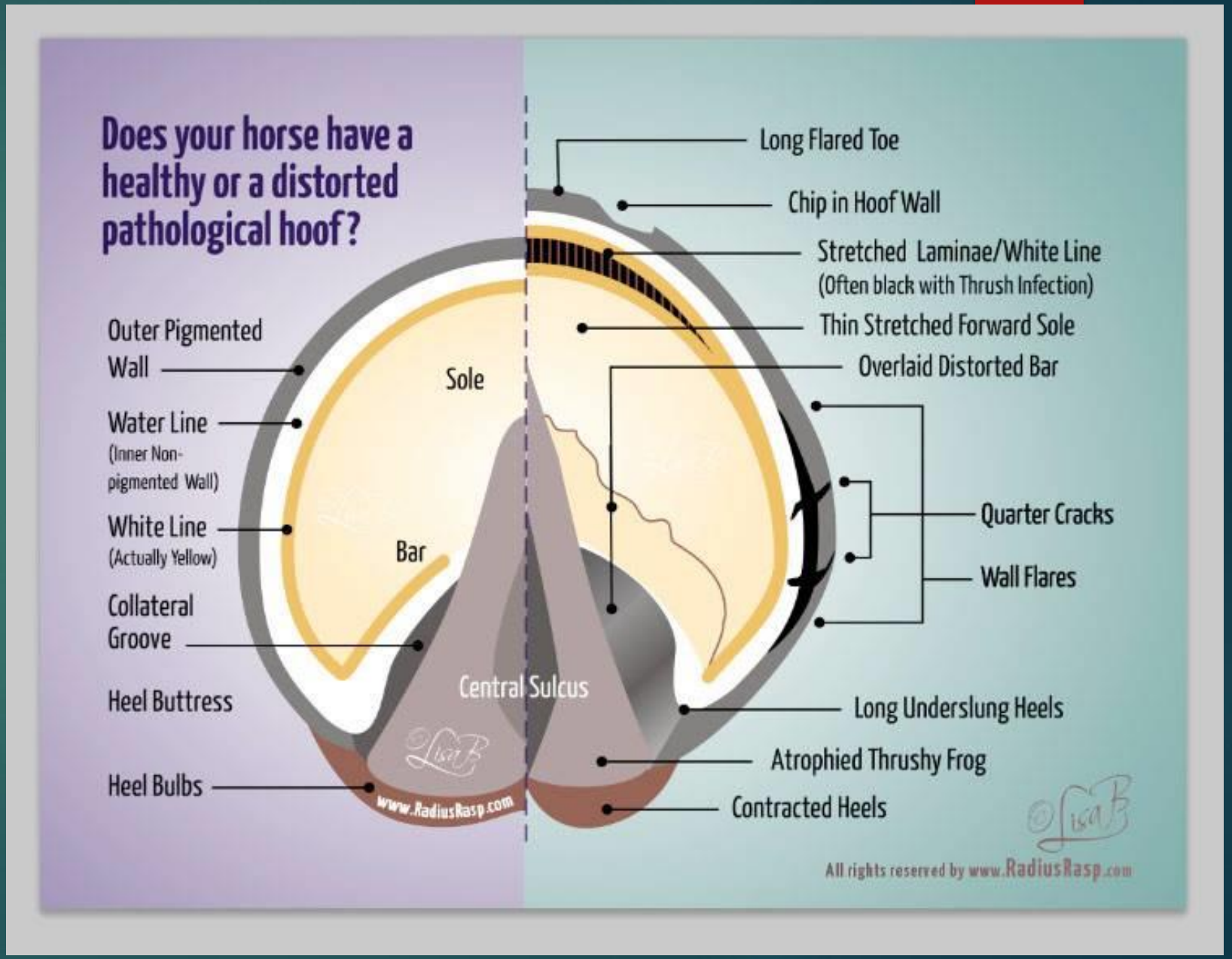
What does a healthy hoof look like

- Precursor: I only know what I know,, until I know more.
- This is a VERY basic How to. Like an onion, you can go as deep as you want. Dive in!
- Everyone should have the basic knowledge of what a healthy, functioning hoof looks like. It is easier for me to show bad feet. They are everywhere. This is not a barefoot vs shod discussion. A good farrier will balance and make corrections to the hoof Before putting a shoe on. That said, I am a barefoot trimmer. I see little use for steel shoes anymore. There are now glue on shoes, shells and removable sneakers. The best of both worlds. Protection when needed and bare otherwise.
- So what does a healthy hoof look like. First the hoof capsule should be straight from hairline down to the ground. Take a small ruler, straight hoof pick even a credit card. Start at hairline. Put straight edge against wall. There should be NO gaps all around the hoof. If there are deviations,, flairs at the toe, quarters and or heel,, that is not good. A small gap is somewhat tolerable, if it is being worked on. Any flair is BAD. Go outside and look at your horses hooves.
- Second, but more important is a good strong heel. Big wide full frogs, wide heel landing platform and strong digital cushion. Horse should land heel first at a fast walk. Defiantly at trot/canter. If horse Does Not land heel first, then all the internal structures can move or deform. This causes issues all the way up the leg into body. Navicular is a good example of a poorly developed landing platform. (also if bars are not working)
- If you need more info, last page is references. Go there! If you want to send me pics of horses feet, go ahead. I will tell you what I see. Will need this info: How horse is housed, what it eats, how it is used and any health issues. -All photos should be taken on ground, at 90* angles to straight on, side and sole. (See PHCP site on how to take photos. In reference section)
- Diet/excersise/movemet is key!
- Thank you for reading this. Good luck

What is a healthy hoof?

