



... **DARE**  
TO GO  
**BARE** ...

## CASE STUDY 1 – NAVICULAR

**UNDERUN HEELS, COLLAPSED INTERNAL ARCHES 'FLAT FEET', THIN SOLES,  
NEGATIVE PALMAR AND PLANTAR ANGLES, HIGH/LOW FRONT FEET**

**SALLY BELL**

DEP MEPAUK BHSAI

07990 973913

Fb Dare to go Bare Hoof Rehabilitation

[www.hoof-help.co.uk](http://www.hoof-help.co.uk)



## CASE HISTORY

‘Loki’ a 7 yo sports horse arrived at my yard for rehabilitation in February ’21, primarily with a two year history of variable level intermittent lameness in front. His right fore was lower and flatter than his left fore. Previously he also had intermittent hind limb lameness, and found it hard to stretch over his topline.

He was in extremely light work on straight lines in walk with a tiny amount of trot as his soundness allowed, had previously had huge amounts of box rest or very limited turnout, and all conventional routes had been exhausted, but he ‘never quite came right’.

### TIMELINE PRE ARRIVAL - JANUARY '20:

- HAD FAIRLY EXTENSIVE X-RAYS TO TRY TO PINPOINT THE SOUNDNESS PROBLEMS.
- BACK X-RAYS ALL CLEAR
- FRONT FEET SHOWED NEGATIVE PALMAR ANGLES , RF MORE MARKED THAN LF, BUT NOT REALLY DEALT WITH AS A PROBLEM AT THIS TIME
- BONE CHIPS WERE DISCOVERED IN BOTH HIND FETLOCK JOINTS AND SUCCESSFULLY REMOVED, WITH NO FURTHER PROBLEMS
- HIND FEET ALSO SHOWED NEGATIVE PLANTAR ANGLES.
- SHOD WITH LATERAL EXTENSIONS TO BOTH HINDS.

### TIMELINE PRE ARRIVAL - JULY '20:

- MORE INVESTIGATIONS TO FRONT FEET, X-RAYS AND MRI SCAN, SHOWED UP THE SAME PREVIOUS PROBLEM WITH NEGATIVE PALMAR ANGLE TO RF
- BOTH FRONT FEET ALSO CONTRACTED, WITH COLLAPSED, UNDERUN HEELS, AND THIN SOLES
- INFLAMMATION TO THE COFFIN JOINT AND IT'S COLLATERAL LIGAMENTS SHOWED UP ON MRI, BUT NO STRUCTURAL DAMAGE YET
- TREATED WITH STEROID INJECTIONS INTO BOTH COFFIN JOINTS, AND HEARTBAR SHOES – THIS LOOKED A BIT BETTER MECHANICALLY, BUT HIS OWNER WAS NOT CONVINCED IT MADE ANY REAL DIFFERENCE TO COMFORT OR SOUNDNESS
- STEROID INJECTIONS WERE REPEATED LATE DECEMBER '20 BUT MADE NO DIFFERENCE.



## **LOKI STAYED WITH US JUST OVER 3 MONTHS**

**THE FOLLOWING SLIDES SHOW THE PATHOLOGIES HE ARRIVED WITH IN ALL FOUR FEET, AND HOW THOSE IMPROVED AND/OR RESOLVED IN THAT VERY SHORT TIME**

- IN THOSE 3 MONTHS HE HAD ONLY TIME TO GROW 'HALF A HOOF CAPSULE' - THAT WAS 'MY' HOOF!
- THE TRUE EFFECT OF THESE CHANGES WILL BE SEEN WHEN 'MY' NEW HOOF REACHES THE GROUND, AND THE 'OLD' HOOF HAS GROWN OUT, WITH STILL MORE IMPROVEMENTS LIKELY OVER A LONGER PERIOD OF TIME
- ON ARRIVAL HE WAS LANDING INCORRECTLY TOE FIRST ON ALL FOUR FEET
- *WHEN HE LEFT TO RETURN HOME, HIS HIND FEET WERE LANDING CORRECTLY WHEN BAREFOOT AND HIS FRONT FEET WERE LANDING CORRECTLY WHEN BAREFOOT ON A SOFT SURFACE, OR IN BOOTS AND PADS ON A HARD SURFACE.*
- HE WAS ALSO SOUND ON A CIRCLE IN WALK AND TROT ON THE LUNGE

