

# NEVZOROV HAUTE ÉCOLE HOOF CARE PRINCIPLES:

**A STEP BY STEP GUIDE TO THE BASICS**



**by Lydia Nevzorova**

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by  
LYDIA  
NEVZOROVA



# Nevzorov Haute École Hoof Care Principles: A Step by Step Guide to the Basics

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# A WORD FROM THE AUTHOR

It took me almost five years to write this book (it was published in Russia 2007). I had to start it all over again a dozen times. Those who remember my early articles written about 20 years ago can easily trace how my views on the “right” way of trimming have changed: from the classic shoeing through Ovnicek’s innovations to Strasser, Jackson and Ramey and further to my own attitude and method (I surely did not invent anything myself and maybe have no right to name the technique of trimming we use as a “method”, but it is the method we use in NHE).

For all these years I’ve gathered the information from wherever I could, watched, agreed, pondered, argued, quarreled, moved from camp to camp and started everything from scratch. There were hundreds of dissections, experiments, open lessons, seminars and conferences.

Nevertheless, as my perception of correct trimming changed, I’ve always adhered to my main principle: “Do no harm”. So I can safely say that there is no safer way to trim a horse today than the one we offer to you in this book.

Five years is the time during which we were able to evaluate all the progressive methods, make a bunch of mistakes and quite a number of scientific studies, draw some conclusions and find our own way. Today, ungulology (“hoof science”; from the Latin word “ungula” - hoof) is an integral part of NHE scientific research. And now, with this book, it is no longer necessary to have to use information about hoof care that is aimed at making the horse healthy for riding or equine sport.

We have issued books (available in Russian only) on shoeing, laminitis and balance in our “Equine Management: Ungulology” series before this one on the practice of trimming not by chance. We’ve wanted to draw the reader’s attention to the fact that one can start practical trimming only after she has enough theoretical knowledge to make no fatal errors.

Many people would like to know how we treat the hooves of our horses. Despite the high interest in the subject, we issue our book in a limited edition because it is intended for the students and followers of NHE. Their amount of



knowledge allows them to understand the main idea and to use this method in their practice. This book is also intended for the entrants of NHE, the ones who are just getting ready to enter the School. As for the others who like equine sport, we honestly recommend not to open this book at all, as they won't find anything helpful or suitable for their aims and purposes.

This book is the result of the earnest and scrupulous labor of a great number of people: Professionals with whom we have collaborated for a long time, NHE students who created the base for tracing the results of physiological trimming and the employees of the NHE Publishing House who took a great part in this book. I'm grateful to all of them for their practical advice, beautiful photos and case-studies which show that this method really works, and it works for the benefit of horses.

# ATTENTION!

Many illustrations in this book are marked with the following icons:

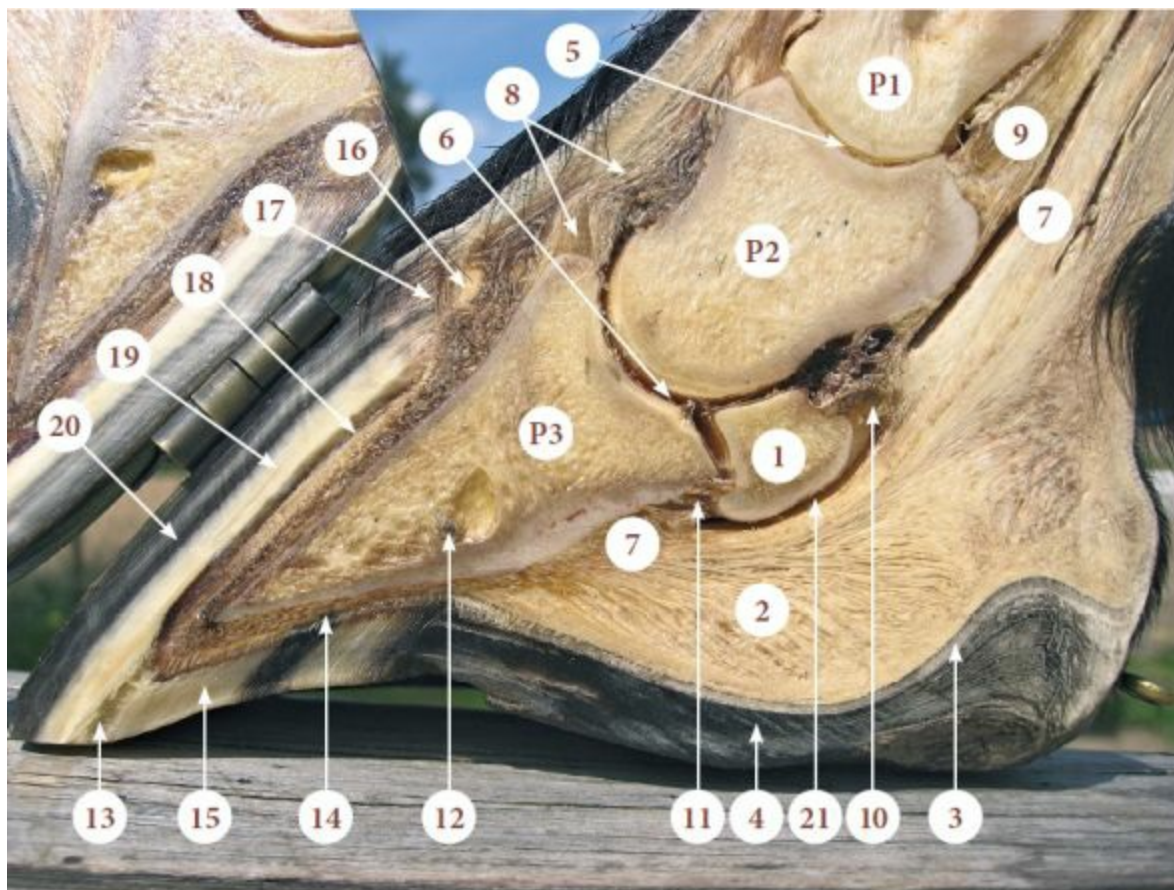


Such trimming should not be done on a live horse (demonstrated for educational purposes only).



Invasive trimming allowed only for professionals in clinical settings. Never try to do it yourself

# HOOF ANATOMY



P1 — first phalanx (pastern bone, long pastern). P2 — second phalanx (coronary bone, short pastern).

P3 — third phalanx (coffin bone)

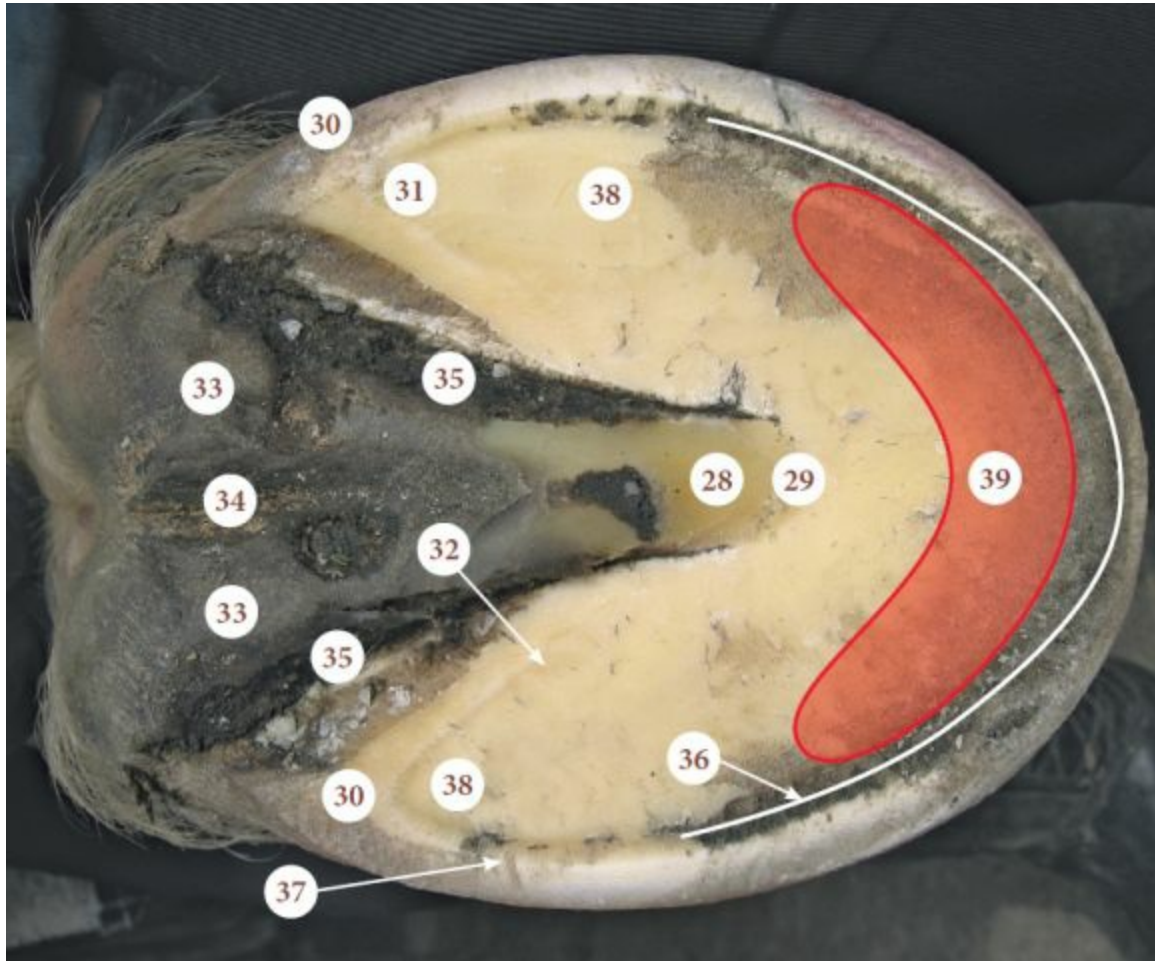
1 — navicular bone. 2 — digital cushion. 3 — corium (sensitive/live skin cells) . 4 — epidermal layer of the digital cushion (the so-called frog). 5 — pastern joint. 6 — coffin joint. 7 — deep digital flexor tendon. 8 — common digital extensor tendon (or long digital extensor tendon for the hind limbs). 9 — straight sesamoidean ligament. 10 — suspensory ligament of the navicular bone. 11 — impar ligament. 12 — foramen to the terminal arch of the digital collateral arteries. 13 — white line. 14 — solar corium. 15 — epidermal layer of the sole. 16 — coronary cushion. 17 — coronary corium. 18 — laminae (the dermis, which forms the white line in the distal area). 19 — unpigmented



