



Laminitis

Prevention and Treatment

Every day veterinarians across the country see hundreds of cases of laminitis, a painful disease which affects the horse's feet. What's especially alarming is that some cases are preventable. In fact, it may be that we are killing our horses with kindness.

Consider that a common cause of laminitis is overfeeding--a management factor that is normally within our control.

By learning more about laminitis, its causes, signs and treatments, you may be able to minimize the risks of laminitis in your horse, or control the long-term damage if it does occur.

LAMINITIS DEFINED

Laminitis results from the disruption (constant, intermittent, or short-term) of blood flow to the sensitive and insensitive laminae. These laminae structures within the foot secure the coffin bone (the wedge-shaped bone within the foot) to the hoof wall. Inflammation often permanently weakens the laminae and interferes with the wall/bone bond. In severe cases, the bone and the hoof wall can separate. In these situations, the coffin bone may rotate within the foot, be displaced downward ("sink") and eventually penetrate the sole. Laminitis can affect one or all feet, but it is most often seen in the front feet concurrently.

The terms "laminitis" and "founder" are used interchangeably. However, founder usually refers to a chronic (long-term) condition associated with rotation of the coffin bone. Whereas, acute lamini*tis refers to symptoms associated with a sudden initial attack, including pain and inflammation of the laminae.

CAUSES

While the exact mechanisms by which the feet are damaged remain a mystery, certain precipitat*ing events can produce laminitis. Although lamini*tis occurs in the feet, the underlying cause is often a disturbance elsewhere in the horse's body. The causes vary and may include the following:

- Digestive upsets due to grain overload or abrupt changes in diet
- Sudden access to excessive amounts of lush forage before the horse's system has had time to adapt; this type of laminitis is known as "grass founder"
- Toxins released within the horse's system
- High fever or illness; any illness that causes high fever or serious metabolic disturbances has the potential to cause laminitis, e.g., Potomac Horse Fever
- Severe colic
- Retained placenta in the mare after foaling
- Consumption of cold water by an overheated horse
- Excessive concussion to the feet, often referred to as "road founder"
- Excessive weight bearing on one leg due to injury of another leg or any other alteration of the normal gait
- Various primary foot diseases
- Bedding that contains black walnut shavings
- Prolonged use or high doses of corticosteroids

RISK FACTORS

Factors that seem to increase a horse's susceptibility to laminitis or increase the severity of the condition when it does occur include the following:

- Heavy breeds, such as draft horses
- Overweight
- High nutritional plane
- Ponies
- Unrestricted grain binges, such as when a horse breaks into the feed room (If this happens, do not wait until symptoms develop to call your veterinarian. Call immediately so corrective action can be taken before tissue damage progresses.)
- Horses who have had previous episodes of laminitis

SIGNS

Signs of *acute laminitis* include the following:

- Lameness, especially when a horse is turning in circles
- Heat in the feet
- Increased digital pulse in the feet
- Pain in the toe region when pressure is applied with hoof testers
- Reluctant or hesitant gait ("walking on eggshells")
- A "sawhorse stance," with the front feet stretched out in front to alleviate pressure on the toes and the hind feet "camped out" or positioned further back than normal to bear more weight.

Signs of *chronic laminitis* may include the following:

- Rings in hoof wall that become wider as they are followed from toe to heel

- Bruised soles or "stone bruises"
- Widened white line, commonly called "seedy toe," with occurrence of seromas (blood pockets) and/or abscesses
- Dropped soles or flat feet
- Thick, "crested" neck
- Dished hooves, which are the result of unequal rates of hoof growth (The heels grow at a faster rate than the rest of the hoof, resulting in an "Aladdin-slipper" appearance.)

TREATMENT

The sooner treatment begins, the better the chance for recovery. Treatment will depend on specific circumstances but may include the following:

- Diagnosing and treating the primary problem (Laminitis is often due to a systemic or general problem elsewhere in the horse's body.)
- Dietary restrictions
- Treating with mineral oil, via a nasogastric tube, to purge the horse's digestive tract, especially if the horse has overeaten
- Administering fluids if the horse is ill or dehydrated
- Administering other drugs, such as antibiotics to fight infection; anti-endotoxins to reduce bacterial toxicity; anticoagulants and vasodilators to reduce blood pressure while improving blood flow to the feet (Corticosteroids are contraindicated in laminitis, as they can actually cause laminitis or exacerbate existing cases.)
- Stabling the horse on soft ground, such as in sand or shavings (not black walnut), and encouraging the horse to lie down to reduce pressure on the weakened laminae
- Opening and draining any abscesses which may develop
- Cooperation between your veterinarian and the farrier (Techniques that may be helpful include corrective trimming, frog supports, and therapeutic shoes or pads.)

LONG-TERM OUTLOOK

Many horses that develop laminitis, make uneventful recoveries and go on to lead long, useful lives. Unfortunately, others suffer such severe, irreparable damage that they are, for humane reasons, euthanized.

Your equine practitioner can provide you with information about your horse's condition based on radiographs (x-rays) and the animal's response to treatment. Radiographs will show how much rotation of the coffin bone has occurred. This will help you make a decision in the best interest of the horse *and help the farrier with the therapeutic shoeing.*

MANAGEMENT

Importantly, once a horse has had laminitis, it may be likely to recur. In fact, a number of cases become chronic because the coffin bone has rotated within the foot and because the laminae never regain their original strength. There may also be interference with normal blood flow to the feet, as well as metabolic changes within the horse. Extra care is recommended for any horse that has had laminitis, including:

- A modified diet that provides adequate nutrition based on high-quality forage and without excess energy, especially from grain
- Routine hoof care, including regular trimming and, in some cases *therapeutic* shoeing (Additional radiographs may be needed to monitor progress.)
- A good health-maintenance schedule, including parasite control and vaccinations to reduce the horse's susceptibility to illness or disease
- Possibly a nutritional supplement formulated to promote hoof health

SUMMARY

The best way to deal with laminitis is preventing the causes under your control. Keep all grain stored securely out of the reach of horses. Introduce your horse to lush pasture gradually. Be aware that when a horse is ill, under stress or overweight, it is especially at risk. Consult your equine practitioner to formulate a good dietary plan. Provide good, routine health and hoof care. If you suspect laminitis, consider it a medical emergency: ***Notify your veterinarian immediately.***