

Balanced Hooves for Balanced Horses: Debilitating Diseases and Management Techniques

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A healthy, balanced horse starts with healthy, balanced hooves. While conformational imbalances are more readily addressed with proper management and trimming, diseases of the hoof require more intense management. Two major debilitating diseases of the hoof are navicular syndrome and laminitis. Long-toe-low-heel conformation can contribute to navicular syndrome by increasing the strain of the deep digital flexor tendon and the pressure placed on the navicular bone. Additionally, horses with heel pain tend to land toe-first. While this reduces the initial impact on the back of the hoof, long-term toe-first placement results in increased strain on the flexor tendon and navicular bone. Navicular syndrome is a progressive disease with therapies aimed at slowing down the progression (steroid injection to quiet inflammation, Osphos (bisphosphate) to reduce bone remodeling) and increase comfort.

Proper trimming and shoeing can go a long way supporting a horse with navicular syndrome. Whether the conformation is upright or long-toe, consulting with your farrier to adjust the heels and breakover to promote flat or heel-first placement will help to reduce the strain placed on the deep digital flexor tendon and navicular bone. Elevating the heel with a wedge is one way to promote heel-first placement as well as to reduce the overall tension placed on the deep digital flexor tendon. Egg-bar, reverse shoes or other forms of bar shoes provide additional heel support by increasing the surface area for better weight distribution. Additional support may be achieved in the form of a pad and/or packing material as added cushion on impact.

Navicular syndrome has been known to flare-up or appear in horses given time off for one reason or another. Horses that remain uncomfortable in wedge or bar shoes may benefit from a more dynamic shoe. Wedges, natural balance shoes and other methods of reduced breakover provide the most benefit to horses while in motion. In comparison, Rocker shoes are tapered at both the toe and heel. They extend the principle of optimizing breakover by allowing horses to adjust the position of their hoof while in motion and at rest. The added dynamic provides a component of comfort for some horses suffering from navicular syndrome.

While navicular syndrome causes pain in the heel of the hoof, laminitis results in dorsal (toe) pain. Laminitis may involve rotation of the coffin bone, sinking of the coffin bone, or a combination of the two. Laminitis resulting in sinking is often referred to as fatal sinker syndrome. As the name implies, sinking is more severe with a poorer prognosis, requiring intense management. Current hoof support for sinkers include casting to help distribute/disperse weight, hoof wall ablation and pinning the bone. Sinking is often an acute process with little to no warning signs and should be dealt with immediately at a referral practice. In contrast, rotational laminitis is more variable in severity. The inflammation within the hoof capsule weakens the connection between the structures within the hoof. The natural "pull" of the deep digital flexor tendon, which attaches to the caudal (back) of the bone places tension on the bone and contributes to the resultant rotation. Therefore, the mainstay principles related to hoof care for acutely laminitic horses focus on reducing inflammation and relieving tension on the deep digital flexor tendon. As with navicular syndrome, tension can be relieved with wedging the heel up, which is the most common shoeing method for dealing with laminitis.

Determining the degree to which a hoof should be wedged is best based on radiographs (x-rays). Radiographs provide information on the degree of rotation, whether sinking is involved, and evidence of chronic laminitis. The degree of rotation viewed on radiographs influences how a hoof should be trimmed and the type of wedge placed. As a horse recovers from a laminitic episode the wedge may be able to be reduced based on how a horse responds to initial therapy and the amount of sole measured on radiographs. Chronic laminitic horses are more likely to remain in a wedged shoe.

As a diagnostic tool for acute laminitis in general, radiographs have poor sensitivity. Various measurements related to distance between the hoof wall and the coffin bone, the angle of the coffin bone to the ground and evidence of a gas line provide indications of present laminitis in addition to clinical signs (shifting weight, increased digital pulses). However, horses have a high degree of variation and the measurements taken are compared to a range of averages. A horse with values that read “normal” may be different from their actual normal. The sensitivity of radiographs during an acute laminitic event is increased when radiographs acquired prior to the event are available to compare to. Acquiring a set of normal radiographs during a healthy state can be beneficial later.

Ask 10 different vets, 10 different farriers and 10 different owners how a horse should be trimmed or shod and you’ll likely get 30 different answers, each with their own merit and reasoning. There is no question that there are multiple approaches to managing your horse’s hooves. The important thing is that your horse’s feet are managed. The veterinarian supplies information. The farrier applies the information to adjust the mechanics of the feet. As the owner, you are the biggest advocate for your horse in assessing the comfort level and maintaining the bridge of communication. Your horse wins when everyone involved is able to listen and adjust to the changes in and around your horse.

References

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