



LAMINITIS

Prevention And Treatment

Every day veterinarians across the country see hundreds of cases of laminitis, a painful disease that affects the horse's feet. What is 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 and 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.



inflammation of the laminae.

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 laminitis refers to symptoms associated with a sudden initial attack, including pain and

CAUSES

While the exact mechanisms by which the feet are damaged remain a mystery, certain precipitating events can produce laminitis. Although laminitis 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 (such as excess grain, fruit or snacks) 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.
- 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

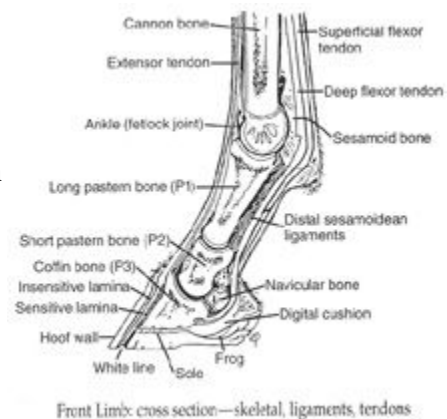
Factors that seem to increase a horse's susceptibility to laminitis or increase the severity of the condition when it does occur include the following:

- Heavy breeds, such as draft horses
- Overweight body, cresty necks
- High nutritional plane (feeding large amounts of carbohydrate-rich meals)
- Ponies, Morgans, miniature horses and donkeys
- 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
- Older horses with Cushing's disease

SIGNS

Signs of *acute laminitis* include the following:

- Lameness, especially when a horse is turning in circles; shifting lameness when standing.
- Heat in the feet.
- Increased digital pulse in the feet (most easily palpable over either sesamoid bone at the level of the fetlock).
- 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 positioned under them to support the weight that their front feet cannot.



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, "cresty" 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

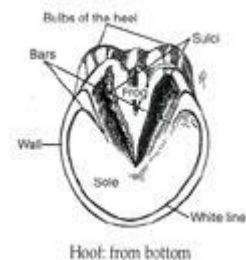
The sooner treatment begins, the better the chance for recovery. Treatment will depend on specific circumstances but may include the following:

- Diagnosing and treating the primary problem (laminitis is often due to a systemic or general problem elsewhere in the horse's body).
- Dietary restrictions; stop feeding all grain-based feeds and pasture. Feed only grass hay until advised by your veterinarian.
- 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; and 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 that may develop.
- Cooperation between your veterinarian and the farrier (techniques that may be helpful include corrective trimming, frog supports and therapeutic shoes or pads).
- Your veterinarian may be able to advise you on new therapies that may include standing your horse in ice water to prevent the onset of laminitis after a predisposing cause such as a retained placenta or a known grain overload.

LONG-TERM OUTLOOK

Some 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 and may also illustrate abscesses or gas accumulation that will affect the therapy of your horse. This will help you make a decision in the best interest of the horse and help the farrier with the therapeutic shoeing.

MANAGEMENT

It's important to note that 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 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, digestible fiber (beet pulp) and oil. Avoid excess carbohydrates, 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 (biotin supplements are popular for promoting hoof growth).
- Avoid grazing lush pastures, especially between late morning and late afternoon hours, since plant sugars are the highest during these times. Restrict pasture intake during spring or anytime the pasture suddenly greens up.

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 and notify your veterinarian immediately.

For more information, contact your veterinarian.

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