

## RISK-BASED EQUINE DISEASES\*

### EQUINE HERPESVIRUS

Equine herpesvirus (EHV) is a common DNA virus that occurs in horse populations worldwide. The 2 most common types are EHV-1, which causes abortion, respiratory disease and neurologic disease; and EHV-4, which usually causes respiratory disease only but can occasionally cause abortion.

Respiratory disease caused by EHV is most common in weaned foals and yearlings, often in autumn and winter. Older horses are more likely than younger ones to transmit the virus without showing signs of infection. Although EHV-1 causes outbreaks of abortion, EHV-4 has only been associated with single occurrences and is not a risk for contagious abortions.

Clinical signs: fever, nasal discharge, abortion and neurological signs.

### EQUINE VIRAL ARTERITIS

Equine Viral Arteritis (EVA): a contagious viral disease spread by direct contact or by breeding with a previously infected horse. If mares are infected while pregnant, they will usually abort. Affected horses are sick for a week to 10 days with flu-like symptoms. Most recover completely with proper care but can spread the disease to others after recovery via sexual contact.

Clinical signs of EVA are characterized by swelling in the legs of all horses and swelling in the scrotum of stallions. EVA virus can be shed in the semen of stallions for years after infection. EVA may cause abortion between month 3 and 10 of gestation following respiratory infection.

### EQUINE INFLUENZA

Equine influenza is one of the most common infectious diseases of the respiratory tract of horses. Equine influenza is contagious and the virus can spread rapidly through groups of horses in aerosolized droplets dispersed by coughing. The severity of clinical signs depends on the degree of existing immunity, among other factors.

Equine influenza clinical signs may include cough, fever, muscle soreness and nasal discharge. Treatment is generally supportive. Rest until at least two weeks after the cough has resolved is an important component of successful treatment.

Vaccination plays an important role in prevention.

### STRANGLES

*Streptococcus equi* subspecies *equi* (*S. equi* var. *equi*) is the bacterium that causes the highly contagious disease strangles (also known as “distemper”). Strangles commonly affects young horses (weanlings and yearlings), but horses of any age can be infected. Vaccination against *S. equi* is recommended on premises where strangles is a persistent endemic problem or for horses that are expected to be at high risk of exposure.

The organism is transmitted by direct contact with infected horses, or indirectly by contact with: water troughs, hoses, feed bunks, pastures, stalls, trailers, tack, grooming equipment, nose wipe cloths or sponges, attendants’ hands and clothing, or insects contaminated with nasal discharge or pus draining from lymph nodes of infected horses. *Streptococcus equi* has demonstrated environmental survivability particularly in water sources and when protected from exposure to direct sunlight and disinfectants, and can be a source of infection for new additions to the herd.

Clinical signs include fever, depression, nasal discharge, cough, swollen lymph nodes and reluctance to swallow. Recovery can take weeks to months, and some horses become chronic shedders of the bacteria.

## CORE EQUINE DISEASES\*

\*Full descriptions of these diseases can be found at [www.aaep.org](http://www.aaep.org).

### TETANUS

All horses are at risk of development of tetanus, an often-fatal disease caused by a potent neurotoxin produced by the anaerobic, spore-forming bacterium, *Clostridium tetani*.

*Clostridium tetani* bacteria are present in the intestinal tract and feces of horses, other animals and humans, and are abundant as well as ubiquitous in soil. Spores of *Cl. tetani* survive in the environment for many years, resulting in an ever-present risk of exposure of horses and people on equine facilities. Tetanus is not a contagious disease but is the result of *Cl. tetani* infection of puncture wounds (particularly those involving the foot or muscle), open lacerations, surgical incisions, exposed tissues such as the umbilicus of foals and reproductive tract of the postpartum mare (especially in the event of trauma or retained placenta).

**CLINICAL SIGNS** begin with hyper-responsiveness to noise or movement and progress to horse having erect ears; flared nostrils; elevated head; stiff, erect tail; a stiff-legged gait progressing further to muscle spasms; convulsions and death by asphyxia.