epidermal layer of the hoof wall which forms the water line in the distal area.  
20 — pigmented epidermal layer of the hoof wall. 21 — navicular bursa. 22  
— toe.



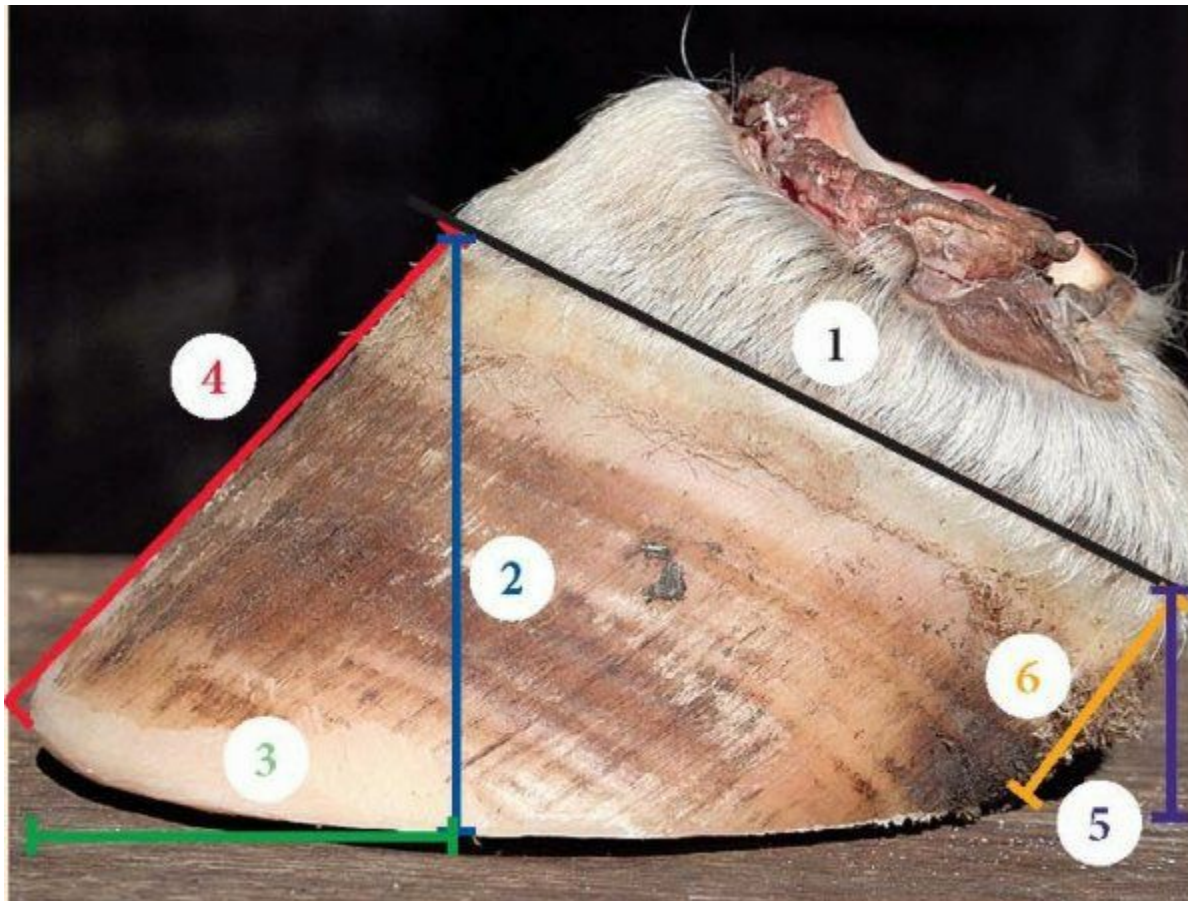
22 — toe. 23 — dorsal area of the hoof wall. 24 — heel. 25 — solar edge. 26 — lateral area of the hoof wall. 27 — coronary area of the hoof wall.



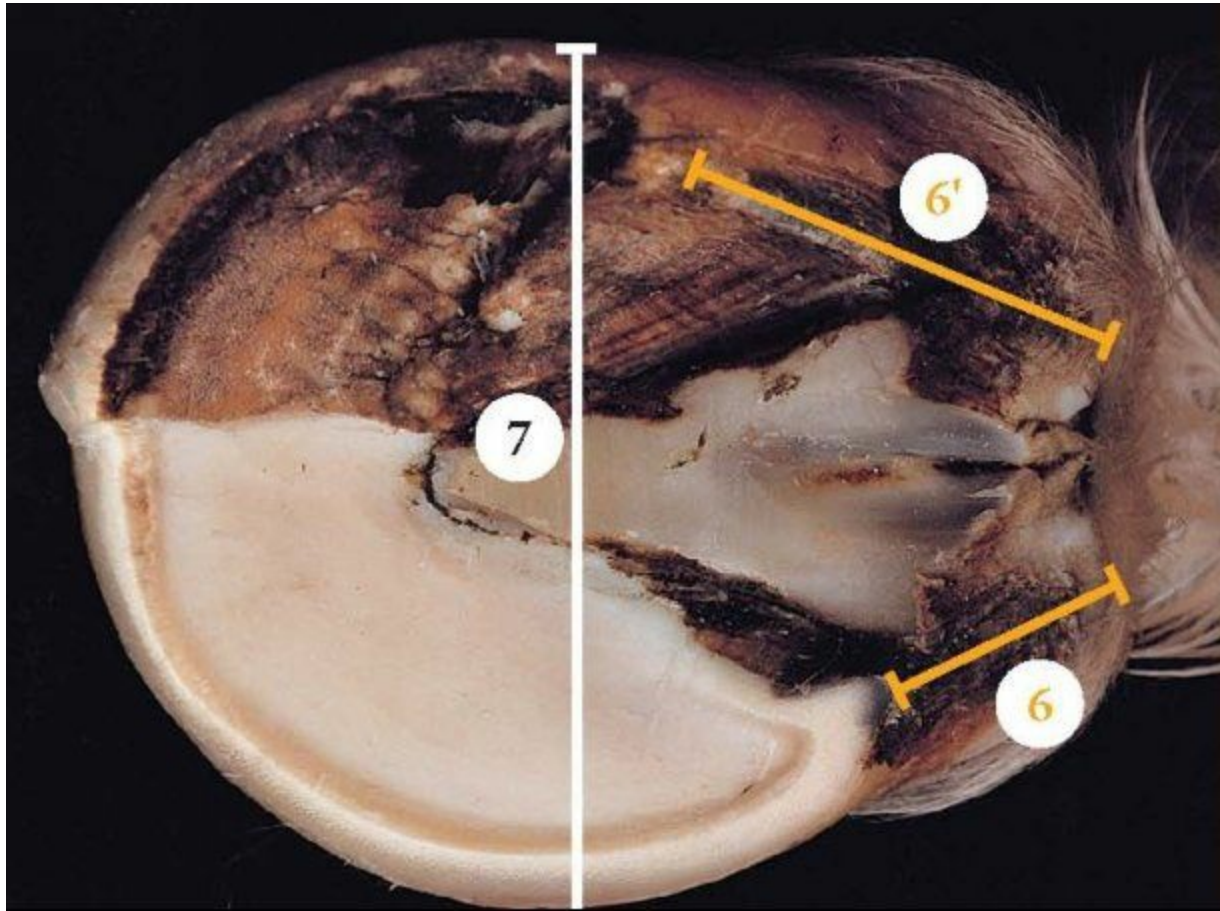
28 — frog apex. 29 — junction between the digital cushion epidermis (frog) with the solar epidermis. 30 — heels. 31 — bars. 32 — the edge of the laminar layer of the bar. 33 — frog stems. 34 — central sulcus. 35 — collateral groove. 36 — white line. 37 — water line. 38 — sole (seat of corn). 39 — toe callus area (solar half-moon area situated under the toe area of the coffin bone).