Front hoof should be relatively round from solar view. Hind's are a bit more narrow, oblong.

Hoof proportions on the solar surface should consist of the frog taking up approximately 2/3total length from heel to apex, with less than 1/3 length in front of the apex to the toe.



Diet, environment

Diet is the key to a healthy hoof. Vitamins will make or break your horse.

How you house your horse is very important to their mental and physical well being

Heel first landing is KEY to rehab.

- The basic diet of a pasture puff should be like this:
- 2-6 oz ground flax seed. Depending on their weight.
- 2-6oz iodized salt 1oz=1T colder weather, less. More for Heat and working more.
- 2000IU of E (for a 1000 lbs) 500IU per 250 lbs horse or donkey. Use gel caps that have oil in them. (puritan pride.com, vitacost.com or swansons.com
- Minerals to balance hay. Get you hay tested, or insist that the supplier has it done. If you horse is IR or Cushings, fine tuning the hay/minerals is CRITICAL!
- A small amount of feed or hay pellets as a carrier for the minerals.
- If your horse is actually being work &/or thin, then add calories. Otherwise do not add any grain to a pasture puff.

National Research Council

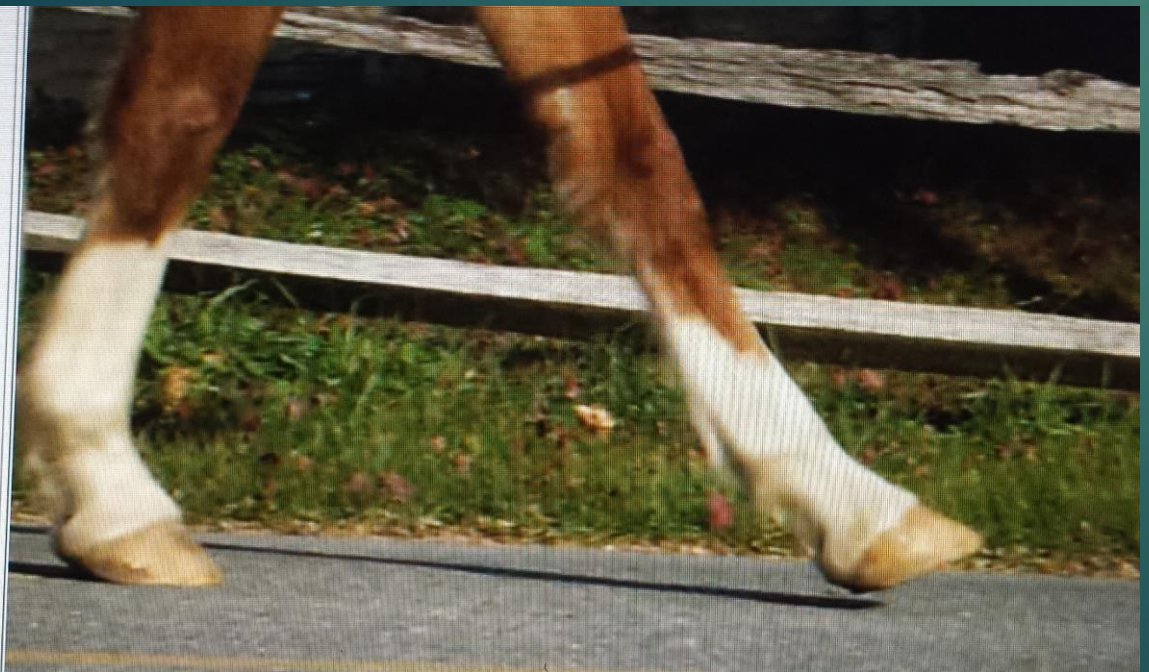
This is what the NRC recommends for a standard diet. Pregnant mare's, stallions and performance horses are a bit different.

If your hose is IR or Cushings these # are very important. Diet for these horses will be balanced differently.

	Reg	150%
Major :		
Calcium	24g	36g
Phosphorus	14.4g	21-30g
Magnesium	7.6g	11-15g
Potassium	22g	37-50g
Sodium	11g	30-40g
Cloride	37g	
Minor:		
Iron*	320mg	400-450mg
Copper	80mg	100-140mg
Zink	320mg	400-550mg
Manganese	320mg	400-550mg
Selenium	.8mg	1.6-2mg
Protein	460-650g	720g