**HE WAS SOUND AND READY TO START LIGHT RIDDEN WORK AGAIN!**

## **IN A NUTSHELL, THIS IS WHAT I DID**

- Took his shoes off, and fitted boots and pads on all four feet for protection and comfort when necessary – I believe it is vital to keep horses comfortable when transitioning to barefoot
- Trimmed his feet to encourage correct function and balance – the great thing about him being on site was I could trim 'little and often' meaning everything stayed optimal, helping to speed up the improvements
- The boots and pads also provided appropriate stimulation, and so returned correct function to all of the structures in his feet, meaning they were finally able to recover the previous degeneration and gain strength
- Turned him out 24/7 using a mixture of our surface track and large grazing areas – essential for his mind as well as his body and feet
- As he became more reliably sound in his boots and pads, I hand walked him around the lanes to increase the stimulation and therefore the strength in his feet
- He was seen regularly by a chartered physiotherapist, and put on a rehab program of stretches and exercises to help his body – within 5 weeks he had lost all of the compensatory muscular issues he had been suffering from
- We fed him a balanced, sensible, barefoot friendly diet with free access to hay and appropriate grazing
- We added gut support products to help his gut recover the impact that the last couple of years regime had wreaked

**BY REMOVING ALL OF THE NEGATIVE INFLUENCES, AND ADDING OR FACILITATING POSITIVE INFLUENCES, I WAS ABLE TO MAKE A SIGNIFICANT DIFFERENCE IN A RELATIVELY SHORT TIMEFRAME**

# FRONT FEET

LF ON ARRIVAL 13/02/21. SHOD/PRE TRIM. THIS IS THE LESS FLAT FOOT



SHOWING A LATERALLY HIGH IMBALANCE

SITE OF COFFIN JOINT INJECTION LATE DEC '20



EVENT LINES ABOVE AN (IMPROVED) ANGLE CHANGE

HEEL PLACEMENT NOT TOO BAD ON LF



LONG TOE & WHOLE FOOT MIGRATING FORWARDS

NARROW FROG

VERY LITTLE HEEL SURFACE AREA  
NO BAR

CONTRACTED HEELS

THIN AND WEAK DIGITAL CUSHION

UPRIGHT LATERAL CARTILAGES

POSSIBLY THE BEGINNING OF A LATERAL HEEL SHUNT ?



## FRONT FEET

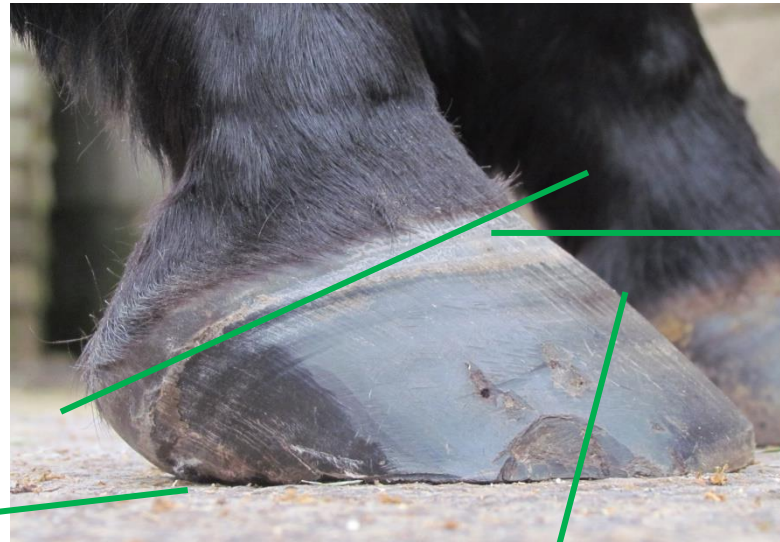
RF ON ARRIVAL PRE TRIM 13/02/21

THIS IS THE FLATTER FOOT WITH A NEGATIVE PALMAR ANGLE

LOKI ARRIVED WITH HIS RF SHOE ALREADY OFF DUE TO A SUSPECTED  
ABCESS A COUPLE OF WEEKS BEFORE



THE RF HAD REASONABLE MEDIO-LATERAL BALANCE



NEGATIVE  
PALMAR  
ANGLE

DORSAL WALL BULLNOSING



HEEL  
PLACEMENT  
WORSE ON RF AND THE WHOLE FOOT IS  
FLATTER AND SHALLOWER

GENERALLY ALL OF THE SAME  
PROBLEMS SHOWING AS IN THE LF,  
WITH THE ADDITION OF THOSE  
HIGHLIGHTED

THE RF HAD A TIDY UP WHILST  
INVESTIGATING THE SUSPECTED  
ABCESS PRE-ARRIVAL, BUT NOTHING  
WAS FOUND AT THIS POINT.



