BALLARAT
VETERINARY
PRACTICE
ABN 40 119 407 715
www.bvp.com.au

1410 STURT ST.,
LAKE WENDOUREE, 3350
PH. (03) 53311533
FAX (03) 53313337
bvp@bvp.com.au

1329 HOWITT ST.
WENDOUREE, 3355
PH. 53392266
FAX 53381588
wvc@bvp.com.au

EQUINE CLINIC
MIDAS ROAD
MINERS REST, 3352
PH. 53346756
FAX 53346800
bvpec@bvp.com.au

PO BOX 220
WENDOUREE VIC 3355

Partners
Dr. I. C. FULTON, B.V.Sc. (Hons.), M.S. (Michigan), F.A.C.V.Sc.
Registered Specialist in Equine Surgery
Dr. R. H. LAWRENCE, B.Vet.Med.(Lond.)
Dr. B. H. ANDERSON, B.V.Sc. (Massey) M.V.Sc., M.S., MACVSc., Diplomate A.C.V.S.
Registered Specialist in Equine Surgery
Dr. S. A. GREEDY, B.V.Sc., M.A.C.V.Sc.
Dr. A. R. CUST, B.Sc., B.V.Sc. (Hons.), M.V.Sc.

Laminitis: No Foot, no horse.

Dr Ciaran Gobl

The old saying, “no foot, no horse” still stands. The entire weight of a horse’s body is loaded onto its 4 feet when standing and onto only one foot when galloping. The foot is made up of multiple components, the deepest of which is the pedal bone (also called the coffin bone, distal phalanx or third phalanx). This bone is suspended within the hoof by 2 layers of sensitive laminae, one attached to the pedal bone (dermal laminae) and the other attached to the inside of the hoof wall (epidermal laminae). These layers are made up of about 600 finger-like projections that interlock with one another maintaining the stability of the pedal bone within the hoof.

Laminitis or “founder” is the term used to describe the disruption of this sensitive connection and the instability it creates. If these sensitive laminae are damaged, the pedal bone can move within the hoof. The pedal bone can move in two ways. It can rotate due to the pull of the deep digital flexor tendon (DDFT) or it can sink towards the sole of the foot under the pressure of all the weight of the horse depending on how severely the laminae are damaged.

Clinical Signs: Laminitis is extremely painful. Horses with an acute episode of severe laminitis commonly show unwillingness or inability to walk, an increased respiratory rate and often stand with the fore limbs “camped out” in front and the hind limbs under the body in an effort to take weight off the front feet. There is almost always increased digital arterial pulses detectable on both sides of the pastern region and the feet are hot to touch. In very severe cases, the horse will lie down a lot as it is too painful to stand. Commonly, both front feet are affected, but all four feet and even one singular foot can be affected depending on the cause.

In severe chronic cases of laminitis, there may be an obvious depression around the coronary band, evidence of sinking of the pedal bone. In mild chronic cases of laminitis, the clinical signs are similar but less pronounced. These horses are lame, but are still able to walk. There is usually increased digital pulses and mild heat in the affected feet. It is important to remember that damage to the sensitive laminae is irreparable, and horses that have suffered from laminitis previously, have a very high chance of foundering again. Horses that have suffered from laminitis are more likely to suffer from foot abcesses and stone bruises than horses that haven’t.

If you suspect your horse has laminitis, try to move the horse, slowly, to a deeply bedded stall and ice/cold hose the feet. NEVER trot a horse when laminitis is suspected.

Diagnosis: Diagnosis of laminitis is best made by a veterinarian after a thorough clinical exam and a detailed history. Radiographs are helpful to determine the severity of pedal bone sinking/rotation, to aid the farrier devise a treatment plan and to assess the effectiveness of such a treatment protocol. Prevention, however, is always better that cure, but one must be fully aware of the causes of laminitis to prevent it.

Causes: There are a number of known causes of laminitis in horses which are included in the following list. The exact mechanisms by which they cause laminitis are unknown and research is still ongoing.

- Over feeding. Excessive intake of carbohydrate from either grass or grain has been shown to induce laminitis.
- Trauma- working horses on hard ground without adequate shoeing can cause “road founder”
- Toxins in the bloodstream of ill horses (when a horse has diarrhoea, colic, colitis, retained foetal membranes, metritis- uterine infection)
- Excessive weight bearing- if a horse has been favouring one leg over another due to some degree of lameness, the favoured leg can develop laminitis due to excessive weight bearing. This is called supporting limb laminitis.
- Corticosteroid associated laminitis
    - This includes exogenous corticosteroids, i.e. those found in pharmaceuticals, and endogenous corticosteroids, those which are naturally occurring in the body.
    - Increased levels of naturally occurring corticosteroids are found in horses suffering from equine metabolic syndrome (EMS), insulin resistance (IR) and equine Cushing’s disease (pituitary pars intermedia dysfunction).

Treatment: An acute episode of laminitis is considered a medical emergency and the main aim is to prevent or limit the extent of the damage to the sensitive laminae. This is achieved by cooling/icing the affected limbs in the early stages, padding the soles of the feet and/or putting the horse in a deep bedded box to prevent further trauma to the feet. Pain relief (usually phenylbutazone or flunixin meglumine) is very important. However, too much pain relief can have detrimental effects, as the horse that cannot feel pain may become too active and cause further damage.

In the long term, corrective shoeing and trimming are the cornerstones of treating a laminitic horse. There is no cure for laminits, only strict management to help maintain a sound horse and to prevent further bouts of laminitis. It is critical that your vet and your farrier work closely together to keep your horse sound.

Prognosis: Serial radiographs are the best indicator to monitor the progress of your laminitic horse. Unfortunately, it is not uncommon for some horses to be so severely affected that euthanasia is the only option. Here are some practical tips to prevent laminitis from occurring in your horse.

1. Maintain your horses in an appropriate body condition, particularly in ponies, “cresty neck” horses, insulin resistant and untreated Cushing’s horses.
2. Restrict intake of rich grass (e.g. in the spring and the autumn) by using a muzzle or keeping your pony on “scrub” pasture.
3. Exclude high amounts of easily digestible grain from the diet.
4. Store grain safely, where horses are unable to access it, even if they are loose!
5. Regular hoof trimming/shoeing by a recognised farrier.
6. Avoid treating horses with any drug without prior consultation with your veterinarian
7. Cryotherapy. Cold hosing/icing has been shown to be effective against laminitis in the very early stages and at times when the horses are at a greater risk (e.g. after engorging on grain or retained placenta.)