



# Little Hooves... Big Trouble

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Regular readers of our articles would know that we often base our stories around real life case studies; horses that have navigated the labyrinth of hoof issues about which we write. Case studies breathe life into what can often be a grinding subject.

Let's face it, the equine hoof is not the sexiest subject in the wide world of people and horses. Hooves are heavy and dirty and smelly and are "best left to that farrier chap to deal with, that's what we pay him for and heck no, we don't need to read about hooves in our favourite horsey magazine (is this why hoofcare articles are always partially submerged and lurking like icebergs down at the back of equine publications?!).

Take it from a farrier who works everyday with horses that have career and sometimes threatening chronic lameness issues, horse owners can never learn too much about their horse's hooves. Knowledge is the foundation of observational skills which allow horse owners to recognise and interpret hoof abnormalities that are early warning signs that not all is well. Chronic lameness always has humble beginnings, but from little things big things grow.

Trouble is, if an article doesn't get read, it is wasted on the target audience whom could really benefit from that information.

For this reason, case studies are best served raw. Nowadays this gets called 'click bait', but it is simply the age old journalistic 'hook' and a pair of before and after photos does the trick nicely.

(Images A, B & C opposite show the 'before' and Image D the progress so far.)

Even if you are thinking this is no big deal, that is just a set of long hooves trimmed back to where they need to be and that's all folks, there's nothing to see here... Well, it's not that simple.

Hidden in the photographic minutia are hooves that have been trained to grow back not just to a better length, but also to a better conformational balance. This takes more than just a trim. In fact, any experienced hoof professional would know a change like this is mission impossible within the traditional regime of a 6 weekly trimming cycle.

So, now that you're hooked by the story...

Before consensus blames the state of these hooves on neglectful owners - which is not the case here - this little fellow is a victim of circumstance. He lives remotely from the nearest farrier service which has become progressively harder to access. In a country as vast and empty and increasingly urbanised as Australia is, this scenario is becoming common place. Where are all the farriers when you need one?!

One theme that seems to arise quite regularly in our articles is the great benefit to horses when their owners take over the hoof maintenance task. By trimming less, but more often (aka: the fortnightly touch up trim), equine hooves are able to mimic the natural model of hoofcare; wild horses roaming vast distances of harsh terrain with their hooves getting worn away as they grow. Hoof wear equals hoof growth; a beautiful status quo that grows a beautiful hoof.

Nature had it all sorted. For millions of years.

Then, humans went and fenced the prairie. Horses were confined in relatively small living quarters, standing on soft ground and getting fed artificially. When their hooves inevitably overgrew, they were cut back in a trimming cycle that was repeated every 6-8-10-12 weeks.

With little ponies that don't adequately exfoliate sole and frog without exposure to the harshest of terrain, a six weekly trim cycle cannot even maintain the status quo. The hooves get progressively longer and more deformed with each cycle. If the farrier doesn't come for a further 3 or 4 weeks on top of the first 6 weeks and this scenario is played out for a few successive trimming cycles, it is going to end in tears. Probably sooner rather than later. (See Image A).

This case study shows not only the benefits of owner trimming, but also how the traditional regime of a farrier visit every 6-8 weeks can totally fail a horse. Sometimes it just doesn't work.



The trouble is, humans set about overriding nature's grand plan and bred horses smaller, so little horses could accompany little people into little holes in the ground to retrieve coal. This was effectively 180 degrees opposite of the hitherto 60 million years of evolution that had been breeding bigger horses and this change is not without consequence.

The lack of gravity pushing on hard little toes means they don't shed excess sole and quickly grow too tall to be trimmed back to the correct functional length unless constantly gnawed at.

To make matters worse, the hooves of little ponies are subject to musculoskeletal imbalances that arise from genetic dwarfism (breeding smallest to smallest, generation after generation will bring forth such recessive genes). This genetic deformity bows the hind legs and effectively forces the hind hooves onto the lateral heels, rolling them over at the coronet band and under at the ground surface when they grow excessively long.

All this combined with the chronic inflammation of laminitis (there are only two types of ponies when it comes to metabolic laminitis - those that are laminitic and those that aren't old enough yet), means there is always going to be big trouble with little hooves.

