

Laminitis (Founder)

General Information

Laminitis (founder) is a painful condition characterized by inflammation of the blood vessel-filled laminae holding the coffin bone to the inside of the hoof. The term *laminitis* is used more to describe the sudden onset of laminar inflammation, while the term *founder* is more commonly applied to long-standing laminitis. Laminitis is not usually seen in foals under 6 months of age. The more severe the laminitis is at its onset, the greater the chance for chronic problems and recurrence.

In normal horses, 2 forces influence the position of the coffin bone within the hoof: the downward push of the horse's weight and the upward pull of the deep flexor tendon as it attaches to the sole surface of the coffin bone.

In horses with laminitis, when the downward force is greater than the upward pull of the flexor tendon, the coffin bone "sinks" in the hoof capsule. More commonly, however, inflammation around the coffin bone helps to push the toe down while the deep flexor tendon pulls the toe down and backward, causing coffin bone "rotation." At the same time, inflammation of the laminae causing swelling, increasing the pressure within the rigid hoof. This increased pressure damages the blood vessels of the laminae.

Causes of Laminitis

Laminitis can occur with no apparent cause, but often there is some underlying cause. The underlying condition can often be cured, but the laminitis may persist, leaving the horse with chronic (long-term) founder. If not a cause for euthanasia, chronic founder requires special attention for the rest of the horse's life.

The following factors contribute to the onset of laminitis:

___ *Imbalance of exercise to food intake.* A fit (lean) athletic horse that is worked harder than usual on a hard surface can develop "road founder." A cresty-necked pony or horse with a genetic propensity for being overweight, that eats too much spring pasture, or that eats too much grain can develop laminitis.

___ *Endotoxins from illness.* Certain bacteria can produce endotoxins, which damage the laminar blood vessels. Endo toxins can be produced in such diseases as severe colic, uterine infections, retained placenta, diarrhea and pneumonia, and with complications after foaling.

___ *Cortisone release or use.* Stress causes the adrenal glands to release cortisone. This stress can be acute (over a few days) or chronic (over several weeks or more). Stressful situations for your horse may include training, competition, and shipping. Any cortisone type of drug, such as dexamethasone or triamcinolone, should be used only under

veterinary direction and only when absolutely necessary. In treatment of certain immunologic diseases, cortisone is potentially life saving, but the large doses necessary may cause laminitis.

___*Metabolic diseases:* Certain disorders like Cushings, Insulin Resistance, Hypothyroidism or Polysaccharide Storage Myopathy develop laminitis from increased production of cortisone and high circulating glucose levels. These horse's are also generally overweight despite a low quantity of food intake. Determining and correcting the correct underlying cause of the laminitis is critical to the life of the horse.

___*Conformation or genetic predisposition.* Heavy horses or ponies are more likely to develop laminitis. Also, horses with thin or flat soles do not have as much protection of the coffin bone.

Clinical Signs of Laminitis

- Heat in the feet.
- Increased digital pulse.
- Pain on application of hoof testers near the pint of the frog.
- Sinking or rotation of the coffin bone on x-rays.
- Reluctance to walk or trot as well as an abnormal stance.
- Depressed coronet.

Important Points in Treatment

___*Radiographs (x-rays):* Radiographs of the affected feet can evaluate the position of the coffin bone. Repeated radiographs can help detect any sinking or rotation.

___*Medication:* It is important to give medication as prescribed. Though your horse may appear more comfortable after treatment has begun, it takes considerable time to reduce inflammation in the foot. Laminitis commonly recurs, especially if the horse is not medicated as directed.

___*Foot protection:* Keep your horse on a soft surface until this episode of laminitis is completely resolved. Increase the thickness of its regular bedding, and add sand to its paddock. Provide support for the frog, as with pads. When applying frog support, do not place tape on or over the coronet. This will decrease an already compromised blood supply to the foot. Check the position of the frog support several times daily to make sure it is in its proper position.

___*Diet:* Exercise your horse only enough to maintain its body weight. Do not overfeed, and monitor its body weight to prevent weight gain.

___*Exercise:* Exercise your horse regularly after the episode has subsided, but careful not to overwork an out of shape horse as overworking can lead to recurrence of laminitis.

___*Shoeing:*

___Shoeing changes are sometimes necessary and are generally formed on a case by case basis. Regular keg shoes without pads or support packs are

almost never recommended and cause more pain by applying pressure to the toe.

____ We (your veterinarians) should consult with your farrier to discuss your horse's shoeing.

Prevention of Laminitis

The most important way to prevent laminitis is to avoid stressful situations and hoof trauma:

- Bed your horse on sole-supporting bedding, such as thick shavings.
- Do not apply tape around the coronet.
- Don't allow your horse to walk on gravel or rocky surfaces without adequate shoeing.
- Carefully monitor your horse's intake of carbohydrates and body condition.
- Allow your horse to exercise each day.
- Have your horse shod regularly and avoid trimming the feet too closely.