# HIND FEET

PRE TRIM - ON ARRIVAL 13/02/21

LH AND RH ARE BOTH GENERALLY SHOWING THE SAME PROBLEMS....

BUT...



RH



....THE LH HEELS ARE FAR MORE UNDERUN

....THE RH HAS A MORE SIGNIFICANT MEDIO-LATERAL IMBALANCE

BOTH HAVE VERY LONG MIGRATED TOES



LH



NEGATIVE PLANTAR ANGLES

UPRIGHT LATERAL CARTILAGES WITH WEAK AND SHALLOW DIGITAL CUSHIONS



RH



BULLNOSED DORSAL WALLS

LH

LH HEELS MUCH MORE UNDERUN

## LEFT FORE COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS!

The sequence of lateral shots below show the new growth coming down from the coronary band at a much better angle, with no new event lines. By the time of the last photo this has reached half way, fitting with the 3 month timeframe since the shoes came off – you can also see this on the dorsal shots on the next page. The whole foot has stopped migrating forwards, and is coming back underneath the limb. The breakover at the toe is fairly close to optimal by the final photo and once the new growth reaches the ground this should be truly correct. Although the heels were never terribly underun on this foot, if you look at the hairline it has stopped ‘curling under’ at the heels and become straighter, meaning the digital cushion and lateral cartilages here are fuller and stronger – you can see this nicely on the palmar shots on the next page. This has corrected the collapsed internal arch. All of this has created a much better hoof pastern axis – you can see this by comparing the pastern /dorsal hoof wall angles to the ground – there is approximately 10 degrees difference in the first and last photos! This means less strain on joints, tendons, ligaments and muscles further up the limb too.

13/2/21 SHOD ON ARRIVAL



13/2/21 POST TRIM SAME DAY



27/2/21 TIDY UP TRIM 14 DAYS LATER



23/3/21 24 DAYS LATER



28/4/21 36 DAYS LATER



20/5/21 22 DAYS LATER



## LEFT FORE COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS IN EACH ROW!

13/2/21 PRE TRIM

13/2/21 POST TRIM

23/3/21 38 DAYS LATER

28/4/21 36 DAYS LATER

20/5/21 22 DAYS LATER



THE DORSAL SHOTS ABOVE SHOW THE NEW GROWTH COMING DOWN FROM THE CORONARY BAND MUCH MORE TIGHTLY – THE ANGLE CHANGE YOU SEE ABOUT HALF WAY DOWN IN THE LAST PICTURE FITS WITH THE TIMEFRAME - ABOUT 3 MONTH SINCE SHOES OFF AND WE HAVE NO NEW EVENT LINES. MEDIO-LATERAL BALANCE IS CORRECTED AT THE FIRST TRIM ON ARRIVAL.



THE SOLAR SHOTS ABOVE SHOW THE HEELS AND FROG UNCONTRACTING AND BECOMING WIDER APART. THE FROG IS BETTER QUALITY MATERIAL, WITH A HEALTHIER SULCUS. THE TOE IS NOW BACK, MEANING A GOOD BREAKOVER POINT AND THE WHOLE FOOT IS ROUNDER (MORE CORRECT FOR A HORSE OF THIS TYPE). THE HEEL SURFACE AREA HAS INCREASED, THE BARS ARE JUST DEVELOPING. THE WALL /WHITE LINE ARE MUCH HEALTHIER TOO.



THE PALMAR SHOTS ABOVE SHOW THE HEELS AND HEEL BULBS UNCONTRACTING AND BACK OF THE FOOT BECOMING WIDER AND FULLER. THE FROG, LATERAL CARTILAGES AND DIGITAL CUSHION IN THIS AREA OF THE FOOT ARE NOW MUCH STRONGER AND HEALTHIER, SO MORE ABLE TO PERFORM THEIR VITAL SHOCK ABSORPTION ROLES. THIS MEANS THAT CONCUSSION IS LESSENED ON OTHER STRUCTURES, SUCH AS BONES, LIGAMENTS AND TENDONS.



## RIGHT FORE COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS!

The right fore showed worse pathology than the left fore – negative palmar angles had been confirmed on x-ray, the heels were underrunning, and the dorsal wall bullnosing, indicating an incorrect toe first landing.

