

Why do Horses Wear Shoes?

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It seems such a simple question, and one that is asked many times and if I felt inclined, I could probably write a book on this subject alone. However, as it's a question I get asked so often, here's a my abbreviated opinion (for what it's worth).

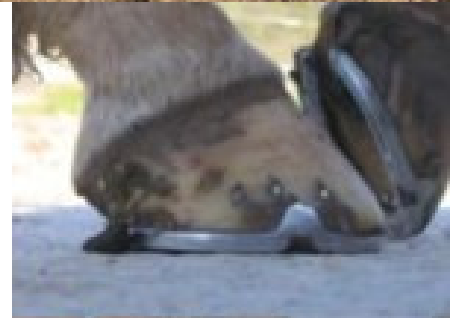
The equine hoof has evolved as a constantly growing structure which, in an undomesticated horse, achieves an equilibrium between growth and wear. However, the act of domesticating the horse appears to have upset this equilibrium, meaning the growth/wear ratio is changed - a case of too little growth and too much wear. But why has growth slowed down and wear increased when the nutrition of the domesticated horse is so much better? Some people believe that this decline in hoof quality is due to genetics - we have literally bred good hooves out of the horse (and often the Thoroughbred is cited as a case in point). However, I see hundreds of hooves in the course of my job and I do not believe this to be the case.

The hoof has an amazing ability to adapt to its environment, adjusting the rate and density of growth in an attempt to keep the horse sound. A horse living out all day, every day on hard, dry ground will develop tough, fast growing feet that are designed to remain protected, allowing the horse to move as much as 20 miles per day to find food. It is interesting to note that the wild horse will grow an entire new hoof capsule in far less time than the domestic horse (6 - 7 months instead of 10 - 12 months).

So why does this happen? What is the trigger for faster, stronger hoof growth? Recent studies suggest that there is a direct correlation between movement and hoof growth. Think about it. The domesticated horse has movement severely limited. Many horses are stabled for large parts of the day, but even a horse living out all the time is still confined to a field, has plenty of grass to feed on (so has little incentive to keep moving to find food), is often segregated - either split into pairs or mares and geldings kept separate which limits herd behaviour, thereby limiting movement.

But rate of growth is not the only factor. A horse living in a highly abrasive, hard environment will need to develop a hoof that is resistant to wear, but a horse living in a softer environment (for instance our native New Forest Ponies) needs to find a way to cope with a lack of wear, ensuring they do not develop overly long hooves which inhibit movement. Resistance to wear seems directly related to the thickness of hoof wall, density of horn tubules and tightness with which those tubules are bonded together, and studies are beginning to show that the horse is able to adjust the quality and density of the hoof growth in response to the resistance pressure the hooves receive from the ground.

But too much wear is not the only reason why horses become sore. Inflammation within the hoof capsule can make a horse sore footed, even when they have not worn their feet too low. We are now beginning to see a connection between this inflammation and the environments we keep our horses in. We all know about the stereotypical fat pony getting laminitis by eating too much grass, but low grade laminitis is becoming increasingly recognised as a reason why our horses go footy at certain times of the year. It is not as simple as a case of our grasses being too



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rich, but is increasingly being thought to have been caused by over-fertilisation of our pastures by certain minerals that are inhibiting the absorption of others. The resulting nutritional imbalances cause low level inflammation in the hoof capsule making horses tender on stones and more susceptible to insulin resistance and laminitis. Both shod and unshod horses are affected, but the problem is spotted much earlier in the unshod horse whose soles are much nearer to the ground and whose hoof capsules distort more under load. This condition is only just coming to our attention, so treatment is still very much in the experimental stage, but we are seeing some excellent results with mineral supplementation and dietary changes.

So why do horses need shoes? In a nutshell, it's simply because we have domesticated them. We expect the hoof to carry a rider over hard terrain without doing anything to prepare the hooves for this work.

So, the hooves need reinforcement to provide protection, prevent excess wear and to cope with the demands of domestication.

Applying a shoe provides that reinforcement - right? Absolutely.

However, there is one small problem (actually, it's quite a major problem). By nailing an artificial metal structure to the hoof, you greatly increase concussion and interfere with the ability of the hoof to function correctly. An independent study by an insurance company found that 90% of equine lameness issues turned out to be associated with the hoof. Does that mean shoes are bad? Of course not. They enable us to enjoy riding while keeping the horse comfortable. But for every action there is a reaction - and that reaction can manifest itself in many ways - ringbone, sidebone, abscessing, bruising, broken walls, thin soles, flare, arthritis, navicular disease, pedal osteitis, ligament damage, tendon damage, tripping, forging. Not all of these problems are directly caused by shoeing, but they are very common in the domesticated horse and there is an increasing body of evidence to suggest that shoeing is part of the problem and not the solution we first thought it was.

The decision of whether to shoe or not should be a choice and not a necessity. If the horse is sound in shoes, but lame without, is your horse truly sound? The cry of "my horse needs shoes because he has terrible feet" is heard often. However, if your horse has terrible feet, maybe it's time you took the shoes off, gave him a rest, and sorted them out before the foot problem develops into a tendon, back, shoulder, or even tooth problem. By all means put the shoes on afterwards, but don't keep him shod to disguise his lameness and continue riding or you could be leaving your horse wide open to other problems further down the road. ALL horses are capable of complete soundness without shoes. High performance without shoes is something you have to work at, but if your horse can't walk across the yard in comfort when his shoes are off maybe it's time to do something about it.

