

The right influenza vaccine for horses at risk



We have you covered

No one provides a broader range of influenza vaccine protection than Merck Animal Health. And no one understands a horse's respiratory needs better than the veterinarian. At Merck Animal Health we offer a large portfolio of equine influenza vaccines designed to help veterinarians customize protection to the horse. For horses at risk for influenza, Flu **Avert**[®] I.N. is the right vaccine.

Flu **Avert**[®] I.N. (Influenza)

Flu **Avert** I.N. influenza vaccine works at the site of infection—in the nasal mucosa. Unlike other influenza vaccines, Flu **Avert** I.N. provides a broad range of protection by stimulating a local immune response in the nasal cavity in addition to stimulating a systemic response.

With a rapid onset of immunity, long duration of immunity and broad range of protection, Flu **Avert** I.N. is an ideal vaccine when a higher level of influenza protection is needed—older foals and young horses, performance horses traveling and competing and urgent situations such as an influenza outbreak.

Flu **Avert** I.N. is a modified-live intranasal equine influenza vaccine that provides:

- Exceptional influenza protection with a single dose antigen—proven to be safe and effective in challenge studies
- Unique intranasal application administered at the site of infection
- No risk of interrupting training or competing due to injection site reactions
- One dose for primary immunization for horses 11 months of age or older
- Rapid onset of immunity with one dose—5-7 days in naïve horses¹
- Long-lasting, 6-month duration of immunity
- Modified-live vaccine proven by challenge studies to be effective against numerous North American and Eurasian strains of equine influenza



Merck Animal Health Biosurveillance Program: Keeping you at the forefront of respiratory disease

Our ongoing biosurveillance research provides real-time PCR testing for four major infectious upper respiratory disease pathogens: Equine Herpesvirus -1 (EHV-1) and Equine Herpesvirus -4 (EHV-4); Equine Influenza Virus (EIV); and *Streptococcus equi* subspecies *equi*.

To find out how you can benefit from this important new program, talk to your Merck Animal Health representative.

Flu Avert I.N. delivers superior efficacy and safety

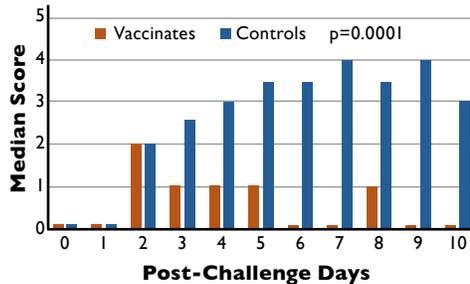
The modified, cold-adapted virus in Flu **Avert** I.N. vaccine does not cause disease. Instead, it triggers the horse's body to mount an impressive mucosal and systemic immune response. Also, because the vaccine is given intranasally, the first response occurs in the nasal mucosa — the natural path of influenza infection.

Immunogenicity Efficacy Challenge Study²

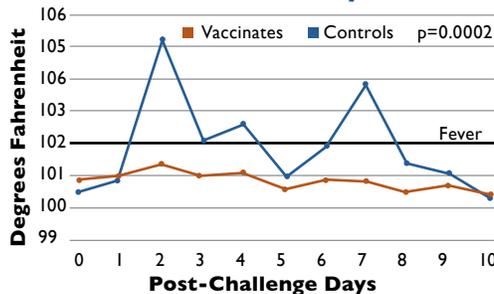
In this blinded study, 20 naïve horses were vaccinated and 10 were controls. All were exposed to “wild-type” equine influenza virus five weeks after vaccination.

- All non-vaccinates became very ill
- **19 of 20 horses (95%) vaccinated with Flu Avert I.N. were significantly protected from clinical signs, including fever and viral shedding**

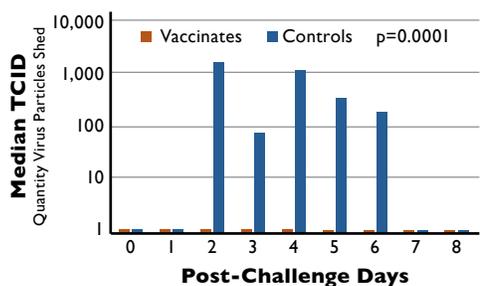
Median Clinical Score



Median Rectal Temperature



Median Viral Shedding in Nasopharyngeal Swabs



¹ Townsend HGG: Onset of protection against live-virus equine influenza challenge following vaccination of naïve horses with a modified-live vaccine (data on file). Unpublished data.

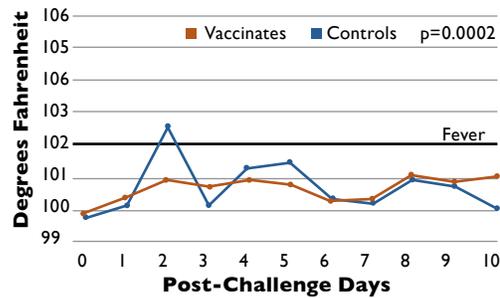
² Townsend H.G.G., Penner S.J., Watts T.C., Cook, A., Bogdan J., Haines D.M., Griffin S., Chambers T., Holland R.E., Whitaker-Dowling P., Youngner J.S., Sebring R.W. Efficacy of a Cold-Adapted, Intranasal, Equine Influenza Vaccine: Challenge Trials. *Equine Veterinary Journal* 33(7):637-643, 2001.

Eurasian Strain Challenge Study³

Flu **Avert** I.N. vaccine has been proven effective against viruses of the American lineage (KY91 and KY98) and a virus of the Eurasian lineage (Sask/90). In this study, 10 vaccinates and 10 non-vaccinates were exposed to equine influenza virus of Eurasian lineage, Sask/90.

- The vaccinated horses were protected from clinical signs, including fever and virus shedding

Median Rectal Temperature



Immunosuppression Study⁴

In a field safety and efficacy study, Flu **Avert** I.N. proved to be safe and effective even in the face of pre-existing immunosuppression.

- Two groups were vaccinated with Flu **Avert** I.N. One group was left unvaccinated and considered the control group
- One group of vaccinated ponies were subjected to five days of immunosuppressive strenuous exercise prior to administration of Flu **Avert** I.N.
- When all three groups were challenged three months post-vaccination, Flu **Avert** I.N. provided complete clinical protection in all vaccinated horses — even those subjected to exercise-induced immunosuppression
- Study results indicate that Flu **Avert** I.N. was safe and effective even when administered to immunosuppressed ponies
- These results were in sharp contrast to the poor performance of a conventional killed-virus vaccine in a previous trial

A customized vaccination program can significantly reduce the risk of influenza. Extremely contagious, influenza can sideline a horse for weeks to months. Make sure your patients are protected with Flu **Avert** I.N. — field safety tested and proven effective.

To learn more about our portfolio of equine influenza vaccines, contact your Merck Animal Health sales representative or call 800-521-5767.

³ Chambers T.M., Holland R.E., Tudor L.R., Townsend H.G.G., Cook A., Bogdan J., Lunn D.P., Hussey S., Whitaker-Dowling P., Youngner J.S., Sebring R.W., Penner S.J., Stiegler G.L. A New Modified Live Equine Influenza Virus Vaccine: Phenotypic Stability, Restricted Spread and Efficacy Against Heterologous Virus Challenge. *Equine Veterinary Journal* 33(7):630-636, 2001.

⁴ Lunn D.P., Horohov D.W., Hussey S., Dowling P., Youngner J., Chambers T., Holland R., Rushlow K., Sebring R. A Potent Modified-Live Equine Influenza Vaccine: Safe Even After Exercise-Induced Immunosuppression. 1999. *Infectious Disease* 45:43-44.