Barefoot vs. Shod [2008] by Marcia King

A point/counterpoint discussion on the controversial issue of whether horses need to wear shoes.

Back in 2002, Tufts University hosted a seminar for farriers and veterinarians to review the barefoot hoof care methods devised by German veterinarian and author Hiltrud Strasser, Dr.med.vet. Crossing paths at the conference were attendees Robert Cook, FRCVS, PhD, Professor of Surgery Emeritus at Tufts and developer of the Bitless Bridle, and Patrick Reilly, chief of farrier services at New Bolton Center and a researcher working on the development of a protocol for the use of an in-shoe force measuring system.

Cook, who has authored numerous pro-barefoot/anti-horseshoe articles, is an advocate for keeping all horses barefoot - no exceptions. Reilly, who has co-authored an article assessing the Strasser method, believes that individual circumstances dictate whether a particular horse benefits more from being shod or unshod.

For both men, the Strasser conference served to underscore their differing beliefs, and six years later their positions remain unchanged. The two gentlemen share their viewpoints in this article.

The Horse: In general are hooves healthier with or without shoes?

Cook: All horses' hooves are healthier without shoes and barefoot horses are healthier than shod horses. They live longer, happier, less painful lives. Barefoot is a requirement for health. Such a requirement should be accepted as a condition for keeping a horse. Humane management is not just realistic, it is non-negotiable. Shoeing is cruel. Shoes do not "protect" hooves. Quite the opposite: Shoes hurt hooves. The foot evolved to function unshod. Nature evolved the perfect design for grip and slide in all conditions and provided for unsurpassable shock absorption. The foot cannot expand and contract with each step when clamped. Blood supply to the foot is impoverished and horn production becomes deficient. When the foot is prevented from functioning correctly, the pastern, fetlock, canon, and knee are placed at risk. This leads to bone, joint, and soft tissue injuries.

Reilly: The use of shoes absolutely changes the forces exerted upon the hoof, in many cases resulting in improved comfort of the horse. The correct answer is likely to be reduced to an exercise of trial and error based upon the use, environment and genetics of each individual horse. While some horses might require shoes or pads for comfort, the needs of each horse are unique and deserve to be considered on a case-by-case basis.

The Horse: What about therapeutic shoeing?

Cook: The application of a shoe is the antithesis of therapy. The phrase "therapeutic shoeing" is an oxymoron. A fundamental requirement of treatment for any disease is the removal of its cause. As navicular disease and most instances of laminitis are caused by shoeing in the first place, the continued use of any form of shoe to treat such diseases is contraindicated.

Reilly: Applying or removing a shoe will not remedy all potential causes of lameness, especially since the total force exerted on the foot is not changed by the presence or absence of a shoe. However, the location and distribution of the force may be manipulated through the use of shoes, and in many instances it is possible to use shoes to protect injured areas of the foot. Therapeutic shoeing can relieve stresses from the deep digital flexor tendon and the superficial digital flexor tendon, protect damaged structures while healing occurs, and be effective in the treatment of heel pain.

The Horse: Don't certain disciplines, terrain, climate or horsekeeping conditions influence whether a horse be shod or unshod?

Reilly: There are exceptions to every rule, and I would not mandate that any discipline needs shoes as an absolute. Many horses are perfectly capable of living without shoes, regardless of their environment and use. My wife, Karen Monks-Reilly, bred and trained an Anglo-Trakehner gelding that never wore shoes (all the way up) to FEI levels (Federation Equestre Internationale is the international governing body for equestrian sport). This horse was never uncomfortable in turnout, or other activities such as hunter paces. Her subsequent horse was not comfortable when performing the same jobs in the same environment while barefoot, and never experienced a problem while wearing shoes.

Cook: There are no conditions in which a horse or its hooves would be healthier if shod. With proper barefoot management (which includes the temporary use of boots during transition from fettered to unfettered foot), there are no disciplines, climates or terrain that necessitate shoes. If a reining horse is fitted with shoes to enable it to slide, this is for the benefit of the rider, not the horse.

The hooves of horses in the wild neither wear excessively nor overgrow. Barefoot horses that are ridden in 100 mile endurance races finish the race with hooves in excellent condition and, because their horn metabolism is so vigorous, will often need to be trimmed on day three after the race.

The Horse: If the horse spends the majority of its time on soft footing, then it is difficult to adequately stress the hoof to acclimate and build thicker and tougher soles and a thicker bridge between collateral cartilages of the hoof wall. Also, alternating wet and dry spells make it more difficult for hooves to accommodate for consistently hard footing. Therefore, wouldn't horses in these conditions be better off shod?

Reilly: The structure of a horses hoof is a result of all of the environmental factors, including more variables than can be considered accurately. Many horses in less than ideal environments are able to exist comfortably without shoes, and it would be inappropriate to presume to know the needs of each horse with the information provided.

Cook: The answer is "No." The use of river rocks in certain feeding and drinking areas of soft pastures is recommended to stimulate hooves on soft pastures. The use of boots is another option, but shoes are still contraindicated. Evolution has budgeted for changes in the weather.

The Horse: It's said that horses' feet remain healthy until the time they are broke and begin training. That training begun in the horses' second year (when the hoof capsule and its related structures are still immature) coupled with additional confinement and the additional weight of a riders lead to excessive wear on the feet and shoes are placed on the feet for protection.

Reilly: That scenario presumes that feet are healthy if a horse is not stabled, worked or shod and I disagree with that premise. There is ample evidence to suggest that hooves are prone to distortion and lameness in environments even without human intervention. Immaturity, changes in stabling time and turnout, and the weight of a rider would invariably affect the foot. The importance of each variable independently is still largely unknown, and even in total does not assure that the horse would require shoes.