The sequence of lateral shots below show the new growth coming down at a very different and much better angle – look at the huge difference most noticeable in the last photo. You can also see this on the dorsal shots on the next page. The new dorsal wall is growing straight rather than bullnosing, meaning the landing is now correct heel first. The whole foot has stopped migrating forwards, and is coming back underneath the limb . the breakover at the toe is slowly improving and once the new growth reaches the ground this should be truly correct. The heels were fairly underun – look at the first and last photo and compare the angle of the wall at the heels, and the point where this meets the ground –very almost corrected - just a little more time needed. The hairline has almost stopped ‘curling under’ at the heels and become straighter, as the digital cushion and lateral cartilages have become fuller and stronger, so correcting the collapsed internal arch. This is all creating a much better hoof pastern axis – you can see this by comparing the pastern and *new* dorsal wall angles to the ground – like the If there is approximately 10 degrees difference in the first and last photos!

13/2/21 SHOD ON ARRIVAL



13/2/21 POST TRIM SAME DAY



27/2/21 TIDY UP TRIM 14 DAYS LATER



23/3/21 24 DAYS LATER



28/4/21 36 DAYS LATER



20/5/21 22 DAYS LATER



## RIGHT FORE COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS IN EACH ROW!

13/2/21 PRE TRIM



13/2/21 POST TRIM



23/3/21 38 DAYS LATER



28/4/21 36 DAYS LATER



20/5/21 22 DAYS LATER



THE DORSAL SHOTS ABOVE SHOW THE NEW GROWTH COMING DOWN FROM THE CORONARY BAND MUCH MORE TIGHTLY – THE ANGLE CHANGE YOU SEE ABOUT HALF WAY DOWN IN THE LAST PICTURE FITS WITH THE TIMEFRAME - ABOUT 3 MONTH SINCE SHOES OFF! AND WE HAVE NO NEW EVENT LINES....



THE SOLAR SHOTS ABOVE SHOW THE HEELS AND FROG UNCONTRACTING AND BECOMING WIDER APART. THE FROG IS BETTER QUALITY MATERIAL, WITH A HEALTHIER SULCUS. THE TOE IS COMING BACK, MEANING A BETTER BREAKOVER POINT AND THE WHOLE FOOT IS ROUNDER (MORE CORRECT FOR A HORSE OF THIS TYPE). THE HEEL SURFACE AREA HAS INCREASED, THE BARS ARE JUST DEVELOPING. THE WALL /WHITE LINE ARE MUCH HEALTHIER TOO.



THE PALMAR SHOTS ABOVE SHOW THE HEELS AND HEEL BULBS UNCONTRACTING AND BACK OF THE FOOT BECOMING WIDER AND FULLER. THE FROG, LATERAL CARTILAGES AND DIGITAL CUSHION IN THIS AREA OF THE FOOT ARE NOW MUCH STRONGER AND HEALTHIER, SO MORE ABLE TO PERFORM THEIR VITAL SHOCK ABSORPTION ROLES. THIS MEANS THAT CONCUSSION IS LESSENED ON OTHER STRUCTURES, SUCH AS BONES, LIGAMENTS AND TENDONS.

## LEFT HIND COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS!

The sequence of lateral shots below show the new wall growth coming down at a much better angle, and the bullnosing of the dorsal wall has stopped – look how much straighter the top of the dorsal wall is growing now the hoof is landing is correctly heel first. Bullnosing happens with an incorrect toe first landing, usually due to heel pain and/or long/high toes. In the last photo this new growth has reached half way, fitting with the 3 month timeframe since the shoes came off – you can also see this on the dorsal shots on the next page. The whole foot has stopped migrating forwards, and is coming back underneath the limb. The breakover at the toe is fairly optimal by the final photo and once the new growth reaches the ground this should be truly correct – look at how the toe is shortening each time. The heels were very underun – look at the first and last photo and compare the angle of the wall at the heels, and the point where this meets the ground – completely corrected by the final photo. The hairline has stopped ‘curling under’ at the heels and become straighter, meaning the digital cushion and lateral cartilages have become fuller and stronger, correcting the previously collapsed interal arch. This is all creating a much better hoof pastern axis and has corrected the negative plantar angles– look how steep the hairline is in the first and second photos, and how this has changed by the last photo. You can also see this by comparing the pastern and *new* dorsal wall angles to the ground - there is approximately 5 degrees difference in the first and last photos. This also means better biomechanics and less strain on joints, tendons, ligaments and muscles further up the limb.