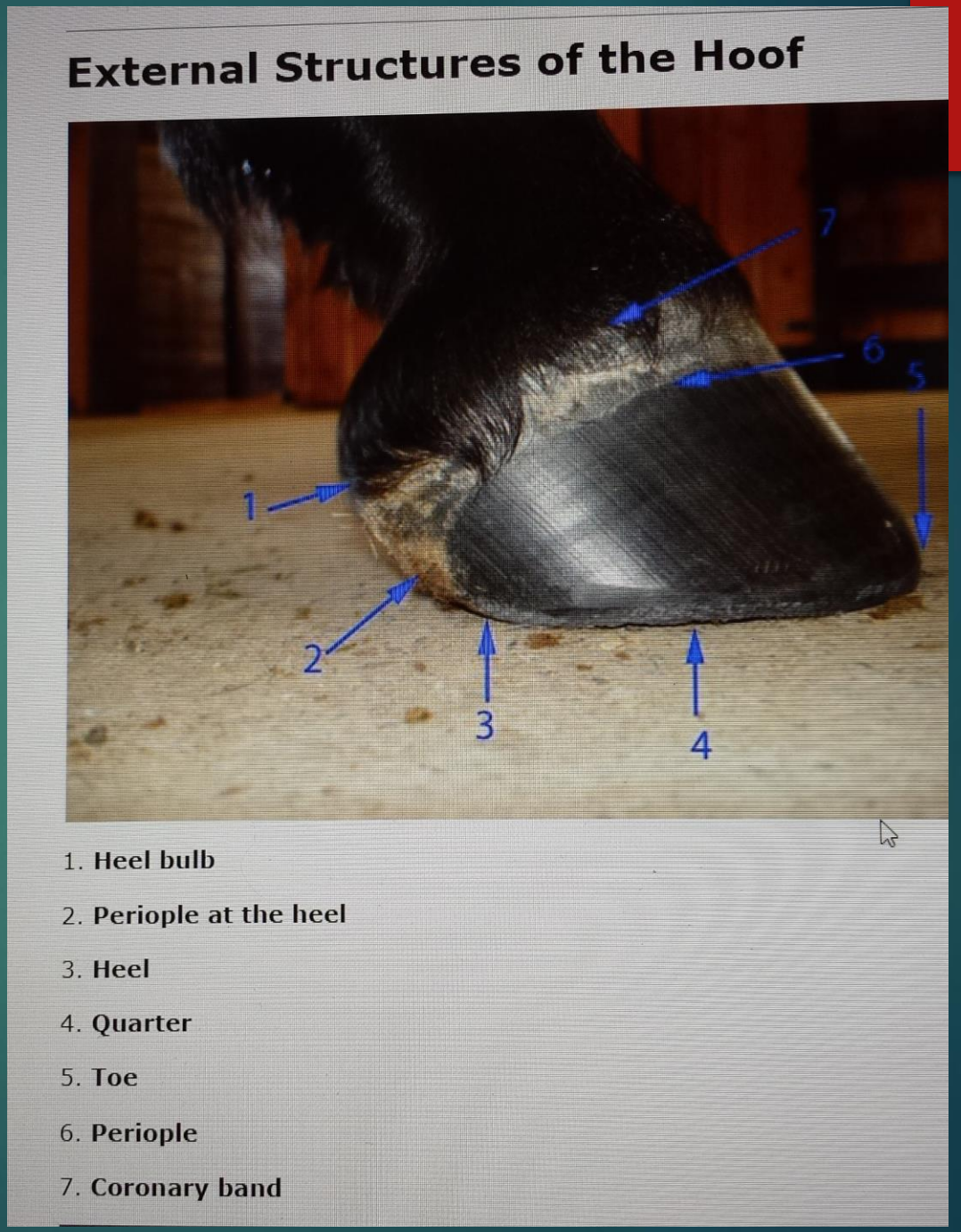
Why heel first landing is important

Heel first landing is a crucial part of the health of the hoof. Nature designed the back half of the hoof to take up the impact and concussion of the stride. With out heel first landing, many things can and will go wrong. Mostly soft tissue and ligament problems. Navicular is the main problem. Watch your horse walk briskly, not slow, to see if they land heel first. You may want to video it to make sure. Trot on a straight line will help see it. This needs to be viewed on flat ground. (Up or down hill will changes how the hoof will land.) Heel first landing is how you rehab a horse. Not much can change internally without heel first landing. Did I mention how important heel first landing is???



Structures of the hoof

1. Heel bulb: Wide and relaxed
2. Periople at the heel. More obvious in wet weather. Some breeds have large perioples
3. Heel: Landing platform. Very important to hoof function.
4. Quarters. Should have a slight natural bevel. This is for when the hoof flattens out on landing phase. Also very important to hoof function.
5. Toe: Hard armor to protect the inner structures
6. Periople of the coronary band
7. Coronary band: Produces the heel tubules. Damage to the coronary, from founder or accidents, will have reduced blood flow. This dramatically affects the health of the hoof wall. Sometimes this can be fixed, sometimes not



Structures on the sole

1. Frog should be wide and full
2. Bars should end half way down frog
3. Sole should flow smoothly from collateral grooves up to the wall, all around the hoof
4. White line should be even all around the hoof, not stretched at the toe
5. Walls should be thick*

This is a before trim shot

1. **Frog**- This is a rubbery wedge shaped structure positioned between the bars.