# HOOF MEASURING PARAMETERS SCHEME



These pictures show the main measurements of a hoof. (1) — coronary line (angle); (2) — toe height; (3) — toe length; (4) — dorsal wall length; (5) — heel height.



(6) — heel length; (7) — widest part of the foot. A parameter marked with (') shows overgrown and unhealthy aspects of the hoof. © T. Batalina

# ON THE SCHOOL TRIMMING METHOD

I have no financial interest in any of the existing trimming methods, which allows me to take no part in the war of the ungulologists. This war is quite rough, none of the participants considers the method of her colleagues to be correct in any aspect. I, on the other hand, can pick the best of all the methods, adapt it and extend it considering our views on the horse.

I must say at once that I sincerely respect the opinion of all the ungulologists and highly appreciate their professionalism and achievements, but there are ones whose position I find “akin” to mine (if the ones whose methods are oriented towards the sport and NH (Natural Horsemanship) masses can be anyhow “akin” or even understandable to me). Those people are Robert Bowker, Pete Ramey, Marjorie Smith, Cindy Sullivan, Peter Laidely and Dan Guerrera. They all offer a healthy and non-invasive trimming. I am really grateful for these specialists and proud to be on good terms with many of them. I strongly recommend that you read their books and watch their educational videos!

I was not trying to invent something new and if the books of the specialists mentioned above were available in Russia I would have never started to write mine.

Nevertheless, the trimming method which is described in this book and which we practice in NHE is similar, but not a copy of any of the methods of these specialists. A note for the readers who are just getting to know ungulology — the secret of the so-called “natural” trimming is painfully trivial.

The thing is that regular daily movement and proper care and feeding produce the elixir for almost all hoof diseases. A horse who is kept in the appropriate conditions is almost always sound and does not require professional hoof care all the time. Though if such care “happens” to this horse, it would do him no harm (as it can do to the horse who is kept otherwise).

The real problem is the rehabilitation of horses with severe pathologies who are kept in the unnatural conditions which give no hope for healing. Only the so called “expert” professionals take such cases... and fail, of course.



The conclusion is simple: if one is following certain rules of horse keeping and management, her horse does not need a significant trim. If there are not correct conditions any trimming is useless and there is no way to rehabilitate or enhance the hooves. This is why, and not because they are cruel, the professional ungulologists often refuse to aid the horses whose keepers in their turn refuse to change their approach towards the management.

We, as the School, also refuse to help anyone who “uses” a horse this way or that, be it sports, renting or slaughterhouse.

Obviously our approach towards hoof care differs drastically from the so-called “traditional” one but at the same time it differs from the “natural” also.

We have no universal rules and standards, only the fundamental principles based on the precise knowledge of the anatomy and physiology of the hoof and the whole horse. There is an understanding of the inextricable connection between the trimming itself and conditions in which a horse is kept, his way of living and exercise. Pay attention that when I speak about exercise I do not mean Equine Sport Exercise and NHE horse training is not equal or similar to equine sport. I do not like the term “natural” and it does not matter if it describes management or trimming. It’s because the world is compromised with people who seem to like their horses to live as natural as possible and at the same time use these horses for sport and other cruel and unnatural entertainments like “natural horsemanship”. Our method — the School trimming — is created for the horses who are kept and cared for according to the School understanding of the world, horses in it and stable management. Our horses are not used in any sport, racing, or show, etc., and even have not been ridden for many years nor will they ever be.

The bases of our management are knowledge and common sense. We provide the most comfortable and safe environment for our horses. We are against the “natural” herd keeping of the School horses. We blanket them if it is cold outside, we do not stand for the 24/7 field turnout in all weather conditions. The Nevzorov horses live in paddocks with free access to the summer shelters or the stable and can move 24 hours a day, but always spend the cold nights in the warm stable. All of these — warmth, blankets and other displays of human care contradict the rules of the “natural” keeping.

This is why I’m not prone to call our trimming “natural”. It is simply the proper physiological trimming which suits the School horses. It is NHE School trimming.

# CHAPTER 1. GENERAL INSTRUCTIONS

So, here we come to the School trimming technique itself. Are you afraid? Sure, I am too. No one teaches how to trim hooves “in absentia”. All the world’s professionals might criticize me for doing it, but lucky are those who can invite the professional to trim their horse’s hooves, who can learn from the famous ungulologists in person... but what should others do? They just have to learn by themselves, with the books.

There is one thing which has to comfort you. There is no chance you can trim your horse’s hooves worse than an uneducated farrier. You just can’t manage to do it, but you do still have a chance to help your horse to get better hooves.

Horse owners like to blame the farrier for all of their problems. I cannot agree with such a position.

I don’t think that the farrier is the one who is responsible for anything. The responsibility for the hooves lies on the owner of the horse and on nobody else. If you allow the farrier to mess with your horse’s hooves, you do not deserve to own a horse. The source of the farrier’s lawlessness is your own illiteracy. If you don’t like what the farrier does you can always trim by yourself.

Peter Laidely, the famous Australian ungulologist, tells the truth: “If you’ve decided to take care of a horse, you should also get used to care for his hooves as you would care of your own fingernails.”

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You should not trim without the clear understanding of what you are supposed to do. It is very important that you know the theory perfectly and learn to hold trimming tools in your hands. You should master the techniques while trimming cadaver hooves before you ever touch the hoof of a live horse.

**The obvious thing which still needs to be stated: one cannot try to rehab mutilated horses without special knowledge, skill and experience in physiological trimming.**

Only after one has understood the anatomy and the physiology of the hoof, can she understand and remove the true cause of lameness, arrhythmia, imbalance, etc.

As it was proved a number of times, the transition towards the correct way of living (which includes the elimination of the lameness causes) and towards healthy, appropriate and necessary trimming can cure even those horses who were traditionally considered “incurable”.

Nevertheless, if for some horses this transition passes without any problems, for others rehabilitation may become a real “strength test”.

After the shoes are removed and the blood flow is renewed, nerves also start to function and report on the inner damage of the hoof. That is why the “healthy” shod horse becomes lame after the shoes are removed. The horse is not “unable to walk without shoes”, the shoeing had just masked the inner traumas which sometimes were caused by the shoeing itself.

Alas, healthy hooves are very rare to find nowadays, but we shall discuss the trimming of normal healthy hooves so that you’ll know what you should achieve. We shall look into the most common pathologies only slightly in this book.

## **YOUR EFFORTS IN THE PHYSIOLOGICAL TRIMMING CAN BE BROUGHT TO NAUGHT IF YOU DO NOT FOLLOW THESE BASIC RULES OF EQUINE MANAGEMENT.**

**This is why I feel it necessary to repeat the following:**

1) Allow your horse to move as much as possible. He should be turned out at least for 14 hours a day. The more — the better. The perfect turnout is 24 hours a day. If your horse stands in a 10×10 meters dung-littered paddock it is not considered movement! Let your horse decide how much and when he wants to move. Supply him with a well-conditioned and safe pasture or a paddock of a considerable size (with a shelter and constant supervision, of course!). The ability to move freely is the most important part of the successful hoof rehab.

2) Ask nothing of a horse in the transition period. Let go all the exercises. Let the horse just be turned out. You can entertain your horse with the easiest ground exercises which need no effort from the horse and only if he is willing

to do them.

3) Make radiographs before the first trim so that you see if there are such diseases as laminitis, navicular syndrome, osteitis, keratoma, lateral cartilage traumatic ossification, degenerative disease of the coffin joint, macro- and micro-fractures of the coffin bones, etc.

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The main thing one should understand is: correct trimming is IMPOSSIBLE without the basic knowledge, the will to learn and the desire to study ungulology FOR REAL.

Let my step-by-step instructions not deceive you.

**It is IMPOSSIBLE to gain a good result with this or any other book without the fundamental knowledge of the anatomy and physiology of the hoof and the whole horse.**

**It is IMPOSSIBLE to trim correctly without the understanding of the processes which go on inside the hoof.**

Only one who is really into hippology and ungulology has a chance to master trimming.

To the ones who want to save some money they usually pay to the farrier, the ones who want to follow the instructions blindly — to them I do not advise to take the rasp in their hands, moreover — I guarantee that the result of their trim would be a deplorable one.

Sometimes involvement ends up in a real hoof obsession and yesterday's amateurs become too engaged in trimming doing thus a great harm to the horse. Care becomes torture with the daily trimmings when the owner experiments with different methods of correcting the toes-out, toes-in or other real or made-up flaws of conformation.

The more overgrown and neglected your horse's hooves are, the longer it takes them to rehabilitate.

