Tetanus is a deadly disease, but one that can easily be prevented with regular vaccinations, explains equine vet Linda Belton

**What causes tetanus?**

The disease of tetanus is actually caused by a neurotoxin (substance that destroys nerve tissue) produced by the bacterial spores. The neurotoxin enters the horse’s bloodstream through wounds contaminated with soil. The spores produce three different toxins, but it is the neurotoxin tetanospasmin that is most significant.

Tetanospasmin is transmitted around the body to remote areas via the bloodstream and enters the central nervous system at many levels. While the effects of tetanus are generalised, they often begin around the head.

**Symptoms**

The signs of tetanus relate to ‘tetany’, which means the steady contraction of a muscle without distinct twitching. Stiffness in the head and limbs may be seen, together with a rigid posture known as the saw horse stance. Erect stiff ears, flared nostrils, a wide-eyed expression and difficulty in chewing can occur, due to spasm in the muscles of the head and neck.

Similarly, the horse’s mouth becomes difficult to open, hence the colloquial name lockjaw. The signs are exaggerated by any stimulus such as noise or bright light. Whole body trembling may progress to violent body spasms in response to sudden movements or noise.

Other well-documented signs include extension or elevation of the tail, and protrusion of the third eyelid. As the disease progresses, affected horses may lie down, and it is muscular spasm and paralysis of the respiratory muscles that ultimately leads to death.

As even small wounds, including foot punctures, can allow clostridium tetani to enter the bloodstream, and given that the incubation period for signs of tetanus to develop is seven to 21 days, the wound itself has usually healed well before signs of tetanus appear. The contaminated wound may even have been so small as to have gone completely unnoticed or been dismissed as unimportant and yet it leads to the horse developing tetanus.

Death usually occurs five to 10 days after the onset of clinical signs. However,
in foals the course of the disease is much faster, taking only three days before death.

The umbilicus in foals is a potential source of contamination, increasing the risk of the disease developing. For the mare, contamination of the uterus at the time of giving birth is another risk factor.

**How to treat tetanus**

Treatment of affected horses involves the administration of penicillin to kill the clostridium bacteria, and treatment to counter the symptoms and effects of the muscle spasm.

Tetanus anti-toxin is given to neutralise any unbound toxin in the body. Large doses may be given, especially if it has not been possible to aggressively flush and remove dead flesh from the contaminated wound. All dead or damaged tissue from the wound should be removed so that the anaerobic environment required by the clostridium is destroyed. If practicable, the wound should be left open to the air and oxidising agents such as hydrogen peroxide applied to the wound.

External stimuli exaggerate the clinical signs, so affected horses should be kept in a quiet, cool, dark stable. Blindfolding may calm some horses and decrease the frequency of spasms. Water and fluids need to be placed at muzzle level and intravenous fluids may need to be given.

The paralysis also means the horse is unable to empty his bladder or rectum and so a urinary catheter needs to be placed and the rectum emptied manually.

Sedatives may be used to control spasms and muscle relaxants can be given, although not without some further risk. Slings may be needed if the horse is in danger of falling. If an adult horse with tetanus lies down, the outlook is very poor.

Most cases of tetanus are fatal although some mild cases do recover. However, surviving horses may never return to full strength. With tetanus, the emphasis needs to be on prevention (see right).

**Controlling tetanus**

Vaccination against tetanus is effective and safe. Although it is not mandatory, the vaccine should be given to all horses as exposure to clostridium tetani is unavoidable, and the disease is often fatal.

Tetanus vaccination can be given on its own, or combined with an equine influenza vaccine. A primary course of two injections, 28 days apart, should be followed by a first booster 365 days later. Boosters then need to be given every two years. The recommended booster interval may vary depending on the vaccine brand used.

Pregnant mares should be given a booster vaccination in the last four to six weeks of pregnancy. This provides the foal with some protection for the first six to 12 weeks via antibodies in the milk.

Foals can also be given an injection of tetanus anti-toxin as soon as possible after birth, which will provide temporary cover for three to four weeks. Tetanus anti-toxin can also be given to unvaccinated adults that sustain a wound or require surgery.

**NATIONAL VACCINATION MONTH**

UK equine vets are supporting National Vaccination Month in June, which aims to raise awareness of the importance of vaccination specifically against equine tetanus and flu.

During National Vaccination Month, participating vets will give the second dose of a primary vaccination course (tetanus or flu/tetanus) and a wormer free of charge (visit fee not included and qualifying criteria apply).

A voucher and information on diseases are available for download at www.vaccinationmonth.co.uk.

**THE VET**

Linda Belton MRCVS is a partner at The George Veterinary Group Equine Clinic, near Malmesbury, Wiltshire. She and her team provide veterinary care for equines throughout the counties of Gloucestershire and Wiltshire.

**Did you know?**

Approximately 90 per cent of unvaccinated horses that develop tetanus die. In the cases that survive, treatment and nursing care is required for about six weeks.