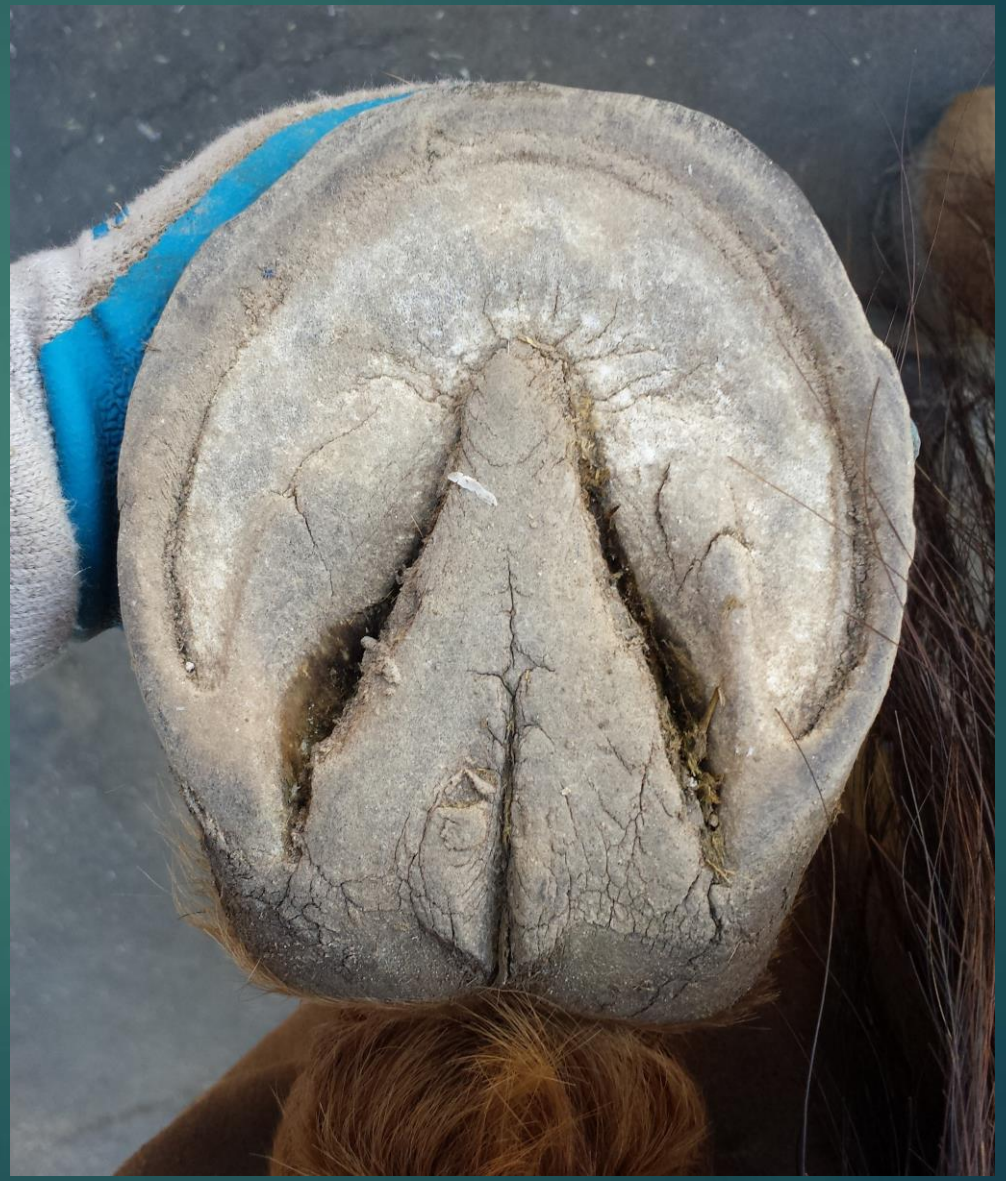
2. **Bars**- There are two bars on each hoof. They are on either side of the frog.

3. **Sole**- The sole covers the bottom of foot.

4. **White line**- This is actually inter-connected lamina that you can see.

5. **Walls**- Walls are the same basic structure as your finger and toe nails.

Thin hoof wall vs Thick



Dorsal wall

Smooth surface

No big growth rings

Collateral cartages not bulging

No flairs!!! None

Walls are maintained no longer than the live sole. That means the walls do not grow higher/longer than the sole. This would be peripheral loading

Lateral view

Strait hair line, no bulges at quarters.

This horse has slight curves. The heel curves down a bit to much

2/3rd to 1/3rd ratio

Heel angle slightly steeper than dorsal wall

After trim

Sole

After trim

-Wide heel base, thick frogs

-Sole that flows from collateral grooves to wall, all around hoof. This sole was cleaned out to live sole.

-Bars flow nicely into sole. Almost cannot see them

-Pigmented hoof wall rolled

-White line should be clean and tight, even width all around.

Frogs and bars

- Frog is Wide at heel base
- Central Sulci not infected
- Thick frog
- Frog terminating 2/3rd of hoof
- Bars are extensions of the hoof wall
- Bars begin at the heel platform, terminating half way down frog- green line
- Bars supportive. Not to open or to upright.
- Bars straight not curved
- Heel bulbs smooth

Great hind hoof

This is a hind hoof that had a very bad case of thrush in the Sulci. After treatment, the heel expanded, frog grew big and wide. The Bars end just were they should, Half way down the frog. Cannot get better than this.