Do not hope for an instant result.

Do not abandon physiological trimming for shoeing if you

don't see positive dynamics immediately. Arm yourself with patience. There are simply no other ways to recover or to keep the hooves healthy than with the help of physiological trimming.

This is the primate's nature and you can do nothing about it... Nevertheless I insist on following the sacred principle which states "Do no harm". I suggest you write it on your stable wall with large scarlet letters.

Ninety-nine percent of novices who start to trim successfully decide at some moment that they've understood everything and that they are able to control the processes going on in the hooves of all horses. So they begin to advise, experiment, trim invasively with all that cutting of bars and sole, skewing of heels, etc. Bruises, lameness, abscesses, blood, laminitis, disappointment and the abandonment of the physiological trimming for shoeing are likely to follow. It's no wonder that the first steps towards physiological trimming bring great success and lend some wings to the would-be trimmer. Everyone makes their first trim with as much awe and carefulness as possible because of the fear of doing some harm. Usually, problems spring up later, in a month or two, when the knife and the rasp "stroll" around the hoof a lot more bravely...

I am quite aware of the futility of my precautions, but I have to say anyway:

One CANNOT become a professional after a month or a year of trimming hooves of one or two horses.

Bold, flashy and reckless trimming is the archenemy of the hooves!

Don't think that if the first trims went seamlessly and brought tremendous results the following ones will be equally triumphant.

Everything can change in a blink of an eye.

Always be wary of harming the horse.

Never step away from the principles stated in this book, do not experiment on live horses. Believe me, these words are written with the blood of the thousands of horses who were crippled with the "care" of their owners or farriers.

Know when to stop trimming.

Do not let the trimming become too frantic, study the anatomy and the principles of the trimming thoroughly.

Visualize the inner structures of the hoof while you trim. You must know

precisely what is where and how everything works.

Keep in mind that you are dealing with the outer shell of a complex and tender mechanism which you are to correct according to your own apprehension. It is a tremendous responsibility. A horse's health and life depend on your knowledge and actions.

**For trimming of a sound horse with a normal conformation the main principles are:**

- The heel height depends on the frog level and the sole thickness.
- The frog should touch the ground and bear weight, i.e. heels and frog should be at approximately the same level.
- While trimming the wall at the toe and quarters area one should consider the level of the sole and the depth of the collateral grooves and not the wall height or various angles.
- Respect the sole. At the toe area and on the outer perimeter it should be callused and at the level with the hoof wall. Never trim it just to trim; you can cut it only if it is vitally important to do so.
- Ideal bars should be straight and should become lower smoothly towards the frog apex. BUT! You must not force them to be straight by cutting them away if they are a bit crooked. You can trim the bars only to make them even with the sole or, better, so they would stand a couple of millimeters above the sole.
- Round the hoof wall in the toe area from the top down to make a good roll.

After all, while speaking of physiological trimming I'll use a phrase I've often heard from my teachers while I was a student at the art school: "From the general to the specific and from the specific to the general". This rule suits well to master the art of the trimming. You should see through the hoof with all its bones, cartilages and vessels and feel that it is a part of the whole locomotor apparatus simultaneously.



Always keep in mind that you are not just rasping away some hoof horn, but influencing the whole organism of a horse: you change the balance, help to resolve some inner problems of a hoof or make them even worse. It is very important to see the structure of the hoof and of the whole locomotor apparatus of the horse.

While working on some hoof structures, always come back to the whole from the details and then concentrate on the details again. Don't rush, don't be too bold, take away the horn little by little and never feel shy to check your trimming with the simple and primitive methods described below. Only such an approach towards the planning of hoof care and the trimming itself can help you to master the basics of physiological trimming in the shortest time span — a year or two.

You must get a cadaver horse leg, no matter how disgusted you are at this thought. Nothing can help you to study the hoof structure better than a dissection. Try to trim the cadaver hoof. Dissect it by yourself. It will help you to avoid numerous mistakes when you'll be trimming a live horse. Believe me, you'll make many discoveries and will be amazed with how the horse's hooves are fragile and strong simultaneously. Everything starts with anatomy. Beyond that, you will get some practice in "horn carving" and get the hang of it. It is very important, especially for women or anyone who may not have much experience using tools.

**NEVER try to trim the hooves of a live horse without trimming and dissecting a couple of cadaver hooves beforehand.**

### **IMPORTANT!**

Remember that not all the problems will go away thanks to trimming. There are a number of irreversible effects of osteitis, degenerative joint disease; keratoma won't go away, and once ossified lateral cartilages won't become as good as healthy ones ever.

#### **"The very truth itself" from Dan Guerrera:**

- Everything is simple. Consider the shape of the coffin bone of the particular horse. The coffin bone which, I hope, you know well from your anatomy studies, is covered with corium to which the sole and the walls are

tightly attached.

- Heels should be as high as it is necessary for the coffin bone to be parallel or almost parallel to the ground. The frog should touch the ground, the sole should partly bear the weight of the horse, as well as the hoof walls should.
- A healthy horse's sole always matches the shape of the solar corium and coffin bone. Its thickness is quite the same in different regions of the hoof.
- A natural soil (sand, earth, stones, etc.) fills the anatomical cavities of the hoof while the horse moves. Thus the support of the spring function is provided. It also makes the hoof more stable during the stance phase.
- On the other hand, while a horse is on smooth and hard ground most of the sole "hangs" in the air and the hoof concavity is deprived of the natural support of the soil. An overloading of the hoof may occur. There is no asphalt in the natural environment so it can't be good for hooves. As a result of the absence of the sole's and frog's contact with ground, the sole sinks downwards and a whole specter of problems arrives. The most annoying one is that the coffin bone "sinks" into the hoof capsule. The hoof becomes flat as the new sole will match the shape and the placement of the coffin bone. You should consider this while trimming.

Anyway, you always have a chance to help the hoof to become wider (hoof tissues in good condition can sometimes rebuild themselves), you can "lift" the coffin bone a little inside the hoof capsule (due to thickening of the sole), you can make the digital cushion healthier and relieve a horse from the pain in the navicular area and reduce laminitis in the case of the chronic founder.

# HOOF DIARY AND HOOF CHRONICLES

A hoof diary richly illustrated with the photographs of your horse's hooves should become an integral part of your life.

Hoof photographs are a very important stage of the trimming.

While looking at the photographs in a quiet atmosphere one can often see things she didn't notice while she was looking at the hoof itself. Photographs allow one to track the progress/regress of the hoof rehab.

Comparing the shape and the condition of the hooves from your photo diary you can get a clear idea of what's going on, what changes have occurred, what the results are of any given actions and what the overall dynamics are.

Plus, this kind of tracking allows you to understand better the processes which go into the rehabilitation of the hoof. The other thing which is very useful for novices is that the mistakes made during trimming become obvious in the photographs. Lots of these mistakes must be corrected immediately, before unpleasant consequences occur.

That is why I highly recommend taking photos of the hooves before and after every trim and storing them neatly on your computer with accompanying radiographs, schemes and comments.

## PHOTOGRAPHY GUIDELINES

1. To make a picture of a hoof choose a level spot with a ground color presenting contrast with the color of the hooves if possible. It can be concrete, plywood, a smooth wooden floor, etc.
2. Ask the horse to stand as straight as possible, **but do not try to "improve" the posture**. The natural position of the legs provides the clear picture of the hoof balance.
3. Pick and wash the hooves thoroughly. If the natural lighting does not allow you to turn off the flash, wipe the hoof dry so no flares will appear in the picture. Avoid taking the picture in the bright sun.

Straight light gives straight shadows which may spoil the technical photo.

4. Do not shoot against the sun either. Pay attention that the object you shoot — the hoof — should be lit.

5. Try to take all the pictures (not including the picture of the general appearance) as close as possible.

Avoid using the landscape lens. It may distort the picture.

6. While taking a picture of the hoof itself, place the camera on the ground so that the angle between the load bearing surface of the hoof and the camera lens will be 90 degrees.

7. All the pictures should be sharp, not too dark and not too bright, not blurred. If you cannot ask the horse to stand still for a few seconds while you are taking the photographs, how will you convince him not to move when you are holding a hoof knife in your hand?

8. Make a special folder on your computer and save every photo-session there. Always mark the dates in the file names or on the pictures themselves. Also mark which hoof is which (right front, left hind, etc.). A full set of photographs should be made before and after the trim (this concerns the first trim in particular). Afterwards you may take the pictures at some chosen interval.



**Fig. 1.1 a–f. Angles of the hoof photographs for the hoof diary. © T. Batalina**





**Fig. 1.2 a–b. Make sure you take a photo of the horse standing sideways and of his legs sideways and en face. © K. Kotzinyan, D. Raykin**



## **The photo set includes:**

### **1. The general appearance of the horse.**

While making this photo, move quite far away from the horse and use the zoom function to evade “optical distortion”. On the vertical line the camera lens should be in line with the horse’s shoulder, on the horizontal one it should be in line with middle of the body. Make sure you take pictures from the left and right sides.