### EASTERN AND WESTERN ENCEPHALOMYELITIS

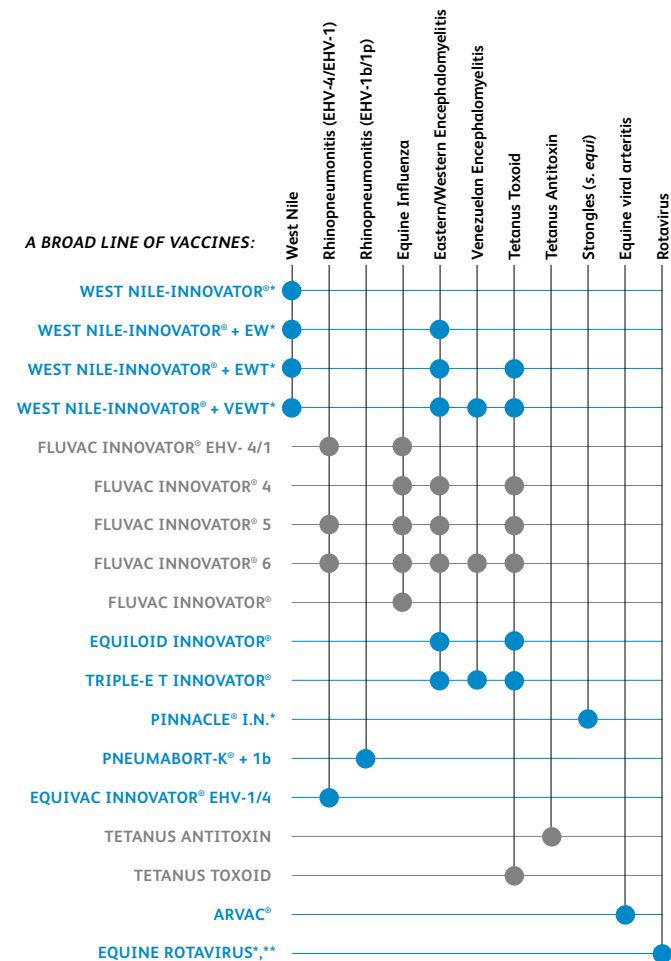
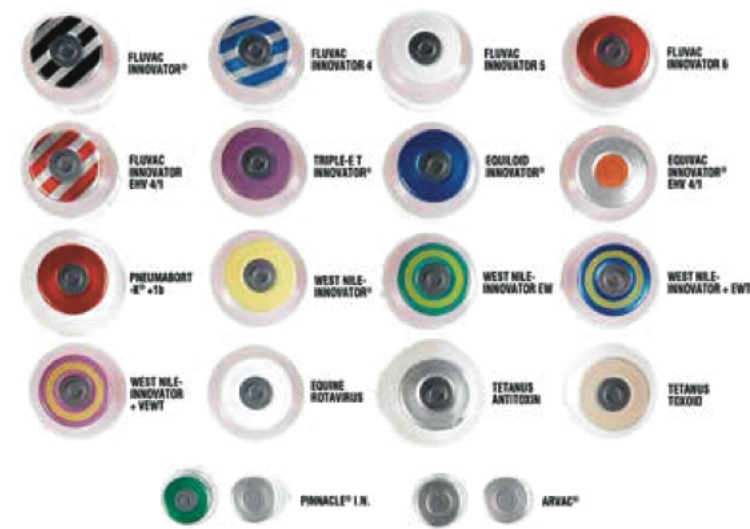
Transmission of Eastern Equine Encephalomyelitis (EEE) and Western Equine Encephalomyelitis (WEE) viruses is by mosquitoes, and infrequently by other bloodsucking insects, to horses from wild birds or rodents, which serve as natural reservoirs for these viruses. Human beings are also susceptible to these diseases when the virus is transmitted to them by infected mosquitoes; however, horse-to-horse or horse-to-human transmission by mosquitoes is highly unlikely, because the amount of virus in the blood of horses affected by EEE or WEE is small.

