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## "Founder" or Laminitis

Laminitis or "founder" is a disease that has impacted horses through the ages. Fossil evidence suggests ancient horses dealt with laminitis dating back over 1.8 million years ago. It may have been first mentioned by the ancient Greek historian and philosopher Xenophon, who lived from about 430 to 354 B.C. He wrote about a disease called "barley surfeit" (surfeit translates to excess) and said: "Diseases are easier to cure at the start than after they have become chronic and have been wrongly diagnosed."

Laminitis refers to inflammation within the laminae of the horse's feet. Founder is a term broadly used to describe laminitis, typically denoting a more severe form of laminitis. The laminae are delicate structures which hold the bone within the hoof capsule (coffin bone) to the hoof wall. It would be similar to the structures holding our fingernails to our fingers. However, in the horse, it is much more developed due to the fact that the laminae often carry thousands of pounds of pressure transferred from the ground surface to the bony column of the leg. Therefore, when the laminae become inflamed, the horse shows varying amounts of soreness corresponding to the degree of inflammation in the laminae.

What causes this inflammation? This question has been explored by veterinarians and horse owners for hundreds of years, and we have been able to explain some, but not all, causes. Some of the more common causes would first be any disease processes which cause the horse to have an endotoxic event or to circulate endotoxins within its blood system. A few examples of this would be a retained placenta, grain overload, diarrhea or colitis, or severe pneumonia. A second category is laminitis associated with metabolic diseases of the horse. This category encompasses the cases of laminitis initiated by an improperly functioning endocrine system. These are horses that acquire laminitis typically from a diet not compatible with that individual's own metabolic/endocrine systems. For example, such horses are sensitive to diet changes such as green grass and high carbohydrate feeds. Also in this category are horses with PPID or "cushings" disease, which is a disease that alters the horse's circulating blood cortisol levels. The third most common is laminitis initiated by trauma, most commonly referred to as "road founder". This is somewhat self explanatory. The horse's feet, when worked on a surface or in a manner in which they are not accustomed, develop inflammation from the stresses induced by that work. And then there are horses that develop laminitis from unknown causes.

How do you recognize laminitis? These horses present with sore feet. They are often reluctant to move and when they do walk. They are very stiff and painful. They will typically lie down for long periods. When standing, they will shift their weight to the hind legs and stretch their forelegs out in front of them. If your horse demonstrates these signs consistent with laminitis, it is important to seek veterinary treatment as soon as possible. Early treatment will often lessen the severity of the disease and could save the horse's life.



Typical laminitic stance - rocked back.

Many treatments are available and vary dramatically due to the initiating cause of laminitis. If the primary cause is identifiable, then this condition must be addressed in addition to treating the laminitis. An example of this would be horse with a metabolic condition. Diagnostic blood work would be used to diagnose the metabolic condition, then treatment for the condition would be implemented to prevent future laminitic episodes. Therapy for laminitis varies from administration of phenylbutazone (Bute) and stall rest for mild cases to antibiotics, anti-inflammatories, long periods of soaking feet in ice water, acepromazine injections and other vasodilators for more serious cases.

Discussion of these therapies and others is out of the scope of this article, but one method worth mentioning is supporting the foot. In more severe cases, we have had the best results by applying special shoes. This type of shoeing allows the farrier to alter the mechanics of the foot dramatically and re-align the coffin bone by shaping the the shoe in a manner to redistribute weight and mechanical forces in the foot.



Example of special shoe

For millions of years horses have been afflicted with this painful disease and we still do not have all the answers but we do know that Xenophon was correct when he said: "Diseases are easier to cure at the start than after they have become chronic and have been wrongly diagnosed." Early detection and treatment is key to a positive outcome.