### **2. Posture.**

The photographs of the posture may be the key ones to explain many hoof problems. You must take pictures from the sides, from the front and from behind. Consider that you should lower the camera to the level of the metacarpus or hocks to retain the proper angle. Make sure that hooves and shoulders fit into the picture if you are taking the photograph of the posture from the front or from the sides. The same goes for the hocks if you are taking a photograph of the posture from behind.

### **3. Photographs of the hoof on the ground.**

While taking a picture of the hoof standing on the ground, put your camera on the ground as well or you’ll get a distorted picture. The area above the coronary band should fit into the picture.

### **4. Photographs of the hoof held in the air.**

Such pictures require these angles:

1. A picture of the solar surface.
2. A picture of the lateral surface.
3. A picture of the palmar/plantar surface (heel).
4. A view of the toe through the heels.
5. A three-quarter view of the solar surface (to see the concavity of the hoof).

# IS YOUR HORSE READY FOR TRIMMING?

No need to mention that to provide safe and successful trimming, your horse should stand still without any ties.

**The horse should give you his leg voluntary and with pleasure. No force. It's the main rule of NHE.**

If you keep your horse correctly, there would be little need for your interference and trimming, so, you would be able to use only the rasp for a touch up, while the hooves will wear naturally by themselves. You will not need other tools. There are horses which do not need even rasping.

Strange as it seems, for many people — even “professional horsemen” — the issue of picking up the horse’s legs for a trim is something of great importance and sometimes it is even an unsolvable problem. Why it is so hard to do sometimes? Just because the horse wasn’t taught to do it. Or he was taught to give his legs only if he is beaten or frightened, or abused in some other way. So, what if you are not doing those things and you are very polite and yet the horse stands stock still ignoring your fuss around his hooves?

What should you do? Of course — teach and re-teach. There is no other way. You must teach tenderly and calmly but firmly.

How should you do it? For the ones who follow the NHE path there is no need to explain. Truth be told, there is no difference between teaching how to give a leg for a trim or teaching the Spanish step or reading.

Don't only trim the cadaver hoof, but dissect it in different ways. Dissect it as much as possible. It's a way to success.

For trimming the horse should stand on even, hard and clean footing. His posture should be natural and relaxed. If the horse tries to shift his weight on the hindquarters as soon as you lift the front legs, it means that the other front leg (which is now weight bearing) is in pain.

Put the leg down and move the horse to some softer footing — sand or wood shavings, for example and investigate the problem. If the horse does not like to give you a hoof at all it may mean that the other leg is in serious pain. Often the cause of the “stubbornness” is the increase of the pressure on the stretched white line or the bars touching the ground on the other leg. In this case trimming is obligatory. Also horses tend to refuse to lift a leg if the other one has arthritis, laminitis, etc. In this case — serious pain — it may be worth it to reconsider trimming and weigh all the circumstances in order to decide what is a priority for the horse in the particular moment.

If you really need to trim try to do it on soft ground. To prevent the hooves from being packed with dirt which hinders trimming as it requires brushing or picking every time the hoof is lifted, place a piece of thick polyethylene, or foam rubber on the ground under the hoof.

If it is a case of a long toe, for example, — try to rasp it back without picking up the hoof.

Forget all the common sportive rules: don't tie your horse. Let someone help you by holding the lead rope, caress the horse and give him something tasty. This way the horse will let you take his feet and will stand still. Put some hay in front of the horse — better to put it in a wheelbarrow or on a hay bale so that the horse will keep his balance. Entertain and calm your horse by scratching his withers or any other “itchy” spot. Some time ago my Lipisina stood badly when her hind legs were trimmed (she had a serious injury of the hind leg in her childhood. For a long time she shrugged when someone touched this leg), but if one would scratch her withers, she would relax and stop worrying.

I would like to mention specially, never try to ask a horse to give you his hind leg while standing as far away as possible with your arms extended, as do those who are afraid of horses.

You should pick up the hind legs while standing very close to the horse's thigh. In this case the risk of being kicked is minimal. Keep in mind that to kick you a horse has to free his leg from your hands first. To do that he first makes a safe

movement of the leg towards his belly and only after kicks backwards.

Also, remember that it is very hard to trim in the bright sun.

If a horse moves little and only on soft ground, his hooves will not wear on their own. In this case you should file the hoof walls once a week in order to imitate the natural wearing of the hoof. If you don't do it, in a month or so you'll have to trim the horse "for real", with the help of knives and nippers. Try to avoid such situations. In addition to the difficulties and time-consumption of such trimming to you, rarely trimming (I know owners who trim the hooves of their horses two times per year!) is not healthy for the horse, as it may dramatically change the balance and cause discomfort which can potentially cause any injury.

So the rule — trim as often as needed to imitate natural wear. Do not allow the balance to be dramatically changed between trimming sessions.

Remember that you should practice on cadaver legs not only once before the first trimming of a live horse but as much as possible.

Believe me, during the first trimming session of a live horse a lot of questions will rise in your mind and you will find the answer in the trimming of the cadaver again.

Keep a cadaver hoof near so if you have doubts — to cut or not to cut live hooves — try on the cadaver first.

# ARE YOU READY FOR TRIMMING?

Actually trimming is a dangerous procedure and it's really important to be in perfect physical form. If you are a small weak lady, do not try to trim, the experiment can end badly. I recommend visiting the gym regularly to everybody long before the first trimming session. You need good muscle fitness to cope with such heavy labor, to prevent injuries and to be fast and in nimble in your reactions.

When training on a cadaver hoof remember, that there is a big difference between a cadaver and a live horse. For trimming the live horse you should be fit, have fast reactions, predict the horse's reactions, remember where your tools are and what you're going to do.

**Never try to trim if you have pain in the back or any injury which can prevent you being mobile enough to move away from a kicking leg.**

However prepared you may be, it will still be hard at first — physically and morally.

Marjorie Smith advises to try to trim only a couple of hooves a day — fronts or hinds.

Go back and forth from one hoof to another so that if you are to stop trimming for some reason, the hooves won't be too different. It's better not to try to trim all fours at a time if it takes you longer than an hour.

Always remember that the first trims are the hardest ones. As soon as the hooves are in relatively good shape, the trim will take mere minutes and make you and your horse feel happy.

Yet mind my words — after the first trim your hands might be shaking, especially if you are not used to precise and physical labor.

# **EVALUATION OF HOOF GROWTH RATE AND BALANCE — “FIELD” STUDY**

Sometimes I hear from people that the hooves of their horse do not grow at all, that there is no need to trim, even to rasp. Surely, there are such cases. What does it mean?

It means either that you just do not see the growth as the hoofs are trimming themselves naturally or that the horse is unfortunately not healthy, and its lifestyle should be corrected.

However there are differences in growth between different horses, different breeds.

Natural breeds usually have stronger hooves with good, correct hoof growth, while artificial breeds selected for different reasons, like thoroughbreds, according to my observations have much worse quality hooves.

It's important to know that vitamin deficiency, even starvation is not obligatory to stop hoof growth, while lack of movement, any metabolic disorders or imbalance can cause very slow, even almost no hoof growth.

Actually, normal hoof growth is not easy to see, so to know how your horse's hooves grow it is very important that you can observe it easily.

Just put a mark around the hoof at the level of coronary band and check where the mark is in a week or month. It's a very interesting experiment and I suggest you start it as soon as you are able.

Also, you will notice if the hoof is growing evenly all around — normally the rate of hoof growth in the heels and toe is a little bit different — or unevenly, in which case you will try to sort out where the horse has an imbalance.

In the case of imbalance the line of the marker can be curved. These very important observations can help you to evaluate the condition of your horse's hooves.



# NECESSARY TOOLS

I will not thoroughly discuss the tools here as there is a lot of available information about knives, rasps, etc. NHE did not invent anything new regarding tools and you can even use information from traditional farriers. However, I recommend the web site of Marjorie Smith ([www.barefoothorse.com](http://www.barefoothorse.com)) where you can find wonderful and easy to comprehend advice.

Some advice from me:

All instruments should be of the best quality you can afford, but at the same time, I do not advise to invest money in expensive knives if you are not going to earn money by trimming.

I believe that to care for one or two horses you need to use only a rasp to shorten the walls and nothing to cut the sole. So it's better to invest in a really good rasp or even a couple of them. When buying the rasp, you can buy a handle also to enclose the pointed end of the rasp, but I doubt that you will be able to hold the rasp by it, as it's really very difficult for newcomers. So a handle is not obligatory, but it can be a safety measure for avoiding injuring yourself or the horse with the sharp end.

Actually, I even recommend that you borrow the instruments for the first session and then decide what you need further.

At the first session (preparation for trimming) you need the following:

**Hoof pick.** Clearly, you must clean the hooves with a hoof pick before trimming.

**I advise to always use the hoof pick when you can for removing the dead horn layer while trimming (if necessary) instead of a knife, as it's much safer.**

Wash the hooves if you are not able to clean them with a brush. You should clearly see what you are going to remove. In addition, any small stone stuck in the hoof will damage your knife, rasp or nippers.