Wish I had a before pic

Heel bulbs

Even line on both sides.
Not in a W shape

Frog on ground

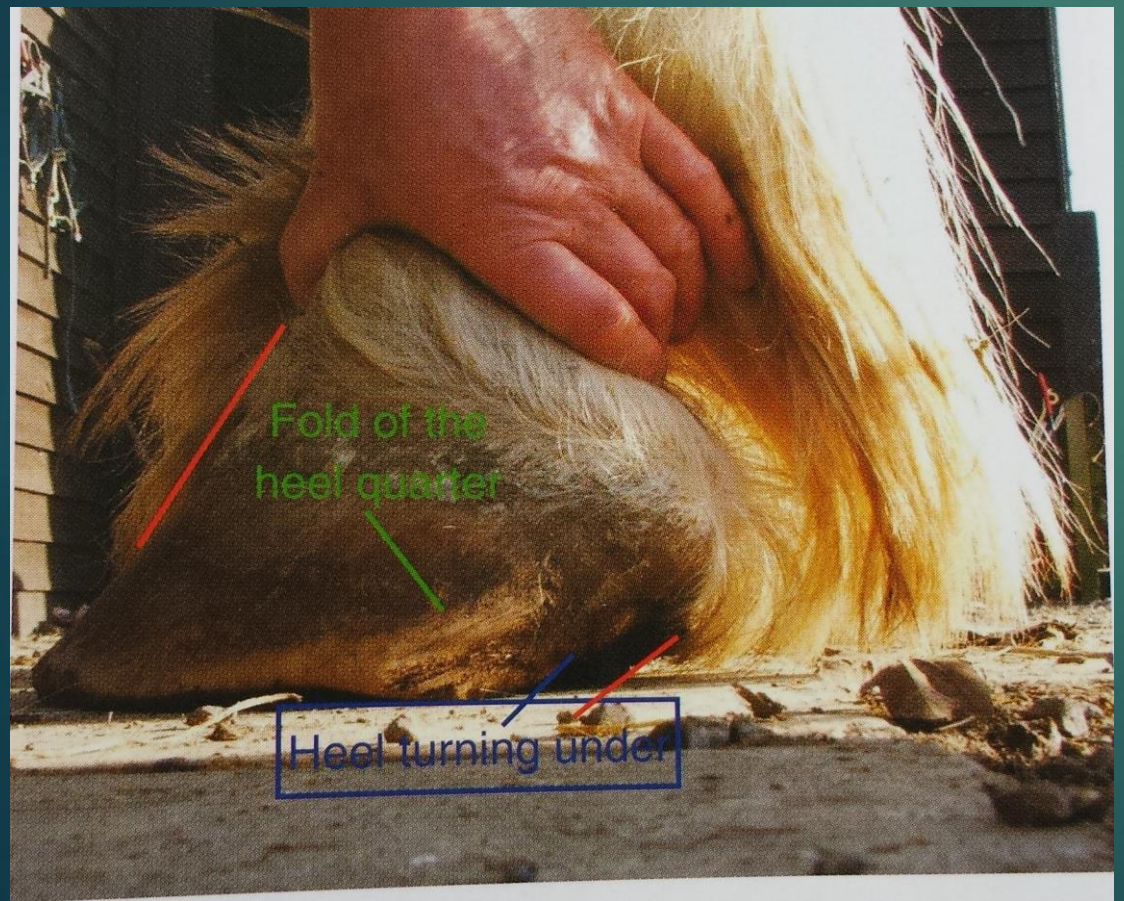
Lateral cartilage not bunched up

Wide, not contracted

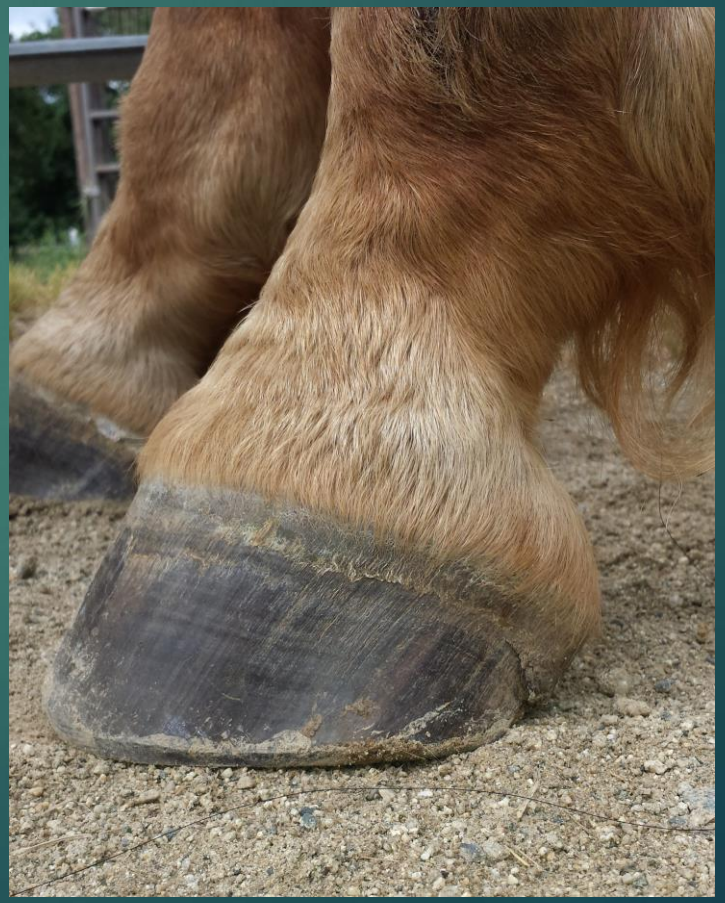
Relaxed hair around the heel bulbs

Heel angles

Dorsal wall angle should be similar to heel angle. This one has a curve before the heel, green letters and blue line.



Nice hind hood. Good hair line. Good dorsal to heel angle.



Digital Cushion: Interior structures

Should feel like a well done steak when palpated. Frog should not move when palpated.

