

# Equine Laminitis: Part 2: Treatment & Prevention

In Part 1 of this article, I explained what laminitis is and described some current ideas on how it is caused. I discussed the anatomy of the attachments of the hoof wall to the underlying pedal bone as it relates to the development of laminitis, and described how “laminitis triggers” (substances in the blood coming from a variety of causes) free these attachments and allow movement of the coffin bone away from the hoof wall. I gave examples of direct predisposing factors and indirect predisposing factors.

In this article I discuss what you and your equine veterinarian can do to prevent and treat laminitis. Specifically, I discuss how horse owners can help prevent this disease with basic changes in management based on exciting new research on feeds and grazing.

## PREVENTION

The most important thing you can do to prevent laminitis in your horses is to establish a good relationship with an experienced equine veterinarian. They can provide appropriate advice and consultation and help you to recognize breed and individual risk factors when buying horses. Your veterinarian can conduct a pre-purchase exam that can help prevent you from purchasing a horse that has experienced laminitis in the past.

Horse owners should also be able to recognize the signs of laminitis that we discussed in the last article. If you notice these signs, you should call your vet immediately. The longer a horse shows signs of laminitis, the more permanent the damage. Laminitis may be progressing before you actually see the signs. Time is a critical factor. If you know that your horse is at risk for whatever reason, don't wait until you see the signs of laminitis to call your veterinarian.

### Other important points:

- Maintain your horses at a healthy weight and avoid a high grain diet. Prevent your horses from becoming obese on pasture.
- Understand the predisposing factors and be alert for the classic signs of these problems. These diseases include Equine Metabolic Syndrome (EMS), Equine Cushing's disease (PPID), and others.
- Prevent accidents like grain overload by paying attention to your methods of grain storage.
- If your horse breaks into the feed room and you suspect grain overload, call your veterinarian immediately.
- Maintain your horse's feet regularly with the help of a skilled farrier.
- Recognize and do what you can to avoid acute diseases that can cause laminitis. Examples include retained placenta in mares, colitis, pneumonia, and certain types of colic. If they do occur, contact your veterinarian for prompt and appropriate treatment of the primary problem, which will reduce the possibility for laminitis to occur.

### VETERINARY ASSESSMENT & TREATMENT

Assessment of the feet for severity of coffin bone rotation is done using radiography (x-ray). Treatment depends on the severity of the rotation. Prompt and effective veterinary treatment of the predisposing cause of the laminitis is critical to successful treatment of the laminitis itself. Treatment of laminitis involves attempts to break the cycle that takes place in the foot by the use of anti-inflammatories and pain relievers. Historically we have used drugs that opened the vessels in the feet. New research has shown that applying and maintaining ice to the feet can prevent laminitis in horses at risk for it. However, these same studies show little effect in treatment of laminitis once the process has

already started.

There are many different approaches veterinarians use to mechanically treat acute laminitic cases. The main goals are to provide pain relief, stabilize the coffin bone in the foot (minimize its rotation), and maintain the circulation of the foot. How effectively these last two goals are achieved using different approaches is not well agreed upon at this time. Some ideas that are currently in favor include increasing the angle of the foot with a wedged heel, and providing support to the cup of the sole to help prevent rotation. In many practices, high-density Styrofoam blocks are taped to the soles of the feet to give the horse comfort and to help break the cycle of pain and inflammation in the feet.

In our practice, we generally do not favor shoeing horses in the early stages of laminitis. Shoeing is a critical part of later treatment. Once a horse has been affected by laminitis and has gone through the early stages, corrective shoeing and trimming by an experienced farrier is a critical part of management. The relationship between horse owner, veterinarian and farrier is a vital one in the management of these horses.

#### NEW THOUGHTS ON PREVENTING LAMINITIS – NSC'S

Important new information for horse owners is the discovery that non-structural carbohydrate "NSC" (also known as fructan or soluble sugar) are strongly linked to the development of laminitis. The highest risk is for horses grazing stressed, slow growing grass in the spring and fall. These stressed plants have the highest levels of NSC and so are the most dangerous to horses.

This research is very important to us here in the high desert, where conditions are inconsistent and plants are placed under so many different stresses from day to day. This new information fits with the high incidence of laminitis that we see in grazing horses in early spring and late fall in our area. Both plant type and environmental stress on the plant

are very important to their NSC level. It is not necessary to understand the details underlying this research, but it is very important for horse owners to understand the general concepts in preventing laminitis.

Here are some of the main points:

- Cold weather grasses like fescue and brome have higher NSC's than native pastures and warm weather grasses like gramma grass. Surprisingly, alfalfa is often lower in NSC's than many grasses.
- Testing growing grasses and hays for NSC's is possible through some forage laboratories and is the best way to know the laminitis risk associated with a given forage.
- Horse owners should restrict or avoid grazing during times of highest plant stress. The most dangerous periods are spring and fall, especially during periods of warm days and freezing nights. Another dangerous time is right after moisture breaks a drought. In very cold weather, the green stubble found at the base of a completely dormant plant may be very high in NSC's and very dangerous to a susceptible horse. Avoid grass under these conditions.
- Overgrazing a pasture to limit intake of green grass is not a good option, as the highest level of NSC's is in the stem base. NSC's are lower in plants at night and early morning, so limiting turnout time to these times makes sense.
- Bran is very high in NSC's, so is not a good supplement for horses at risk for laminitis.
- Soaking hay is a way to drastically reduce NSC's in hays fed to at-risk horses and horses suffering from ongoing laminitis.
- Grazing muzzles and dry lot grazing in horses predisposed to laminitis is a way to provide exercise while preventing excessive intake of forage.

If you have any questions about assessment or treatment, call your equine veterinarian.

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