



The effects of full sole support on the weight distribution of the equine foot.



Karlin WM*, Stewart M, Wilkins PA
 Department of Veterinary Clinical Medicine, UIUC, Urbana, IL 61802

INTRODUCTION

•Purpose: To investigate the use of Soft Ride® as an adjunctive therapy in acute and chronic laminitis.

•Laminitis is a potentially life-threatening condition that affects equine practitioners, horses and their owners.

•Treatment focuses on decreasing inflammation, pain management, providing an alternative area of weight distribution from the dorsal hoof wall, and minimizing rotation and/or sinking of P3 within the hoof capsule.

•There are few studies evaluating the role of sole support in the prevention and treatment of laminitis. However, there is evidence that after placement of polystyrene pads and reverse shoes up to 80% of load can be relieved from the dorsal hoof wall and transferred to the sole. ¹

•Horses with laminitis, especially chronic laminitis, are at increased risk for subsolar abscess formation resulting in increased loading of the opposite limb. Alleviating increased pressure and pain associated with an abscess should decrease the duration of increased weight bearing on the opposite limb.

•Ideally a solution allowing for a rapid decrease in hoof wall loading would be readily available, inexpensive, convenient and easy to use.

***Reference**

• 1. Mostert HJ, et al. The effects of a reverse shoe and polystyrene padding on the biomechanics of the front hoof of the horse. Proceedings of the Equine Laminitis Research Meeting and Panel. 91-98

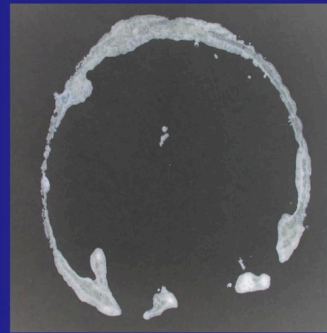


Horse with laminitis showing severe dorsal hoof wall/capsule separation. Horse eventually sloughed the hoof capsule.

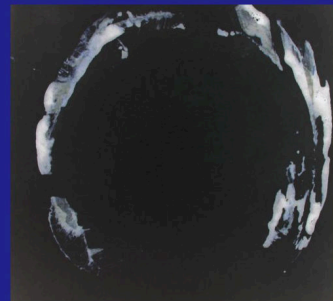
Soft Ride® expands loading across the hoof

Sole Support

Without Soft Ride®
Normal Horse



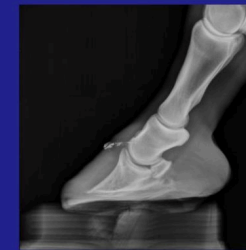
Laminitic Horse



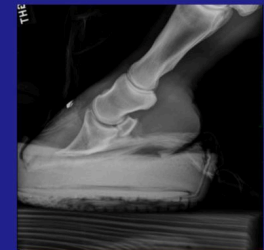
With Soft Ride®
Normal Horse



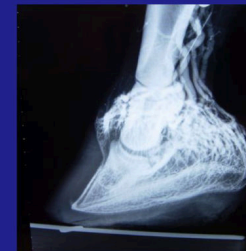
Laminitic Horse



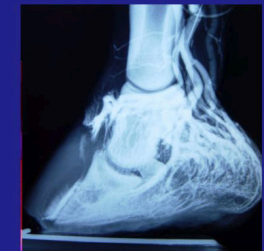
Lateral radiograph with a horse standing on a block



Lateral radiograph with a horse standing in a Soft Ride®



Normal Venogram



Disruption of the blood flow in a horse suffering from laminitis

DISCUSSION and CONCLUSIONS

•There is an increase in solar surface area contact when horses are placed in the Soft Ride®. This increase in surface area allows for a more even pressure distribution, which will help minimize the pressure placed on the dorsal laminae of the equine foot. This decrease in laminar pressure should alleviate clinical signs of pain and slow or eliminate progression of acute laminitis

•The Soft Ride® is easy to use and maintain and is relatively inexpensive, an advantage when treating laminitic horses or horses with other foot problems. These boots are convenient and can be reliably placed by lay individuals prior to definitive diagnosis and treatment by a trained professional.

•The Soft Ride® also allows for easy removal and replacement to assess and treat the foot, which is beneficial in cases requiring extensive and/or frequent treatment.

•Further investigation of the role of sole support in the treatment and prevention of laminitis is needed. Increased public awareness - and the increased availability of research funding allocated to laminitis research- makes this work feasible.

Horses were placed on hard, even ground. An ink like solution was applied to the soles of the fore feet and they were then made to apply full weight on the load scale. The test was repeated with normal and with laminitic patients, both with and without Soft Ride® on. Pressure per square inch was calculated.

Front Forelimb Surface Area

	Soft Ride®	Bare Foot
-Laminitic-	24.3 in ²	7.2in ²
-Normal-	22.5 in ²	6.7 in ²

Front Forelimb- (Even Loading)

	Soft Ride®	Bare Foot
-Laminitic-	11.1 lb/in ²	39.8 lb/in ²
-Normal-	14.3 lb/in ²	53.5 lb/in ²