



10261 CR P38A ~ OMAHA, NE 68142  
PHONE: 402-533-1151 ~ FAX: 402-533-1159

**MICHAEL J. BLACK, DVM**  
**MICHAEL P. THOMASSEN, DVM**  
**KIM CONOVER, DVM**

## **Immunology**

Spring is just around the corner, and that means it is time to start thinking about vaccinations. This has become a routine procedure for many horse owners, but it is important to keep in mind the reasons we vaccinate in order to ensure we are utilizing them appropriately to get the maximum benefit for our horses' health. The following will provide some insight into how a horse's immune system functions in order to give you a better understanding of why and how we determine vaccination recommendations for your horse.

The purpose of the horse's immune system is to recognize and eliminate foreign invaders such as viruses and bacteria. Anything that the body identifies as foreign is termed an antigen. When an antigen invades a horse's body, it is bound and engulfed by specialized types of cells and destroyed. Antibodies are a type of protein that bind and tag a specific antigen, labelling it for destruction and hastening the process. Once antibodies against a specific pathogen are produced, they remain circulating in the bloodstream, so the next time that antigen is encountered, the body can more quickly identify and destroy the pathogen.

Vaccination involves administering a killed or modified form of a pathogen in order to elicit an immune response, but without causing disease. The animal will then have better disease resistance when exposed to the actual pathogen.

Many factors can influence an animal's response to vaccines, including stress, nutrition, age and some medications. These factors should all be taken into consideration when designing a vaccination protocol for your horse.

After a vaccine has been administered, it takes about 2-3 weeks for the horse to mount an immune response. Keep this in mind when scheduling vaccinations in relation to travel and competition plans. It would be ideal to give your horse's vaccinations well in advance to travel, so the immune system has time to respond and will be better prepared for the stress and possible exposure to diseases.

Most vaccines require an initial 2 or 3 dose series. The first time the body mounts an immune response to a specific antigen, it will quickly lose its memory because the

antibodies do not last very long. With subsequent exposure at specific time intervals, there will be more antibodies produced and they will last much longer in circulation than the first time. This “memory” allows the immune system to mount a stronger and faster response when exposed to that pathogen in the future. This is why it is very important not to skip vaccine doses the first time a horse is vaccinated against any disease.

For more information regarding specific vaccination recommendations, use these links to previous newsletter articles:

Vaccination Guidelines for Adult Horses

[https://admin.imatrixbase.com/clients/11977/documents/VACCINATION\\_GUIDELINES\\_FOR\\_ADULT\\_HORSES.pdf](https://admin.imatrixbase.com/clients/11977/documents/VACCINATION_GUIDELINES_FOR_ADULT_HORSES.pdf)

Vaccination Guidelines for Foals

[https://admin.imatrixbase.com/clients/11977/documents/Vaccination\\_Guidelines\\_For\\_Foals.pdf](https://admin.imatrixbase.com/clients/11977/documents/Vaccination_Guidelines_For_Foals.pdf)