**CLINICAL SIGNS** can include behavioral changes, loss of appetite and fever. These clinical signs can progress in 12 to 24 hours to dementia with head pressing, teeth grinding, circling and often blindness. The disease is fatal in up to 90 percent of cases. Surviving horses often have residual mental dullness. Treatment is generally supportive.

### WEST NILE

The West Nile virus is transmitted from avian reservoir hosts by mosquitoes (and infrequently by other bloodsucking insects) to horses, humans and a number of other mammals. West Nile virus is transmitted by many different mosquito species, and this varies geographically.

**CLINICAL SIGNS** include fever, lethargy, weakness, altered behavior, somnolence, blindness and other neurological signs including muscle tremors, ataxia and seizures. Approximately 1/3 of horses that develop clinical signs of disease may die. Horses that survive often retain mental deficits.



\* Available only through a veterinarian

\*\* This product license is conditional. Efficacy and potency test studies are in progress. Please consult your veterinarian.

# EQUINE DISEASES AND VACCINATION GUIDELINES



## CORE AND RISK VACCINATION GUIDELINES FOR ADULT HORSES

### ALL VACCINATION PROGRAMS SHOULD BE DEVELOPED IN CONSULTATION WITH A LICENSED VETERINARIAN

The American Association of Equine Practitioners (AAEP) published a comprehensive list of “core” vaccines, which all horses should receive, and “risk-based” vaccines, which benefit horses with particular risk profiles.

To obtain more information on core and risk vaccines vaccination guidelines for both adult horses and foals, please visit the American Association of Equine Practitioners website: [www.aaep.org](http://www.aaep.org).



### CORE-BASED VACCINE SOLUTIONS Available from Zoetis

Adults	Previously Vaccinated	Unvaccinated or History Unknown	Zoetis Vaccine Solutions
▶ Tetanus	Annual revaccination <sup>1</sup>	2 DOSES, <b>2<sup>nd</sup></b> 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination. <sup>1</sup>	EQUILOID INNOVATOR® FLUVAC INNOVATOR® 4, 5 and 6 WEST NILE-INNOVATOR® + VEWT*
▶ Encephalomyelitis, Eastern and Western	Annual revaccination <sup>1</sup>	2 DOSES, <b>2<sup>nd</sup></b> 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination. <sup>1</sup>	EQUILOID INNOVATOR FLUVAC INNOVATOR 4, 5 and 6 WEST NILE-INNOVATOR + VEWT*
▶ West Nile Virus	Annual revaccination <sup>1</sup>	2 DOSES, <b>2<sup>nd</sup></b> 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination. <sup>1</sup>	WEST NILE-INNOVATOR + EW WEST NILE-INNOVATOR + EWT WEST NILE-INNOVATOR + VEWT*

\*Venezuelan Equine Encephalomyelitis virus has a geographical distribution restricted predominantly to Central and South America, although U.S. incursions have occurred, and the risk of introduction persists.  
<sup>1</sup>Early revaccination may be advisable when horses are faced with an outbreak or with other conditions that might make heavy exposure likely.

### RISK-BASED VACCINE SOLUTIONS Available from Zoetis

Adults	Previously Vaccinated	Unvaccinated or History Unknown	Zoetis Vaccine Solutions
▶ Equine Viral Arteritis	Annual revaccination (Refer to label for any restrictions and cautions.)	ONE DOSE, preferably given to maiden mares or when open. Vaccinate pregnant mares after foaling and not less than 3 weeks prior to breeding. Vaccinate maiden and barren mares any time but not less than 3 weeks prior to breeding. Revaccinate annually. Vaccinate males and young animals at anytime but stallions should be vaccinated not less than 3 weeks prior to breeding. Revaccinate annually.	ARVAC®
▶ Equine Influenza	Annual revaccination	2 DOSES, <b>2<sup>nd</sup></b> dose 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Revaccinate annually.	FLUVAC INNOVATOR® FLUVAC INNOVATOR EHV 4/1 FLUVAC INNOVATOR 4, 5 and 6 FLUVAC INNOVATOR Triple-E FT®
▶ Equine Herpesvirus – Respiratory form	Annual revaccination	2 DOSES, <b>2<sup>nd</sup></b> dose 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Revaccinate annually.	FLUVAC INNOVATOR EHV 4/1 FLUVAC INNOVATOR 5 and 6
▶ Strangles	Annual revaccination	2 DOSES given by the intranasal route. <b>2<sup>nd</sup></b> dose given 2 to 3 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination recommended.	PINNACLE® I.N.
Pregnant mares		Previously Vaccinated OR Unvaccinated or History Unknown	Zoetis Vaccine Solutions
▶ Equine Herpesvirus, Abortion form (EHV-1)		3 DOSES given at the 5 <sup>th</sup> , 7 <sup>th</sup> and 9 <sup>th</sup> months of pregnancy. Revaccination in the same 3-DOSE series for subsequent pregnancies.	PNEUMABORT-K® + 1b

