

# CANBERRA Equine HOSPITAL

## STRANGLES in HORSES

### ***What is Strangles?***

Strangles is an infection caused by the bacteria *Streptococcus equi* ssp. *equi*. It is highly contagious disease seen in horses, donkeys and mules. Although young horses are typically affected, any age group can become sick. Typically the horse develops a fever (high temperature, >38.3°C) and swollen lymph nodes which abscess and rupture. The purulent material (creamy yellow discharge) in strangles abscesses and from the nose contains very high numbers of the bacteria. The infection spreads by direct horse-to-horse contact or by humans, tack, drinking troughs, fences and from the environment contaminated with the infectious discharge. Vaccination is recommended to either prevent the disease or at least reduce its severity and duration.

### ***What are the Signs of Strangles Infection?***

The characteristic signs include **sudden onset of fever (3 to 14 days after infection with the bacteria), dullness/depression and loss of appetite.** There may be swelling of the lymph nodes (glands) under the jaw and in the throat and the horse may hold his head low and extended outwards to relieve discomfort. Swallowing may be painful. The disease is called 'strangles' because the **lymph nodes become abscesses**, which can potentially occlude the airway and make breathing /swallowing very difficult. There is usually a thin, watery nasal discharge that soon becomes thick and creamy yellow pus. Horses usually recover fully after natural rupture of the abscesses although up to 10% of horses can remain chronic carriers of the disease. Up to 75% of horses develop strong natural immunity to reinfection for a period of time (possibly years).



### ***What Horses are at Risk of Infection?***

Strangles **can occur in horses of any age** but younger horses, (weanlings and yearlings), are more susceptible. After infection, most horses are immune to re-infection for several years. Old or debilitated (already sick) horses are at increased risk of infection or re-infection. **Horses that have not been vaccinated are also at greater risk.**

### ***Does Strangles Occur in Other Species?***

Strangles **does not occur in other species** and should not affect humans. However, please ensure proper hygiene, particularly washing hands with soap immediately after handling sick horses or their gear.

### ***How does Strangles Spread?***

The infection is spread by **direct horse-to-horse contact or from humans** moving between horses. Additionally, **tack, feed buckets, water troughs, fences, floats and the pasture can all be infective.** The bacteria lives in the environment for usually 4 but up to 8 weeks in the right conditions and so will continue to infect horses that are housed on the contaminated pasture. Frost ( $\leq 0^{\circ}\text{C}$ ) should kill bacteria on the pasture.

Horses do not have to come into contact with the purulent discharge to be infected. This is because **shedding of the bacteria from recently infected horses begins 2 to 3 days after onset of fever and before lymph node enlargement and nasal discharge occurs.** Additionally, there can be **carrier horses that appear outwardly healthy but harbour strangles infection in their upper respiratory tract for months and even years after infection.** Also, **most horses shed the bacteria for 2 to 3 weeks (or longer) after the onset of fever** and after clinical recovery. Therefore, seemingly healthy horses may be shedding strangles into the environment and infecting other horses.

### ***How is Strangles Diagnosed?***

Strangles is diagnosed by laboratory analysis via Polymerase Chain Reaction (**PCR**) and **Culture of the bacteria.** Samples collected for this are either **nasal swabs or nasal washes.** Blood may also be required to assess for inflammation, hydration status or concurrent disease conditions in horses with complications.

### ***What is the Treatment for Strangles?***

**The bacteria that causes strangles can be killed by certain antibiotics,** including Penicillin and Sulprim (TMS). It can be **challenging to decide when antibiotics are appropriate in cases of strangles** and it is important to consult with a veterinarian about their use. Usually it is recommended to only treat with antibiotics in more complicated or severe cases, as antibiotics can delay resolution of abscesses and increase risk of the infection spreading throughout the horse's body ('bastard strangles').

From a practical perspective, early detection of infection begins by taking your horses' body temperatures at least twice daily. Treating horses with a course of antibiotics from the very first sign of infection (FEVER), before abscesses start developing. Some cases form such large abscesses that they are in danger of suffocation and then intensive antibiotic and anti-inflammatory treatment is essential. Horses that are inappetent may require anti-inflammatories to encourage them to feel better and eat. Caution must be taken that animals receiving anti-inflammatories are also drinking and not dehydrated, or gut and kidney damage can result.

Recommended treatments include application of heat (hot water bottles or towels) to the swollen glands to encourage abscesses to burst or to grow to a size and maturity that allows them to be safely and successfully lanced open. **Once open, the abscess cavities should be flushed with dilute povidone-iodine solutions and allowed to heal naturally.**

### ***What Complications can occur with Strangles?***

Strangles can take an unusual course with multiple small or single large abscesses (as large as a dinner plate!) forming in the chest and abdomen. This is often termed '**bastard strangles**' and can be very difficult to diagnose and treat successfully. Euthanasia may be the only humane option.