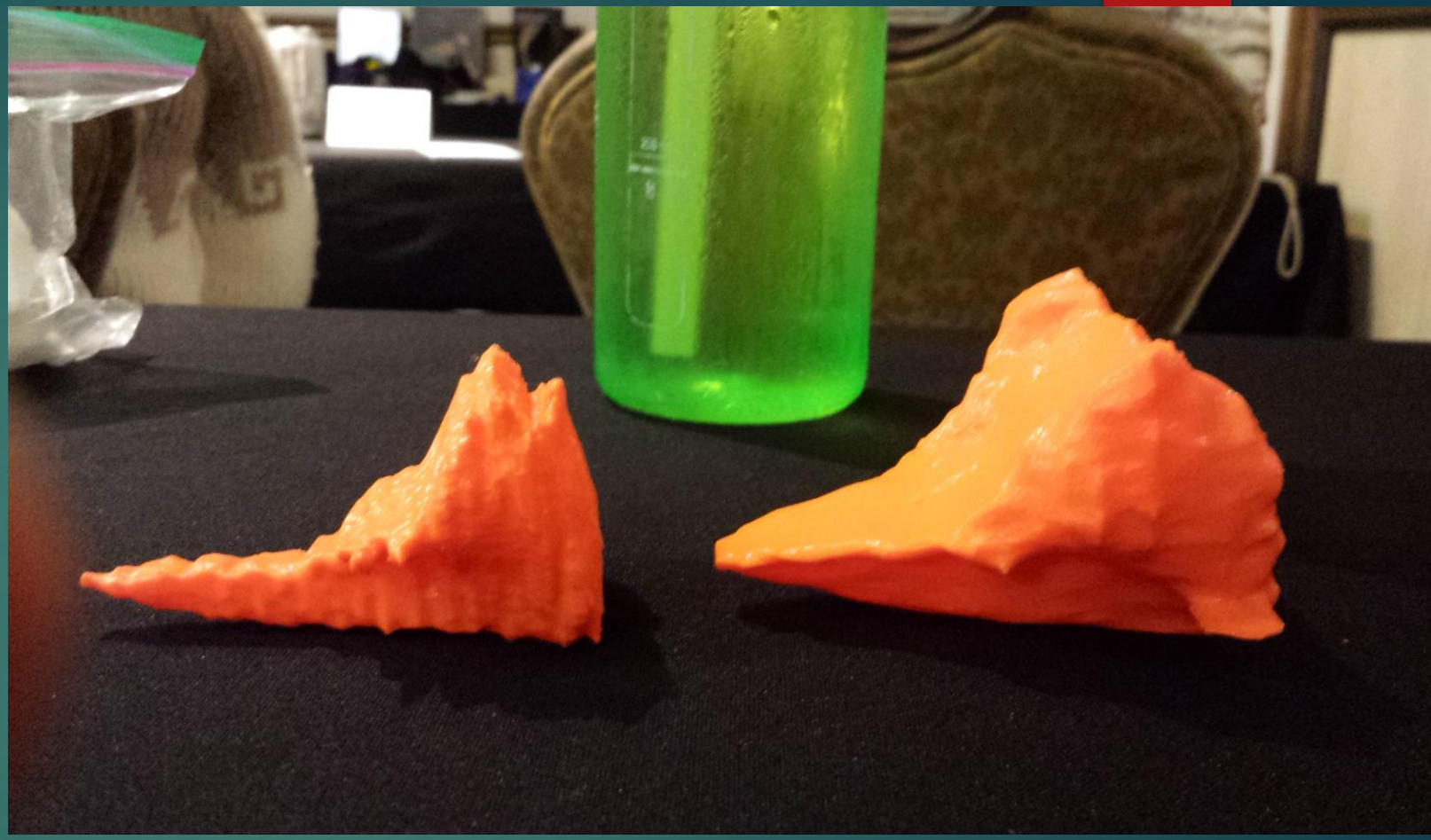
Full and round under the frog. Aids in the shock and concussion part of the landing phase

Notice the DC is under and supporting the Navicular bone. On the bad hoof,, no support

Left hoof, Coffin bone looks longer due to some blood.

Left hoof has a very long toe, angle of wall to shallow. Compare the two.

Digital Cushion



This is an MRI put through a 3-D printer. These are actual Digital Cushions of live horses.

Which one would you want under your horse?

Digital Cushion

Fibrocartilage that helps support the back of the hoof.

Helps supports the navicular bone

Aids in shock absorption.

