stressful lifestyle are the most at risk because they still don't have a well-developed non-specific or specific immune system.

The vaccine for the preventable strain of equine herpesvirus or rhinopneumonitis should be administered in the spring when the show season begins and owners start travelling with their horses.

**Strangles** is a bacterial disease caused by *Streptococcus ssp equi equi* that causes abscesses of the lymph nodes around the larynx and pharynx. It's particularly concerning in young horses (up to age four or five) that still have immature immune systems. They tend to get the most severe signs and can develop pneumonia if the abscesses burst internally into their larynx and they aspirate infectious pus.

Every horse on a farm or boarding facility should be vaccinated for this highly infectious disease. Vaccinated animals can still potentially contract the disease, but their clinical signs are usually mild or nearly absent. Immunity in a vaccinated animal lasts about a year; therefore, annual boosters are recommended.

Veterinarians can perform a test called an antibody titre, which measures the level of antibodies in a blood sample. The level of antibodies in the blood can reveal whether an animal has been exposed to an antigen (a foreign substance that produces an immune response). Once an unvaccinated animal has recovered from the disease, the horse's antibody titre will show very high antibody levels and immunity can last up to five years. If a horse is vaccinated shortly after recovering from strangles, it can result in severe complications because of an antibody/antigen complex build-up in its system. So, it's best to check the antibody titre before administering the strangles vaccine to any horse that's been diagnosed with strangles in the last five years.

If there's an outbreak of strangles on your farm, it's advisable to check the titres before vaccinating a healthy-looking horse. Even animals with no signs of strangles may have already contracted the disease and formed a strong antibody titre against it.

Although horses older than seven years may not require the vaccine, young horses exposed to stressful situations should be vaccinated regularly against this disease.

### **Can I vaccinate my own horse?**

Here in Canada, a veterinarian is required to administer the rabies vaccine, only because it is a reportable disease. Horse owners can give all of the other vaccines themselves.

Owners need to be aware that the strangles vaccine is an attenuated live vaccine and must be administered through the nose only. It should *never* be injected intramuscularly (as we do with other vaccines) because injection deep into the muscle will cause abscess formation. The intranasal strangles vaccine sold in Canada may cause confusion because it's sold in two separate vials (diluent and vaccine powder) along with a nasal applicator. The use of a needle is necessary to mix the vials together, then the needle must be replaced with the nasal applicator to administer the vaccine deep into one nostril.

Additionally, because the strangles vaccine is a modified live vaccine, it needs to be handled carefully since it has the potential to cause infection – especially if other intramuscular vaccines or injections are given at the same time. It should either be the last vaccine administered, or it should be given on a separate day from the intramuscular vaccines.

### **Are there any possible side effects to the vaccinations?**

There's always a risk of an injection site reaction that causes pain and swelling in the neck – the most common site for intramuscular injections. Some animals develop hives and an increased respiratory rate. Side effects are uncommon for the core vaccines, but some horses can become lethargic for a couple of days if they've been vaccinated for four or more diseases at the same time.

There's a two-part vaccine for equine influenza and rhinopneumonitis that tends to cause a higher number of injection site reactions, particularly a stiff neck. We advise owners to apply an ice pack on the site for a week or so until the stiffness goes away. Phenylbutazone (bute) can also help in the first three days to minimize discomfort and inflammation.

Owners should be cautious when administering vaccines to an animal that's had a past reaction. We recommend that they separate them out by giving the three-way vaccination one day and waiting two to four weeks before giving the vaccines for influenza, rhinopneumonitis, rabies and strangles.

### **What risk factors should be considered before vaccinating?**

Only healthy horses should be vaccinated. In Canada, most vaccines can be purchased and administered by owners. As a result, subtle health issues may be overlooked. A veterinarian will not only ask specific health-related history questions, but also conduct a brief physical exam to determine whether or not a horse is healthy enough to be vaccinated. It is highly recommended that before vaccinating your horse, you take its temperature and look for signs of illness such as nasal discharge, coughing or lethargy.

Pregnant mares should be vaccinated on a regular schedule, but they should receive an extra booster shot about four weeks before their due date. That's a way to boost their immune systems and increase the antibody titre in the milk for their foals. We usually recommend the three-way vaccine for EEE, WEE and tetanus along with the West Nile vaccine. Although healthy mares can also be given the vaccines for equine influenza and rhinopneumonitis, it's best to avoid any of the modified live vaccines.

We recommend that you vaccinate your animals based on what they do. If you have a retired show horse that now stays on the farm, you can probably skip the equine influenza and rhinopneumonitis vaccines and just keep them on the three-way, West Nile and rabies vaccines. As horses get older, some may be more prone to vaccine-related reactions. In those cases, where such reactions have been witnessed in an individual older horse, we recommend only tetanus and West Nile vaccines.

### **Why are vaccinations so important?**

Science shows that vaccines are effective and safe, and we encourage everyone to vaccinate their horses – particularly if their animals are in boarding facilities or competing in shows and events. These diseases can be very difficult to treat, and you put other horses at risk if your unvaccinated animals become ill. Some barns and arenas even require proof of vaccinations for all of the horses coming in for boarding, shows and clinics.

Young horses with immature immune systems are particularly susceptible, and if your animals are exposed to many other horses, they should definitely have the core vaccines as well as the influenza, rhinopneumonitis and strangles vaccines.

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