**Camera.** Photos are obligatory. See above.

**Measuring instrument. Hoof gauge.** To be honest, you don't need to measure anything. But I understand perfectly that experience and a good eye are not given by birth. Maybe it's ok to rely upon the eye of a professional, but never rely upon your own eye when you are going to trim for the first time. It's better to measure everything beforehand and measure very thoroughly. There is a very good Russian proverb which says — measure thrice and cut once. Follow it and you will be successful.

Well, the first thing which comes to mind when you need to measure a hoof is a hoof gauge. There are dozens of varieties of gauges: the classical hoof gauge, Jackson's tool, Strasser's tool, etc. Choose any or try all of them. You can also use transparent plastic triangles with the angles of 30/60 or 45/45 degrees. Also you will need a ruler and a protractor. In addition you can cut the plastic triangles to make a tool with one side of 15–20 cm and another of 4–5 cm (with 1 cm increments).

**Marker, paper, pen (waterproof)** for marking on the hoof wall. Write down all your measurements, thoughts and doubts on paper. Search for the answers in the books later. There are a set of tools which are obligatory for every trim.

**Rasp.** Tip: Do not use a very sharp, new rasp on a live horse for your first trim. You may miss the second when you should stop and remove too much.

Try to find some good but slightly used rasp (not dull or bad quality), thus you won't be able to remove too much horn. Although it will be more difficult for you to work, you won't make any serious mistakes.

The most important thing when you work with the rasp is to learn how to make flat movements. Any turns and twists will make the hoof uneven and will lead to a medio-lateral imbalance.

**Thick gloves.** Never trim or just rasp without gloves. This rule is written in blood.

**Trimmer's pants** (“chaps” or “farrier's apron”). A worthwhile garment to hold your tools and protect your legs. Do you remember western films? You should operate with your tools as fast as Clint Eastwood with revolvers. Put your rasps and knives in the pockets of the pants before trimming and train yourself to take them out and place them back without looking at them —

automatically and fast.

Always place tools in the same pockets and you will never lose time searching for tools during trimming and you'll reduce the risk of injuries.

**Good strong boots.** Obligatory! The horse may stomp on your bare leg any moment — even a very polite horse. In addition, you may accidentally drop tools on to your feet, so, even in very hot weather, wear boots with re-enforced toes.



**Fig. 1.3. Hoof gauge. © Nevzorov Haute École**



**Fig. 1.4. Tool set for the trim. © D. Raykin**



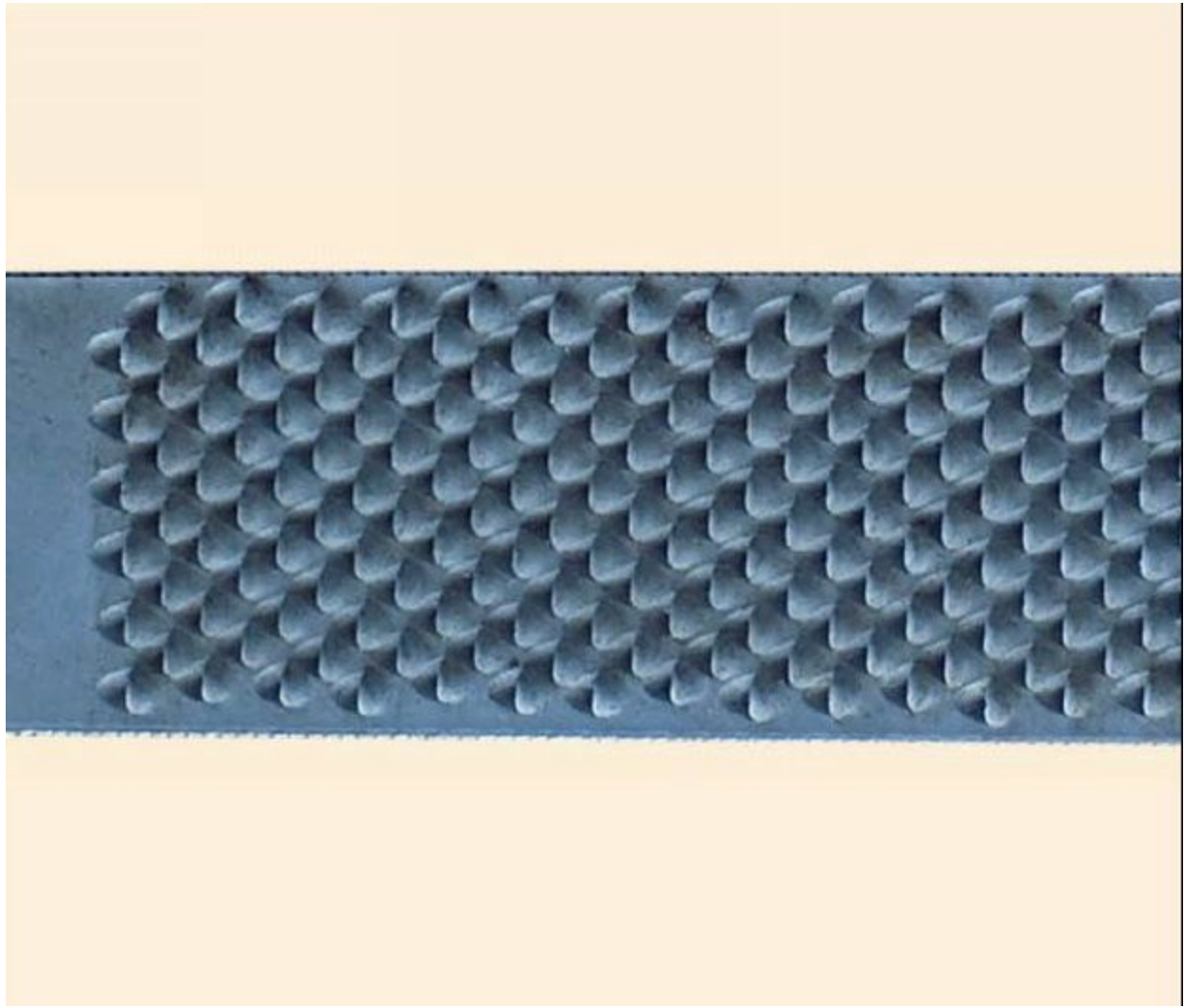


**Fig. 1.5. Remove the dirt from the collateral grooves at least once a day. © T. Batalina**





**Fig. 1.6. The “soft” or fine side of the rasp for the fine work. © Nevzorov Haute École**



**Fig. 1.7. The “rough” or coarse side of the rasp is for removing large amounts of horn. © Nevzorov Haute École**

## **Other tools which can be needed while trimming:**

**Knives.** Two hoof knives, one each for right and left hands (both knives are held by your dominate hand) or one double-sided knife.

The main rule is, if you buy them, never think about economy. There is a lot of information about knives available, as well as a wide range of styles. Investigate them all, but in general avoid modern or sophisticated designs.

### **Practical advice**

Tungsten-carbide sharpeners are much handier and durable than whetstones.

You can buy one almost anywhere, not only in a special farrier shop.

My father bought one in a kitchen knife shop. We've compared it with the one I bought at the farrier's shop and found out that they were just the same.

*Varvara Lyubovnaya*

Use simple and traditional knives. Never buy long knives. Remember that you should cut with the very end of the knife, and the long one can prevent you from being precise.

In addition work with a long knife can cause pain in your hands and wrists so it is easier to use a short knife.

**Sharpener, straightening tool or sand paper.** A knife should cut the horn like butter.

New knives are never sharp enough. While you are new to sharpening hoof knives just follow the angle the blade already has using a whetstone, but better take advice or help of professionals.

**Hoof nippers.** Actually nippers can be easier to use than a knife. They are not fool proof, yet you are less likely to cut yourself or injure the horse, so I recommend it for the novice, but with serious precaution. Still, never cut more

than the overgrown wall. try them on cadaver hooves and get a feel for them. It is important NOT TO SLOPE the walls! Cut them the way that they become even. So that if you put the rasp across the walls in any direction it would lay firmly on them across the entire hoof. Remove the horn of the wall so that there are about 5 mm left above the sole and even the rest by the rasp.

Also, for your and your horse's comfort.

**Hoof stand.** A hoof stand is a good investment for every horse owner. Do not try to substitute cheap pieces of wood or any other gadget for the hoof stand. It probably won't work and will only raise the risk of injury. It's worth it to start using a hoof stand from the very beginning- right from the first trim. Do not think that it's needed only for professionals who trim 10 horses per day. No, on the contrary, you need it much more than they as your hands and back are much weaker than theirs. You will feel it all the next day after your first trimming session without a stand. If you use a stand your back would not hurt at all, your arms would get 90 percent less tired just because you won't need to hold the weight of horse's leg, and in some cases even half of the horse's body, as many equines like to rest on your hands while trimming.

