



VACCINATING YOUR HORSE

Why Vaccinate?

Just as with human disease, vaccinations help animals fight infection and, if infection does occur, severity of disease is reduced. Vaccines stimulate an immune response by tricking the body into believing that they are being attacked by a disease so that protective antibodies and other immune mechanisms are produced. Over time this immune protection wanes, which is why booster vaccinations are necessary. Immunisation is most effective when a high percentage of the population is vaccinated. The reason that nasty diseases such as parvo and distemper in dogs and flu epidemics in horses are now quite rare is largely due to the success of vaccination.

Tetanus

Every horse should be vaccinated against tetanus. Tetanus is caused by a common soil bacterium *Clostridium tetanii* that is found virtually everywhere and can survive in the environment for long periods of time. The bacteria invade the body through cuts and grazes; particularly puncture wounds such as penetration of the sole of the foot. The bacteria then multiply in the body and produce a toxin that causes rigid paralysis of the horse's muscles. The horse becomes progressively stiffer adopting a rigid stance with an elevated tail head and a prolapsed third eyelid (Fig. 1). Horses with tetanus also appear anxious and are extremely sensitive to stimuli such as being touched or sounds. Ultimately the horse has trouble eating, standing and breathing and will die from respiratory failure.



Fig.1: Protrusion of the third eyelid in tetanus.

Horses are particularly susceptible to tetanus toxin and therefore disease is usually fatal in unprotected horses, even if aggressive treatment is attempted. However, tetanus can be easily avoided by vaccinating your horse.

Protocol: 2 doses of tetanus toxoid vaccine 4-6 weeks apart
 Booster one year later
 Repeat boosters every 2-3 years depending on the vaccine used

Young foals can be infected through the umbilicus in the first few days of life and therefore it is important that they receive antibody protection from their dam by sucking colostrum in the first few hours of life, provided that their dam is fully vaccinated herself. Foals should then be vaccinated at approximately 4 months of age once these maternally derived antibodies have waned. Unprotected horses (and new born foals) can be given short term protection (several weeks) by administration of tetanus antitoxin; however this is much more expensive than the tetanus vaccine. Tetanus and flu protection can also be given together in combined vaccines.

Equine Influenza

Horses that frequently meet other horses, e.g. on livery yards, at shows or horses that travel, should also be vaccinated against equine influenza (flu). In fact, many shows and yards insist on horses being vaccinated before entry onto their property.

Equine flu is caused by the equine influenza virus which, like the human flu virus, is constantly changing and adapting to avoid the immune response. Consequently, flu vaccines are constantly being updated to include the latest strains of virus from outbreaks of disease and frequent boosters are required to maintain immune protection. In fact, the FEI recently reduced the booster interval to every 6 months for horses competing in FEI competitions.

Equine flu causes fever, depression, lethargy, coughing and a watery or snotty nasal discharge. Disease can spread very quickly between unprotected horses as the virus can travel long distances in the air from coughing. People going from infected to non-infected horses can also transmit infection by carrying virus particles on their hands, clothes or equipment. When equine influenza infected Australia for the first time ever in 2007, there was a devastatingly rapid spread of disease through the totally naïve population of horses. Vaccinated horses may still become ill if challenged with a new virus strain but disease is usually shorter and much less severe.

Protocol: 2 doses **21-92** days apart
 Third dose **150-210** days later
 Booster dose **within 365** days

Although the primary course consists of 3 vaccinations, horses are considered safe to compete 7 days following the second vaccine dose. It is important your horse has its booster vaccination within 365 days of its previous booster otherwise the whole course will need to be re-started.

Equine Herpes Virus

Equine herpes virus is responsible for 3 different disease syndromes; upper respiratory tract infection, abortion of pregnant mares and neurological disease.

Upper respiratory tract infections are the most common form of herpes disease in horses. Any horse can get a herpes respiratory infection but outbreaks may occur in places like racehorse yards and liveries from frequent mixing of different groups of

horses. Clinical signs of disease include mild fever, coughing and a nasal discharge. Older horses may suffer from herpes infection and pass on the virus without showing any clinical signs. Once a horse is infected, the virus can remain latent in the horse's nerve endings for many months prior to shedding again. Shedding is believed to be stimulated by stress. Vaccination for herpes and flu can be combined with the vaccine Equillus Resequin.

Protocol: 2 doses 3-6 weeks apart
 Booster dose every 6 months

Abortion due to equine herpes usually occurs in the last trimester (last 3 months of pregnancy). Abortion 'storms' can occur due to herpes virus on studs and often follow herpes respiratory disease. For this reason, it is recommended that young stock and pregnant mares are kept separately on stud farms.

Protocol: Vaccination of mares at 5, 7 and 9 months of pregnancy

Neurological disease due to herpes virus occurs sporadically, and again often follows herpes respiratory infection. Clinical signs include fever and progressive weakness and paralysis of the hindlimbs. Horses that stabilise quickly often recover but severely affected animals often require euthanasia. No vaccination is licensed to protect against herpes neurological disease.

Strangles

Strangles is a highly contagious, bacterial respiratory infection caused by *Streptococcus equi*, which can affect horses, ponies and donkeys of all ages. Clinical signs usually appear about 5-7 days after coming into contact with an infected horse and include a high temperature, depression, coughing, thick, purulent nasal discharge and painful, swollen and abscessed lymph nodes of the head and neck (Fig. 2). In partially immune animals, nasal discharge without swelling of the glands is frequently all that is seen. A carrier state without any obvious clinical signs is also possible. These horses usually have concretions of pus (chondroids) in their guttural pouches and can shed *Strep. equi* bacteria intermittently. Consequently, these horses are often responsible for new outbreaks of clinical disease. Very rarely, strangles may be fatal if it spreads to other parts of the body.



Fig. 2: Horse with strangles showing abscessation of the lymph nodes of the head and throat.

The most important means of transmission is through direct contact with infected horses as bacteria are shed in the nasal discharge and in pus from abscessed lymph nodes. However, bacteria can also be transferred indirectly between horses by people or equipment contaminated with these secretions and so hygiene is very important in containing a disease outbreak. Infection can be controlled by isolation of infected horses and any chronic shedders until they are free of infection. Shedding usually ends rapidly after recovery but some may shed intermittently. No infected or in-contact animal should be released from isolation or veterinary supervision for a minimum of 2 weeks following full recovery of the last infected horse unless 3 consecutive negative swabs have been taken over a 3 week period.

Disease Prevention

All new horses entering a yard should be monitored closely for 7 days. Any horses that become off colour, develop a fever or a nasal discharge should be segregated and swabbed for the presence of *Streptococcus equi*.

There are currently no effective licensed vaccines for prevention of strangles in the UK. A vaccine administered into the upper lip was available a few years ago and may soon become available again.