Very important to the health of the hoof

Lateral Cartilage

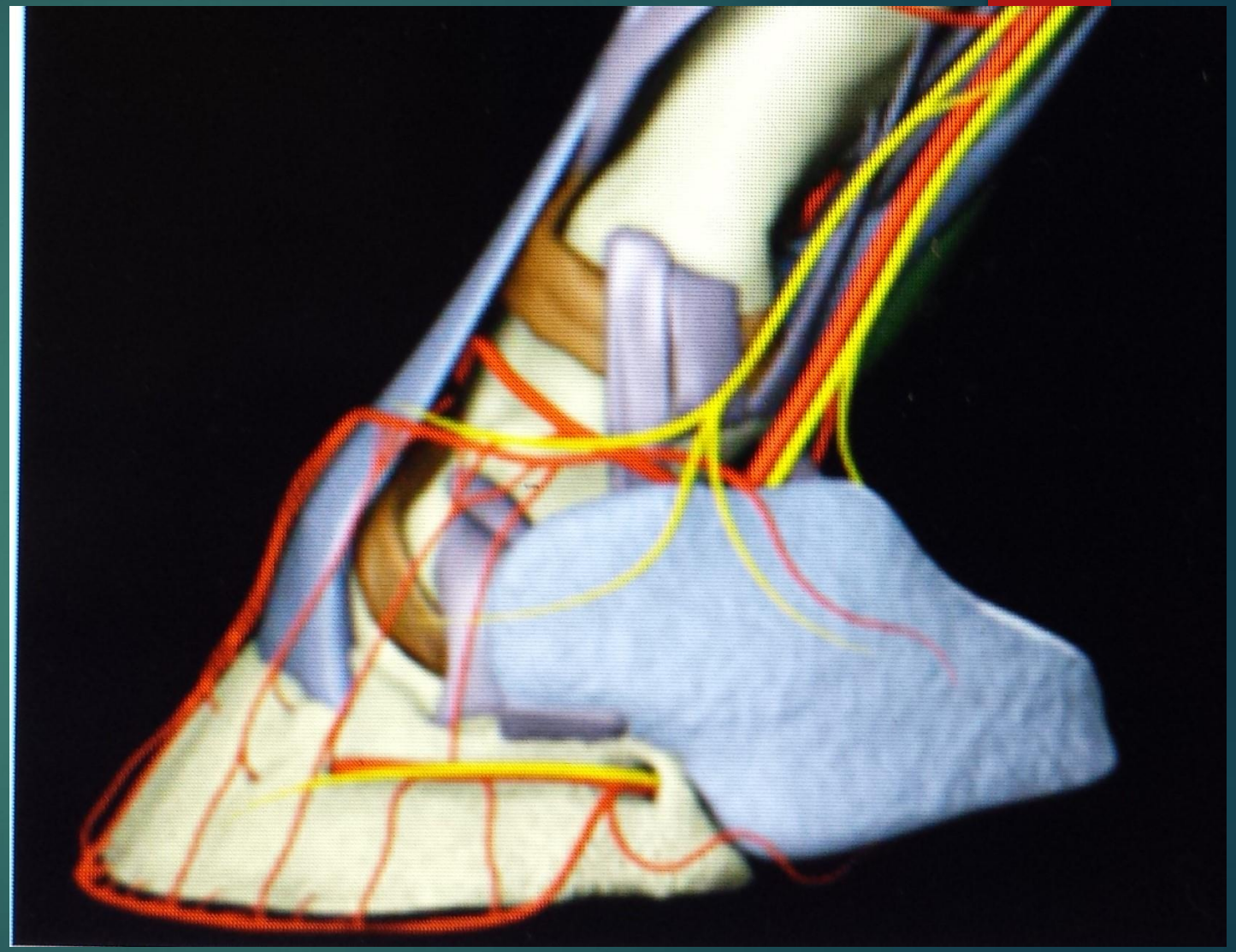
Fibril cartilage covering back half of hoof.

Should be flexible when palpating

If not, that is sidebone

Aids in the concussion part of landing

Also very important to the health of the hoof



How a good trim will change the hoof

This is Sandor. He went from long toes, underrun crushed heels and a Wicked side crack to a decent hoof in only 6 weeks. On a 2 week cycle. Now after a year later, his hooves are great. The heels opened up and his frog is wonderful. He is 31yo!

Bottom is before. Notice shod hoof's contracted heel and pushed up heel bulbs. Then the pic above, heels opened up and bulbs are more relaxed. In 6 weeks! Over the next few months, the heels opened up even more

Pic under horse shot,, Crack filled in and healing.

Alex 19h Clydesdale April-’15 to March-’16

What can be done in one trim

Very overdue for a trim.

Took front right shoe of, then trimmed.

This horses had nice wall thickness. That is why the hoof grew long without cracking. The shoe also kept the wall together.

Question is why did the farrier put a shoe on a long toe?

Contracted heel

This is a contracted heel. Notice the W shape of the heel bulbs. First trim 10/3/15

Heels are uncontracting. This is 3 mo later. Look at the smother heel bulb area. Frog is shedding unhealthy material

Also note that the bars end mid frog, not stretched around the frog.

More contracted heels

Look how the heels move inward, causing the hoof capsule to be oblong. Big W heel bulbs

Another contracted heel. Lone toes. Oblong capsule.

Contracted Heel with sulci infection

This is a very bad sulci infection. If you can stick a hoof pick in there,, very bad.

This is Very bad for the horse. Very painful. They will not land heel first. (often diagnosed as Navicular)

There are several things for us to get rid of the bacteria: ToMorrow, Artimud, No Thrush. Needs to be done on a daily basis.

As the sulci heals, the heels will start to un-contract.

If you see this on your horse. Get help IMMEDIATELY!! Do not wait

Other problem hooves.

Crushed/underrun heels

Black line: hair line. See bulging hair line. Quarters are pushing the coronary band up.

Blue lines: Dorsal/ Heel angle. Heel angle is way to steep

Red lines: Indicate curved, rolling under heel wall.

The only thing correct on this hoof is a straight dorsal wall.