**Apple cider vinegar solution** in a spray bottle It is almost impossible to trim hard dry hooves. If the weather is dry, prepare a spray bottle (1/4 apple cider vinegar and 3/4 water) and spray the hooves from time to time. Keep in mind that a hoof should get about 20 percent humidity from the outside. If the weather is rainy you may put aside any kind of soaking but if it's dry, soak the hoofs daily.



**Fig. 1.8. Double-sided hoof knife. © Nevzorov Haute École**



**Fig. 1.9. Loop knife. © O.Grishko**

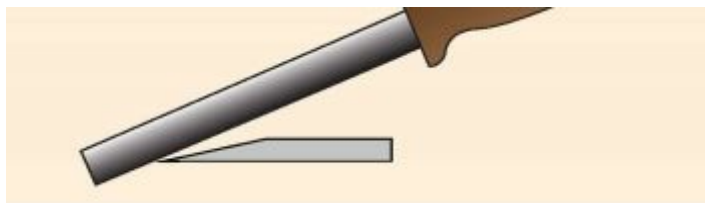




*A correct angle of the sharpener which gives a good cutting edge.*



*The angle is too shallow, the cutting edge would be too long and fragile and can easily break.*



*The angle is too steep, the cutting edge would be too dull and would cut badly.*

**Fig. 1.10. Knife sharpening scheme. © Varvara Lyubovnaya**

## TRIMMING IN A SITTING POSITION?

It's possible yet the sitting position has a big flaw — the absence of mobility. If, heaven forbid, you get yourself into a situation where you would need to withdraw immediately, there is a risk that you won't do it in time. That is why the sitting position is suitable only for the trimming of well-mannered horses and by professionals who “smell” the situation before hand. I do not recommend to use a stool while you are beginner. Again, what I strongly recommend to ease your life is a hoof stand.

If the weather is dry you might need to sharpen the knife after trimming every hoof. If it is rainy you may trim all the hooves after a single sharpening of the knife.

If the hoof wall is not very high at the toe you must rasp it only from the outer side of the hoof capsule (not from the sole). Position the hoof on your knee or on the hoof stand (see fig. 1.15 a–b). We will talk of this in detail later.

### **Practical advice**

Speaking of hay, if your horse topples the wheelbarrow, you could use our method. Tie a hay-ball (a safe “hay net” made of plastic tubes) to the two stable ties high enough for the horse not to be able to put his legs in it, but low enough for him to eat comfortably. If you put the hay on the floor you shouldn't even try to trim the fronts — it is very hard for a horse to eat from the floor level while balancing on just one front leg.

*Varvara Lyubovnaya*

### **Practical advice**

Sometimes the hind hooves or even the front ones are to be trimmed while the hoof is on your knees. It depends on the situation. My horse Lo has arthritis and it is hard for her to lift the left hind high, so the best position to trim it is when her hoof is almost at the floor level. And this is not only Lo's case! Many

horses prefer to hold their hinds as low as possible. You can press the hoof to your calf or put it on your thigh while standing on your knees. This way a horse would not be able to pull the hoof away quickly, it would be comfortable for everyone involved and your hands would stay free.

*Varvara Lyubovnaya*

Before you begin your work, sharpen your knife and put on the gloves. Clean the hoof with a hoof pick to remove dirt and small stones, from the white line in particular.



**Fig. 1.11. Hoof stand for trimming. © Nevzorov Haute Ecole**

Horses often pull their legs from the hands of the trimmer. It is very dangerous. Mind this beforehand. You cannot trim normally if a horse pulls his legs violently while shoving you aside. The cause of this behavior is pain 90 percent of the time.



**Fig. 1.12 a–b. If you are strong enough, assume the “farrier’s position”, holding the hoof with your thighs (toes inward for a stronger grip). Try not to pull the horse’s leg too far away from its body, it may be painful. Stay as close to the side of the horse as you can. © T. Batalina**



**Fig. 1.13. A hoof stand is very handy for the rasping of the hoof wall. © L. Nevzorova**







**Fig. 1.14 a–f. Correct and incorrect knife positions. © D. Raykin, T. Batalina**



**Fig. 1.15 a–b. You may rasp the walls while holding the hoof on your knee, but it is better to use the hoof stand. © D. Raykin, Nevzorov Haute École**





**Fig. 1.16 a–c. If the white line is stretched, you can cut the horn at the toe with the nippers or rasp at a 45 degree angle to the sole. Anyway, you should do this only if you are skilled enough. © P. Laidely**







**Fig. 1.17 a–h. Correct and incorrect rasp work. Try to control it and make no random movements. © D. Raykin**

## CHAPTER 2. EVALUATION

At the first session set yourself only ONE but really important task — try to assess and analyze the situation correctly. You are to decide what you should change in the hooves' balance.

You may examine the horse, take pictures of him; take any necessary measurements, mark the hoof walls and scrape the sole with a hoof pick to find out how much of the dead horn you can remove. The main thing is — do not take the rasp or the hoof knife this day. Listen to my kindly advice.

I highly recommend making a radiograph (X-ray) of the hooves and blood test beforehand. Not in a year or a couple of months, but in a couple of days before the trim.

You also ought to know if the horse has some general diseases: mind that many hoof problems are the consequences of the influence of some other factors such as diseases, bad diet, management and treatment.

Some internal diseases and many of the traumas create biochemical problems which in their turn influence the growth and the balance of hooves, so sometimes it is impossible to rehab the hooves with the trimming only. You should find the cause. (Pain and stress as a result of the sport load, bad-fitting saddle, use of bits, bad boarding conditions, absence of free-range movement, box keeping, improper diet — these are the most common problems). Unfortunately, many horses have a terrible past.

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First of all, assess the horse's posture when he is at rest in a familiar environment. Look closely for the flaws of the conformation, check for asymmetry, atrophy or, on the contrary, the hypertrophy of the muscles, etc.

Watch how the horse moves when he walks and trots.

It is better to watch the horse and his movements in the field or the paddock before you lead him to the trimming place. This way you'll be able to assess the horse's condition better, you may try to understand if he is balanced and



how easily he moves. You would notice any obvious lameness also. Walk the horse on soft and hard ground (you'll have to ask someone to help you).

**Q.:** Why should I get a blood test?

**A.:** A blood test may show you if there is inflammation, liver or kidney dysfunction. If there are some of these, any hoof rehab should be done with a great caution.

Everything mentioned above is very important. The subject is wide and serious, but I can't describe all the signs of lameness and incorrect balance in one book. I also cannot guarantee that you'll understand what is happening with your horse from the book description. This requires a professional, but experience has shown that even veterinarians (Russian ones in particular) cannot see the lameness, let alone arrhythmia or stiff and constricted front legs.

Nevertheless, at the very least you still must try to learn how your horse positions his legs while standing. Note how the front legs are positioned. There are two most important and easy-to-notice signs of some serious problems: if the horse tends to put his front legs under the body, there must be some lameness in the heel area (navicular syndrome, for example) and thus the horse tries to move the weight from the heels to the toes.

If the horse puts his front legs out, there is some inflammation in the toe area (laminitis or/and stretched white line). In these cases the horse tries to move his weight from the toes to the heels trying to ease the pain in his toes. Although, sometimes a horse with a bad case of navicular disease puts his legs forward as he would do if he had laminitis. This way he tries to remove some load from his heels and deep digital flexor tendon.

If a horse puts one leg forward or, on the contrary, puts it under the body while at rest, this leg definitely has some problems. Watch it closely. Often horses whose hooves are in pain shift from foot to foot, lifting one heel from the ground for a moment and then putting it back. This is a sign of hoof pain. Another sign of heel pain are high heels. When a horse tends to "spare" his heels (to load them less) they grow higher and higher which, in its turn, causes

even more pain.

Any anomalies of the growth, contraction, cracks, rotten frogs, splints, arthritis, ringbone, edemas and wall separation may cause pain and lameness or be the consequence of it.

Don't forget the cavalry saying: "When does a horse stop limping? — When it limps on all fours". Often horse owners don't see any lameness because their horse is a complete cripple. Keep that in mind.



**Fig. 2.1 a–b. The most typical postures, during laminitis and pain in the heels of the front hooves. © P. Laidely, A. Oranskaya**

## HOOF EXAMINATION

Let us begin the examination of the distal part of the limbs and of the hooves themselves.

Of course, the knowledge of anatomy and experience allows you to assess the situation much faster. It will come in time, as well as the ability to visualize the inner structures through the outer ones and the understanding of the influence of the smallest changes of the hoof geometry on its overall condition. Also, there is no standard: much depends on the horse's constitution, breed, life and management. All horses are different! Nevertheless, you ought to maintain the dorso-palmar and medio-lateral balance.

I suppose you could be well aware of your horse's hoof problems and you can say for certain which diseases your horse had for many years and which occurred recently.

Check the digital pulse. Feel the distal part of the limbs and coronary bands to find any swellings, notches, edemas, ringbone, splints, or pain in the lateral cartilages. The carpal tendons should be well defined, the joints should be dry (with no swellings).

If a horse jerks back his leg when you touch it, it means that the leg is in pain and before you trim you should find the cause of it.

If the manual examination hasn't shown anything suspicious, you may begin to examine the hooves themselves.