13/2/21 SHOD ON ARRIVAL →



13/2/21 POST TRIM SAME DAY →



27/2/21 TIDY UP TRIM 14 DAYS LATER →



23/3/21 24 DAYS LATER →



28/4/21 36 DAYS LATER →



20/5/21 22 DAYS LATER



## LEFT HIND COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS IN EACH ROW!

13/2/21 PRE TRIM



13/2/21 POST TRIM



23/3/21 38 DAYS LATER



28/4/21 36 DAYS LATER



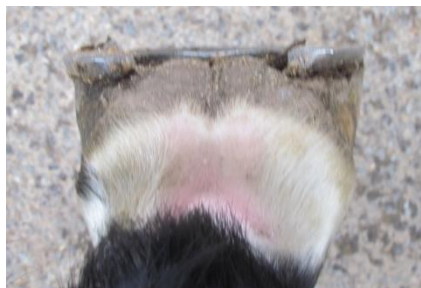
20/5/21 22 DAYS LATER



THE DORSAL SHOTS ABOVE SHOW THE NEW GROWTH COMING DOWN FROM THE CORONARY BAND MUCH MORE TIGHTLY – THE ANGLE CHANGE YOU SEE ABOUT HALF WAY DOWN IN THE LAST PICTURE FITS WITH THE TIMEFRAME - ABOUT 3 MONTHS SINCE SHOES OFF AND WE HAVE NO NEW EVENT LINES...



THE SOLAR SHOTS ABOVE SHOW THE HEELS AND FROG UNCONTRACTING AND BECOMING WIDER APART. THE FROG IS BETTER QUALITY MATERIAL, WITH A HEALTHIER SULCUS. THE TOE IS COMING BACK, MEANING A BETTER BREAKOVER POINT AND THE WHOLE FOOT IS A BETTER SHAPE. THE HEEL SURFACE AREA HAS INCREASED, THE BARS ARE REALLY DEVELOPING. THE WALL /WHITE LINE ARE MUCH HEALTHIER TOO.



THE PALMAR SHOTS TO THE LEFT – ON ARRIVAL - AND RIGHT – ON 20/5 - SHOW THE HEELS AND HEEL BULBS UNCONTRACTING AND BACK OF THE FOOT BECOMING WIDER AND FULLER. THE FROG, LATERAL CARTILAGES AND DIGITAL CUSHION IN THIS AREA OF THE FOOT ARE NOW MUCH STRONGER AND HEALTHIER, SO MORE ABLE TO PERFORM THEIR VITAL SHOCK ABSORPTION ROLES. THIS MEANS THAT CONCUSSION IS LESSENED ON OTHER STRUCTURES, SUCH AS BONES, LIGAMENTS AND TENDONS.



## RIGHT HIND COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS!

REMEMBER THAT THE RIGHT HIND AND LEFT HIND GENERALLY SHOWED THE SAME PATHOLOGY – SEE SLIDE 4.  
THE ONLY DIFFERENCES WERE THAT THE RIGHT HIND HEELS WERE LESS UNDERRUN, AND IT HAD A MORE MARKED MEDIO-LATERAL IMBALANCE.

THEREFORE ALL OF THE INFORMATION FOR THE LEFT HIND IS ALSO CORRECT FOR THE RIGHT HIND PHOTOS BELOW AND ON THE NEXT SLIDE.

13/2/21 SHOD ON ARRIVAL →



13/2/21 POST TRIM SAME DAY →



27/2/21 TIDY UP TRIM 14 DAYS LATER →



23/3/21 24 DAYS LATER →



28/4/21 36 DAYS LATER →



20/5/21 22 DAYS LATER



**RIGHT HIND COMPARISONS – THERE IS JUST 96 DAYS BETWEEN THE FIRST AND LAST PHOTOS IN EACH ROW!**

**13/2/21 PRE TRIM**



**13/2/21 POST TRIM**



**23/3/21 38 DAYS LATER**



**28/4/21 36 DAYS LATER**



**20/5/21 22 DAYS LATER**



**THE DORSAL SHOTS ABOVE SHOW THE SAME CHANGES AS THOSE FOR THE LEFT HIND.  
THE MEDIO-LATERAL IMBALANCE IN THIS FOOT IS CORRECTED COMPLETELY BY THE 3<sup>RD</sup> PHOTO.**



**THE SOLAR SHOTS ABOVE, AND THE PALMAR SHOTS BELOW (ON ARRIVAL AND ON 20/5) SHOW THE SAME CHANGES AS THOSE FOR THE LEFT HIND.**



**BACK HOME AND FINALLY DOING WHAT HE WAS BRED TO DO... Spring / Summer '22**