Cook: Whoever says that shoes are needed for the foot's protection because of confinement, training, and the rider's weight has not read the evidence from a decade of barefoot research. Confinement is not an excuse for shoeing. Confinement itself is a cause of suffering and is something to be avoided.

The added weight of a rider is akin to the added weight of pregnancy: It is something that evolution has anticipated.

A barefoot program is not just about hoof trimming, it is about a total management program (generous turnout and, ideally, 24/7 turnout, herd contact etc.). An owner has a responsibility to provide conditions of management that are not harmful to the health of the horse. Unless such conditions are met, they should not own a horse. The infliction of avoidable pain and suffering constitutes cruelty and is punishable by law in many countries.

During transition from shod to unshod, boots can be used to prevent any excessive wear of a hoof with poor horn growth that has not yet fully recovered from having been shod.

Reilly: Dr Strasser maintains that the adjustment period whereby a shod horse's feet are repaired might necessitate a period of 2-3 years of discomfort. That is a long time, in my opinion, to allow a horse to be uncomfortable.

Cook: Feet that have been clamped for many years will take longer to recover, though rarely as long as cited above. The pot is calling the kettle black when farriers deplore the time that horses take to recover from farriery.

The Horse: Some also claim that many of today's horses need shoes because they've had the feet bred right out of them.

Cook: The claim is incorrect. It is disproved by the successful barefoot rehabilitation of countless shod horses over the last 10 years. If the domestic horse was a genetic cripple that needed orthopedic devices on every foot, rehabilitation would not be possible.

Reilly: While there is no absolute evidence to suggest we are breeding horses with a less robust hoof, there are tendencies among different breeds to suggest that hoof quality can be altered through breeding choices. By breeding larger horses, we might have inadvertently triggered a higher incidence of foot-related problems.

The Horse: Is there anything further you'd like to add?

Reilly: Affecting "natural" development is not always associated with dire consequences. Consider the human experience: Anthropologists determined when humans wear shoes, the fourth and fifth toes do not dig into the ground and thus these toes develop differently, becoming less robust among individuals wearing shoes. Since most human athletes wear shoes in spite of this resulting "unnatural" development, it might be argued that the positive effects outweigh the negative effects among humans.

Applying shoes to horses affects the hoof. The short-term affect of shoes is undeniably positive for many horses. In spite of the fact that many horses remain comfortable in shoes for most of their lives, continued studies on the long term effect of shoes is warranted. The cumulative effect of years of regular shoeing might prove to be no more injurious to a hoof than the less robust toes most humans "suffer" as a result of our own shoe use.

Cook: There is nothing but cons for shoeing and nothing but pros for barefoot. There is unequivocal evidence to support this statement. Any point/counterpoint article on this topic should, in the interest of the horse's welfare, make this abundantly clear. Equivocation or obfuscation on this point represents an abrogation of a journalist's responsibility. Leaving the reader to suppose that the evidence can be interpreted to support either view would be a distortion of the truth.

CLUES FROM RESEARCH [A sidebar in the published article]

Robert Bowker, VMD, PhD, a professor in the department of Pathobiology and Diagnostic Investigation at Michigan State University, has been performing research on the equine foot, its biomechanics, and the effect of shoes and different management methods. Most of this work is still in progress and The Horse cannot report on it yet, but Bowker weighs in on the issue.

Various methods and techniques may be useful to help heal certain pathologies of tissues within the foot. However, I do believe that our understanding of the functional biology of the foot in health and disease is still in its infancy, as we may not be fully aware of the best treatment protocol for each condition.

We should ask ourselves what the best way is to prepare the foot of the domestic horse for its designated environment in order to achieve these goals:
1. Safely support the weight and stresses imposed upon it, and
2. Dissipate the energies during movements/athletic activities.
Depending upon the expertise of the farrier or trimmer, the shod foot or barefoot condition may provide similar degrees of foot health, but neither one may be "the best" for the foot. Such foot treatments should protect it from injury and aid the horse in negotiating though its environment. Additionally, they should improve the efficiency of energy dissipation, minimize injurious impact loading of the foot, and, we hope, enhance the neurosensory perception of the foot-ground contact so the horse can maintain its secure footing.

The foot will adapt to the horse's environment and, as a result, certain features may respond positively (become more robust, or stronger) while other parts may respond negatively or appear to atrophy, as they may not be needed in that environment for the horse to remain sound. The onlooker may conclude that the foot looks "different" and, thus, pathologic, but in that environmental situation the horse is sound and the feet healthy. However, transplanting that horse to another environmental situation will potentially place the healthy foot in harm's way, as the tissues needed for loading and dissipating energy, etc., may now not be utilized as efficiently, resulting in more strains and stresses being imposed upon the atrophies tissues, which could cause varying degrees of foot soreness and lameness, depending upon the activity.

If given sufficient time, though, the foot would begin to adapt and the internal structure of the foot would change to the new environmental conditions as the foot does 'need and want' to become sound again. If the horse requires immediate use in the new environment, then some sort of foot protection would or should be employed by riders.

While I personally believe that barefooted conditions are better, one can have the same effects of a shoe in a barefooted condition, depending on how the foot is trimmed (if you remove lots of sole and cut the bars back and trim the frog, then you have a peripherally loaded foot similar to a shod horse).

- Robert Bowker, VMD, PhD

ABOUT THE AUTHOR - Marcia King is an award-winning freelance writer based in Ohio who specializes in equine, canine and feline veterinary topics. She's schooled in hunt seat, dressage, and Western pleasure.