Occasionally a horse becomes a **long-term subclinical carrier** of the disease, (months to years), but does not display outward signs. Usually the **bacteria are hiding in the guttural pouches**, (two empty sacks that sit behind the jaw), and pus may be present when investigated with a scope. They will also test positive with laboratory samples. **When chronic carriers remain undiagnosed, it is usually these animals that continue the cycle of reinfection in horse populations.** Often these carriers only spread the infection when they are 'stressed', e.g. transported or at foaling. To stop these horses continually shedding into the environment, the infection must be cleared from the guttural pouches. **Until cleared, carriers remain a serious risk to other horses.**

Strangles is rarely fatal but deaths can occur. Occasionally a horse with strangles will develop a serious condition called '**purpura hemorrhagica**'. This is due to an unusual immune reaction to the streptococcal bacteria and results in widespread damage to blood vessels in the limbs and internal organs. Often the limbs and head swell, with small bruises appearing in the mouth. This condition requires immediate veterinary attention or may be fatal.

### ***How can we Help Prevent Strangles in Our Horses?***

It is most important to understand the highly infectious nature of this organism. Prevention is based on **good management, quarantine and biosecurity measures**. Your veterinarian will help you set up a management protocol appropriate to your own location and circumstances. Some key features are outlined below:

#### **Monitoring for Strangles:**

**During a disease outbreak, all horses should have their temperature checked TWICE daily for 10-14 days.** A normal body temperature is less than 38.3°C. Any elevation in temperature or accompanying signs (swollen lymph nodes, dull, reduced appetite, swollen limbs), should be reported to your veterinarian.

#### **Vaccination:**

Vaccines against strangles are highly recommended. Around 50% of vaccinated horses will still develop a milder form of strangles after exposure. The vaccine is an injection into the muscle and can be given alone or combined with tetanus (2-in-1).

**Initially, a course of 3 vaccines should be given, each 2 weeks apart.** This may also be required in horses that are overdue for vaccination. Immunity to infection should be present 2 weeks after the final vaccine. **Recommendations for booster vaccination are at least every 12 months** and every 6 months in horses that travel and contact other horses regularly.

There are some risks associated with vaccination, including very rare cases of purpura haemorrhagica. However, the risk of purpura haemorrhagica is much greater in non-vaccinated horses that contract strangles.

**Horses that have potentially been exposed to strangles should NOT be vaccinated during an outbreak.** This is because if a horse has already contracted the disease but it is not yet apparent clinically, then severe disease including purpura hemorrhagica may result from giving them another dose of strangles by vaccination.

**Horses that have not had any exposure to strangles-infected horses and do not have a fever** (temperature is less than 38.3°C at repeat checks) **can be vaccinated during an outbreak** if they are due for vaccination. However, immunity will not be present for 2 weeks after vaccination.

#### **Quarantine:**

Always obtain vaccination and health records of new horses coming onto a property. **Any new horses onto a property (not just in the event of a disease outbreak!) should be isolated for 2-3 weeks and their temperatures checked twice daily during this time.** Any horse which shows suspicious signs of illness (temperature >38.3°C, nasal discharge, difficulty in swallowing, swollen throat or glands) should be isolated until strangles is confirmed or ruled out by veterinary examinations and laboratory investigations.

**Any horse which has strangles should be immediately isolated from physical contact all other horses.** There should be no physical contact between infected and non-infected horses during a strangles outbreak, which may mean a boundary of an empty paddock between the groups. Infected horses should have their own water and feed troughs, rugs, halters, grooming kit and tack and **absolutely no equipment used for the affected horses should be allowed near other horses.**

One person should look after the affected horses and avoid contact with all other horses. If not possible, affected horses should be handled and fed last, after the healthy horses.

#### **Disinfection and Hygiene:**

The handler of sick horses should immediately shower and wash their hair, wash their clothes and disinfect their shoes/boots after caring for the sick horses.

**All equipment, stables, fences, trailers, etc. should be thoroughly disinfected using a phenolic disinfectant, e.g. Virkon.** During a strangles outbreak, it is important to disinfect water troughs, feed buckets and fences AT LEAST ONCE if not TWICE DAILY. **This is a major factor in helping control spread of the disease.**

#### **Retesting to Ensure the Horse is not a Carrier:**

Every horse that has been diagnosed with strangles should have repeat testing to ensure complete clearance of the bacteria. This involves **3 repeat tests (PCR and/or culture of nasal swabs or washes) each 1-2 weeks apart.** Horses that test positive should be scoped to look inside the guttural pouches for presence of pus. **Horses that are not retested could remain asymptomatic carriers and continue to infect other horses or become sick themselves at a later date.** If a horse has had strangles previously, it should not be allowed onto a new property before documentation of laboratory analysis of 3 negative tests is provided.

Once fully recovered with no further shedding of bacteria, the affected horse can be turned out onto clean pasture (remember strangles remains on pasture for around 4 weeks).

***Does Strangles need to be Reported to the DPI?***

Strangles is NOT notifiable in the ACT but IS notifiable in NSW. Often the laboratory/veterinarian that receive a positive test will pass on the information to the DPI.