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## VACCINATIONS FOR FOALS

### ALL VACCINATION PROGRAMS SHOULD BE DEVELOPED IN CONSULTATION WITH A LICENSED VETERINARIAN

Your veterinarian will decide what vaccines are essential for your horse, when they should be administered and at what frequency in order to help provide optimal immunity.

For foals, the vaccination history of the mare will help determine at what age their initial vaccines can be given. The foal's susceptibility to disease and ability to mount an appropriate immune response to vaccination, based on the presence or absence of maternal antibodies derived from colostrum, should be discussed with your veterinarian.



More information on vaccination guidelines for both adult horses and foals can be found on the American Association of Equine Practitioners website: [www.aaep.org](http://www.aaep.org).

### CORE-BASED VACCINE SOLUTIONS Available from Zoetis

Foals & weanlings (<12 months of age)	Born to mares previously vaccinated against the disease indicated. Born to unvaccinated mare.	Zoetis Vaccine Solutions
▶ Tetanus	2 DOSES, <b>2<sup>nd</sup></b> 3 to 4 wks after <b>1<sup>st</sup></b> dose. Annual revaccination. <sup>1</sup> Note: Age at time of first dose may differ depending on mare's vaccination status.	EQUILOID INNOVATOR® FLUVAC INNOVATOR® 4, 5 and 6 WEST NILE-INNOVATOR® + EWT
▶ Encephalomyelitis, Eastern and Western	2 DOSES, <b>2<sup>nd</sup></b> 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination. <sup>1</sup> Note: Age at time of first dose may differ depending on mare's vaccination status.	EQUILOID INNOVATOR FLUVAC INNOVATOR 4, 5 and 6 WEST NILE-INNOVATOR + EWT
▶ West Nile Virus	2 DOSES, <b>2<sup>nd</sup></b> 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination. <sup>1</sup> Note: Age at time of first dose may differ depending on mare's vaccination status.	WEST NILE-INNOVATOR + EWT

<sup>1</sup>Early revaccination may be advisable when horses are faced with an outbreak or with other conditions that might make heavy exposure likely.

### RISK-BASED VACCINE SOLUTIONS Available from Zoetis

Foals & weanlings (<12 months of age)	Born to mares previously vaccinated against the disease indicated. Born to unvaccinated mare.	Zoetis Vaccine Solutions
▶ Equine Influenza	2 DOSES, <b>2<sup>nd</sup></b> dose 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Revaccinate annually.	FLUVAC INNOVATOR® FLUVAC INNOVATOR 4, 5 and 6 FLUVAC INNOVATOR EHV 4/1
▶ Equine Herpesvirus – Respiratory disease	2 DOSES, <b>2<sup>nd</sup></b> dose 3 to 4 weeks after <b>1<sup>st</sup></b> dose. Revaccinate annually.	FLUVAC INNOVATOR EHV 4/1 FLUVAC INNOVATOR 5 and 6
▶ Strangles	2 DOSES given by the intranasal route. <b>2<sup>nd</sup></b> dose given 2 to 3 weeks after <b>1<sup>st</sup></b> dose. Annual revaccination recommended.	PINNACLE® I.N.
▶ Equine Viral Arteritis	Consult with your veterinarian as to need.	ARVAC®