### Time for an overhaul

The only way to fix this little guy's hooves was to break the cycle of overgrowth. He was going to need an extended time of very regular trim cycles, probably once a week to start with and then no further apart than fortnightly.

With the aforementioned scarcity of a reliable farrier service, what better way to achieve this than to send the pony to an equine hoof rehab facility?

The hind hooves, however, needed more than just regular trimming. They needed to be retrained, sort of like a reverse bonsai, forced to grow from gnarled to straight.

What makes such a task very difficult to achieve is that the long side of the hoof (the lateral, the outside) has rolled under. Instead of being one side of an inverted cone that is forced outwards when under weightbearing pressure, it moves further inwards when loaded, thus causing internal pressure and constriction of soft tissue including the frog, digital cushion, lateral cartilage and blood vessels. (See Image A).

The only way to overcome such a fundamental structural defect is with an orthotic support that holds the skeletal column in a more correct framework and removes the constriction on the hoof structures so they can grow to their genetic potential.

One advantage of small hooves is that foal cuffs can be used to provide the perfect amount of lateral support. (See Image B on the page opposite).

Foal cuffs are easy. Even though they are designed to be used for foals and are a single-use glue-on orthotic, why not attach them to little hooves with little screws so they can be regularly and easily removed and reattached so the hooves can be adjusted as needed? After all, hoof wall has the physical properties capable of holding a metal thread, and the use of small but numerous anchor points provides great strength (if it works for the Sydney Harbour Bridge, it should work for little pony hooves).

And work it did.

He had been quite sore in his hind legs and not moving much for quite some time prior to the orthotic correction and this didn't change overnight. But we knew he was feeling better when he lost both of his cuffs when he began hooping around the pony loop. It's a strangely welcome moment when a recovering rehab patient starts to lose hoof attachments because it is able to move like a horse again. More screws needed!



For hooves like these, there is no margin for error within the traditional model.

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### Bigger trouble with little horses

Little hooves are problematic by design.

For millions of years, the hard school of evolution has been growing a bigger horse to accommodate the need for speed to survive predation. Keeping one step ahead of the evolving predators.

It was during this evolutionary upsizing that the tiny creature with multiple toes turned into a big creature with single toes encased in very hard skin. This design works perfectly with the large body weight of the modern horse forcing the hooves to flex both vertically and laterally when loaded. As a result, excess sole is generally exfoliated so hoof length can be 'managed'.



The orthotics were removed permanently after a couple of months when he was able to stand and move without rolling down onto his lateral heels.

He was also getting progressively more comfortable whenever his hind legs were picked up for trimming. This was aided by the addition of magnesium chloride to his diet to help release soft tissue tension and memory, and effectively clear the way for his whole musculature to remodel into a better, more balanced body-frame.

At the time of writing, these hooves are still very much a work in progress and are about halfway through the growth of a new hoof capsule, with the lateral heel clearly filling out to become the inverted cone it must be. One can safely assume that the internal structures are no longer getting constrictive pressure and are also returning to their genetic blueprint. It is simply amazing how much the 'plastic' hoof can remodel if given the opportunity. (See Images A, B and C on the page opposite).

### What about repatriation?

It is one thing to stand back and admire the improvement gained from very regular corrective trimming over a period of several months, but the real test will come when the pony is returned to its own place and the new trimming regime and parameters need to be continued unchanged by the owner.

At a lameness rehab centre such as Mayfield where everyone who is old enough to carry a rasp is able to trim a hoof, it is no big deal, but most horse owners have always delegated hoof trimming responsibilities to their farriers and have never been required to learn how to drive a rasp themselves.

Fortunately, a fortnightly touch up trim is technically quite simple. Yes, it is physically a bit harder than sitting on the couch, but if you learn from experienced teachers who know all the ergonomic shortcuts of the game, it's not that bad.

Moving forward, this little pony's owner will endeavour to maintain the hooves in balance no further apart than fortnightly, with occasional visits by a relatively local equine podiotherapist who has been trained to recognise subtle changes of hoof form and will help to keep the train on its tracks.

Who'd have thought that a horse owner with basic training and a rasp can produce greater and more sustainable changes than a hoofcare professional?

The power of less done, but done more often.

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