

# The Effectiveness Of Corrective Shoeing

Some strategies will ease a horse's pain while others provide no benefit

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While it is well documented that horses that are lame or have a diseased hoof will shift weight away from this foot, the way to properly shoe this type of horse always has been up for debate.

Alan Wilson has conducted several studies dealing with horses suffering from laminitis, navicular disease and bone spavin (osteoarthritis of the small tarsal joint).

"We found that in horses with spavin, the point of zero movement (PZM) is more caudal and lateral than in normal horses, confirming that they change their gait to unload the painful medial aspect of the tarsus," says Wilson, an equine researcher at Royal Veterinary College in North Mymms, Hatfield, Herts, England.

## Are Extensions Beneficial?

Wilson conducted a variety of studies to determine if wedge extensions were effective in balancing the bony column of a horse with bone spavin.

First, Wilson and his fellow researchers used a 6-millimeter-thick wedge shoe to alter the foot balance in sound horses with good conformation. As a result, the PZM moved 5 to 10 mm toward the elevated side. However, in another study of sound horses with good conformation, a 20-mm-wide lateral extension was applied to the front and hind feet. The extensions did not alter the PZM.

To deal with horses suffering from bone spavin, 20-mm-wide extensions and 20-mm-long trailers on the lateral heel were used.

"(Trailers and extensions) are assumed to act by helping the horse to redistribute its weight on the lateral side of the foot," Wilson says. "But we have found that both extension and trailer shoes have little consistent effect on the position of the PZM through stance or on the clinical lameness score of these horses, which questions their efficacy as a treatment technique."

## Heel Wedges

Using heel wedges is beneficial for a horse's balance for three reasons, according to Wilson.

- 1.

The heel wedge will flex the distal interphalangeal (DIP) joint, which will unload the deep digital flexor tendon (DDFT).

“The DDFT acts as a spring so if it is allowed to shorten, it will exert less force,” Wilson says.

“The DDFT passes around the navicular bone and exerts a compressive force on the navicular bone.

“When the DIP joint is extended, the angle of tendon deviation around the bone is reduced. This, and the reduced force in the tendon, means that the compressive force on the bone is reduced.”

Wilson adds that there is a 24-percent reduction in force on the navicular bone with a 6-degree heel wedge. The reduction in force is about double in a 21-degree wedge.

## **2.**

The weight transferred through the heels will be increased because the PZM is back toward the heels.

## **3.**

Lifting the heels with a wedge puts less force on the limb while the horse is striding.

The opposite of these three points will occur when a horse is suffering from collapsed heels.

“The DDFT will wrap further around the navicular bone and because the heels are lower, the DDFT will be stretched longer, so tendon force will be higher,” he says.

## **Egg Bar Shoe A Huge Help**

Putting on egg bar shoes will not reduce the force on the navicular bone in sound horses. However, using them on horses with navicular disease, especially those with collapsed heels, has shown a substantial change. The egg bars unload a good deal of force, but not in all cases.

“The mechanism of action is unclear but may relate to redistribution of the load over a larger area of the heels or the reinforcement of the flexible palmar regions of the foot,” Wilson says. “Why egg bar shoes help some horses more than others is unclear, but it may relate to the location of pain or the degree of heel collapse.”

## **Plastic Or Rubber Shoes**

Plastic or rubber shoes don't grip the ground as much, which could be the reason some horses are more comfortable in them, says Wilson.

“Shoes with a lower grip allow the foot to slide more after impact, reducing the jarring experienced by the foot and possibly explaining why some horses are reported to be more comfortable in these shoes,” Wilson adds. “Shoes with a low coefficient of friction with the ground break away earlier, shortening the caudal phase of the stride but the effect or benefit is not clear.”