Founder

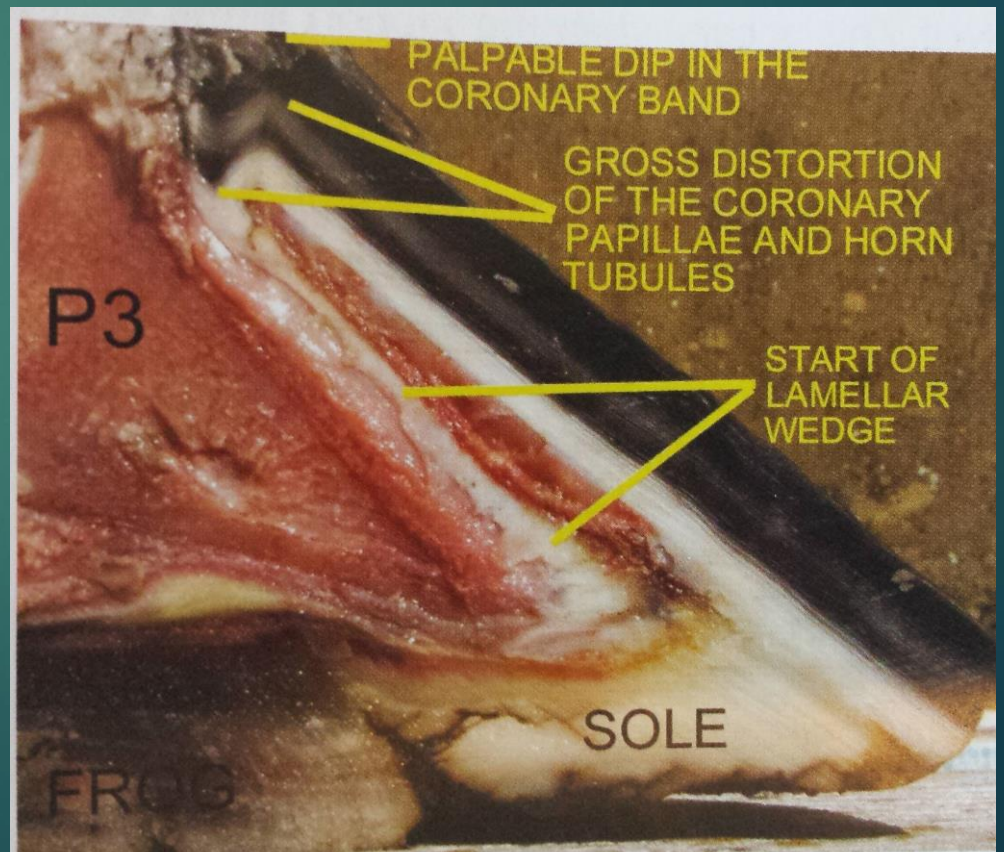
X-ray of a founder hoof. P3 and P2 (coffin bone and short pastern bone) are in hoof capsule. Tip of coffin bone remodeled, resulting in ski tip

What it looks like on the outside. Fan pattern growth rings. High heels, very long sometimes bulbous toe. Very painful

Founder and Laminitis

Growth rings showing laminitis episodes. Small heel fan pattern. Due to tall hoof casual, this is a sinker.

This is a recent founder hoof. Look at the wall (Black hoof) under the coronary bank. There is a large 90 bend in the tubules . The coffin bone sunk, taking the tubule with it. You can palpate the coronary band at 12 O'clock to feel for any softness. This softness will indicate a sinker.



References:

WWW.HOOFREHAB.COM - PETE RAMEY'S SITE A BIT TECHNICAL, BUT A GOOD READ. GO TO HIS ARTICLES THE REHAB PICS ARE GREAT ALSO!

WWW.IRONFREEHOO.COM- OWNER FRIENDLY SITE. EASIER TO READ. GREAT PICS

WWW.HOOFREHAB.COM/MEDIUM_DRESAGETODAYFEB2013ARTICLE.PDF - LINK TO FEB 2013 DRESSAGE TODAY ARTICLE WHERE WE WERE INTERVIEWED ON BAREFOOT DRESSAGE HORSES AND WORKING WITH SHANNON & STEFFEN PETERS. (WE =SOSSITY AND MARIO GARGIULO)

WWW.PACIFICHOOFCARE.ORG - THE HOOF CARE TRAINING ORGANIZATION. IF SOMEONE WANTW TO LEARN HOW TO TRIM… HINT HINT

WWW.DRKELLON.COM - IN DEPTH COURSES ON NUTRITION, INSULIN RESISTANCE AND CUSHINGS

WWW.ECIRHORSE.COM - IMPORTANT INFORMATION FOR INSULIN RESISTANT AND CUSHINGS HORSES

WWW.SAFERGRASS.ORG - IMPORTANT RESEARCH AND EDUCATION ON GRAZING, HAY, SUGARS IN FORAGE, ETC.

WWW.EASYCAREINC.COM- HOOF BOOT SITE

WWW.CAVALLO-INC.COM-HOOF- HOOF BOOT SITE

***HTTP://WWW.THEHORSE.COM/VIDEOS/34609/IS-THE-HOOF-SMART-ADAPTABILITY-OF-THE-EQUINE-FOOT?UTM_SOURCE=NEWSLETTER&UTM_MEDIUM=HEALTH-NEWS&UTM_CAMPAIGN=09-30-2014 THIS IS A GREAT VIDEO. A BIT LONG, WATCH IN SECTIONS.

THIS IS A LONG LOOK AT WHAT A HEALTHY HOOF SHOULD BE. READ IT IN SECTIONS!! HTTP://HEIKEBEAN.COM/OO/HH-TOT.HTM#HORN

ANY OTHER QUESTIONS, JUST ASK GOOGLE