So, take the horse to some place which is comfortable for both of you and has plenty of light, ask the horse to stand on clean and even footing like asphalt. Make sure your horse stands on all fours. This way it will be easier for him to keep his balance.

Ask someone to stay with your horse. Prepare your tools in advance. Clean the sole of the hoof thoroughly with the hoof pick and a brush. Wash and dry the hooves if necessary (and it usually is).

Examine the hooves, analyze the changes that happened from the last trim.

## VISUAL EXAMINATION

1. Walk around the horse standing on firm footing, look at his posture. Check the degree of the dorso-palmar and medio-lateral imbalance.
2. Visually estimate the quality of the hoof wall horn — if it's even, smooth or if there are some changes like dents, laminitic rings, exfoliation of the horn surface, etc. Make note any obvious problems — cracks, chunks broken off, traumas, bruises. Feel the hoof to find out if there is a difference in the temperature.
3. Compare the corresponding pairs of the hooves and notice the significant differences — angles, size, quality and the growth direction of the hoof horn. Look at it all from the ground level, from the sides (you still don't have enough experience to assess the hoof while just looking at it from above), notice the toe angle.
4. Check whether the frog touches the ground. Try to shove a plastic ruler under the frog from behind while the horse stands firmly on all fours on asphalt or concrete footing. If the frog touches the ground, you won't be able to shove the ruler under it. If you are able to do it, it means that the frog doesn't bear sufficient load which contradicts its intended purpose.





**Fig. 2.2 a–d. Feel the coronary band with your fingers while the hoof is on the ground and when in suspension. © E. Esina, P. Laidely**





**Fig. 2.3. Hoof #II. This hoof shows the signs of medio-lateral imbalance. Note that the coronary band is not parallel to the ground and one of the walls has flared. This hoof has an already low profile so it shouldn't be lowered, but the balance should be corrected.© V. Schestakova**



**Fig. 2.4. Finding the frog position. © T. Batalina**



**Fig. 2.5 a–b. Press the rasp across the hoof wall. If there are gaps — there are problems. © K. Toropova**



**Fig. 2.6. Note the place where the wall flares. © S. Dziluma**





**Fig. 2.7. Overgrown walls will not grow forever (foundered hooves excepted), they will break off to the solar level. This is how it happens in the wild, but the white line of the domestic horses is much weaker and such an overgrowth can lead to a bad case of stretching. © P. Laidely**

5. Press your triangle ruler to the hoof wall from the coronary band to the solar edge. Does it lie firmly on it all the way down? Or there are some gaps or inequalities between the ruler and the hoof wall? Mind the angle of the upper third of the hoof wall. Is it the same as the angle of the hoof wall from the toe towards this spot? Press the ruler this way all around the hoof capsule. If there are any gaps — there is a stretched white line. The first 1–2 cm of the hoof wall right below the coronary band show how the coffin bone is placed in the hoof capsule, so for the wall to adjoin the coffin bone all along it, it should have the same angle.

Now look at the hoof from the sole. How does the white line look in the places where the hoof wall is uneven?

6. Examine the sole. Find out if there is a need to trim at all. Scrape the solar horn with the hoof pick.

You may remove as much horn as you can, as long as it crumbles and falls away with the pick.

You should not remove the firm and elastic solar horn! Nevertheless, don't be afraid you'll hurt it with the hoof pick.

It is very important to scrape the horn at the toe area, around the frog and at the seat of corn areas — the place between the heel and the bar. If the bars DON'T LIE OVER on the sole, you may find out the solar level easily by scraping the old horn. The true sole level is the most important guide!

### **Practical advice**

To thoroughly prepare the hooves, which is essential in rainy and muddy weather, if you have no water hose at hand, use a common sponge. You won't be able to put enough water on the hoof with a brush, and the fine dirt which fills the cracks and anatomical cavities of the hoof is easier to remove with the plenty of water than with violent brushing. So, a plastic bucket and sponge will make your life much easier. After you wash the hoof, wipe it: the dry hoof does not make hotspots in the photos; also, dust and wood shavings do not stick to it



that easily, which you can't elude even if you put the wet hoof on polyethylene.

*Maria Sotnikova*

7. Look how much the hoof wall has grown above the solar level, what is the shape of the bars, are the heels contracted. Consider how much you could remove and what you must cut off.

8. Look at the hoof frontally. The width of the coronary band (the line which is parallel to the ground) should be approximately the same as the height of the hoof wall in the toe area.

If the hoof has not been trimmed for a long time, the height of the toe will be much greater than the width of the coronet (see fig. 2.8).

Usually a hoof of a domestic horse has a height of 7.5–10 cm (measured from the toe to the hairline), although, some exceptions occur, in the case of pathologies in particular.

9. Look at the coronary band line at the sides of the hoof. Is it straight? Are there any bends or bulges? If there are, scoops may be necessary.

Besides the basic examination (people tend not to look at the hooves closely at all), you'll have to measure the hooves. Measurements are necessary to understand the geometry of the hoof and to decide whether you need a correcting trim or just a usual maintenance trim. You'll have to do this only in the beginning. Later everything will be obvious. For now the measurements will give you more understanding and confidence.



**Fig. 2.8. Note that one of the walls had flared, but just a little, while the height of the hoof is much greater than the coronet's width. © T. Batalina**



**Fig. 2.9. An average hoof height. There is no need to lower the capsule. © V. Schestakova**



**Fig. 2.10. Draw a line (imaginary or a real one on the photo) along the hairline. This hoof has a part of the wall bulged upwards at the side of the capsule. A scoop can solve this problem really fast. © P. Laidely**

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To measure the hoof, you should use the measuring tool as shown in the photo (see fig. 2.11).

You can bring the “glass” (an unbreakable one, of course) against the side of the hoof (it will be better if you have a helping hand here) and move a couple of steps away. Then you may define the coronary angle (in the healthy hoof it usually equals **approximately** 30 degrees) and find out if it is far from the average one.

It is handy to use the plastic triangle to define the heel height: place its shorter side at the solar edge of the hoof and its larger one (the one with the divisions) to the heel and measure the space from the solar edge to the lateral cartilages and to the hairline (coronary line).

You can use a felt-pen as well and mark the assumed or the “desired” heel height. This line would be another guide for you when you’ll be lowering the heel area.

Sure enough, hooves differ in size. For example, hooves of the wild horses are usually shorter than the ones of domestic horses. Although in both wild and domestic horses the perfect angle of the dorsal wall is considered to be 45–50 degrees on the front hooves and 55–60 degrees on the hind ones.

I must remind you that one shouldn’t try to adjust all the hooves to some standard.

**Keep in mind: only a severe deviation (more than 5–7 degrees) from these standards should be considered a problem.** The spread of the average angles and sizes is very large.

You’ll learn how to find the “proper” angle for the particular hoof with time, there is a sum of factors to guide you.

**Keep in mind that the incline of the dorsal wall goes along the coffin bone only if the white line is not stretched and there are no consequences of laminitis and founder. When the white line is stretched for some reason,**



**the incline of the dorsal wall CANNOT be considered a trimming guide to define the position of the coffin bone in the capsule. Only the first centimeter below the coronary band can guide you somehow.**

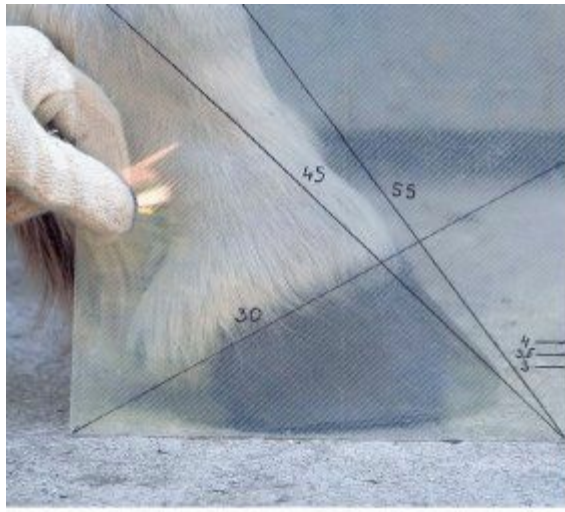
The width of the sole of a healthy horse usually matches the width of the coffin bone and its branches (palmar processes), and its thickness is more or less the same in all areas. The concavity of the sole matches the concavity of the coffin bone and the corium. Pete Ramey states that the healthy hoof should have a sole as thick as 1.3 to 1.9 cm, collateral grooves 1.5 to 2.5 cm deep and concavity of approximately 1.3 to 1.9 cm.

It is unlikely that your horse's hooves will fit into those parameters. I myself had never seen a healthy well-functioning hoof with such deep grooves and concavity. Although for the time being you are making the measurements only to get your direction and secure yourself from mistakes. The 2.5 cm is the maximum depth of the collateral grooves and we will use it as an anchor point on purpose.

How should you define if the trim is necessary? Is the hoof overgrown? I can safely say that if you can't see and understand it yet, it is rather early for you to trim on your own.

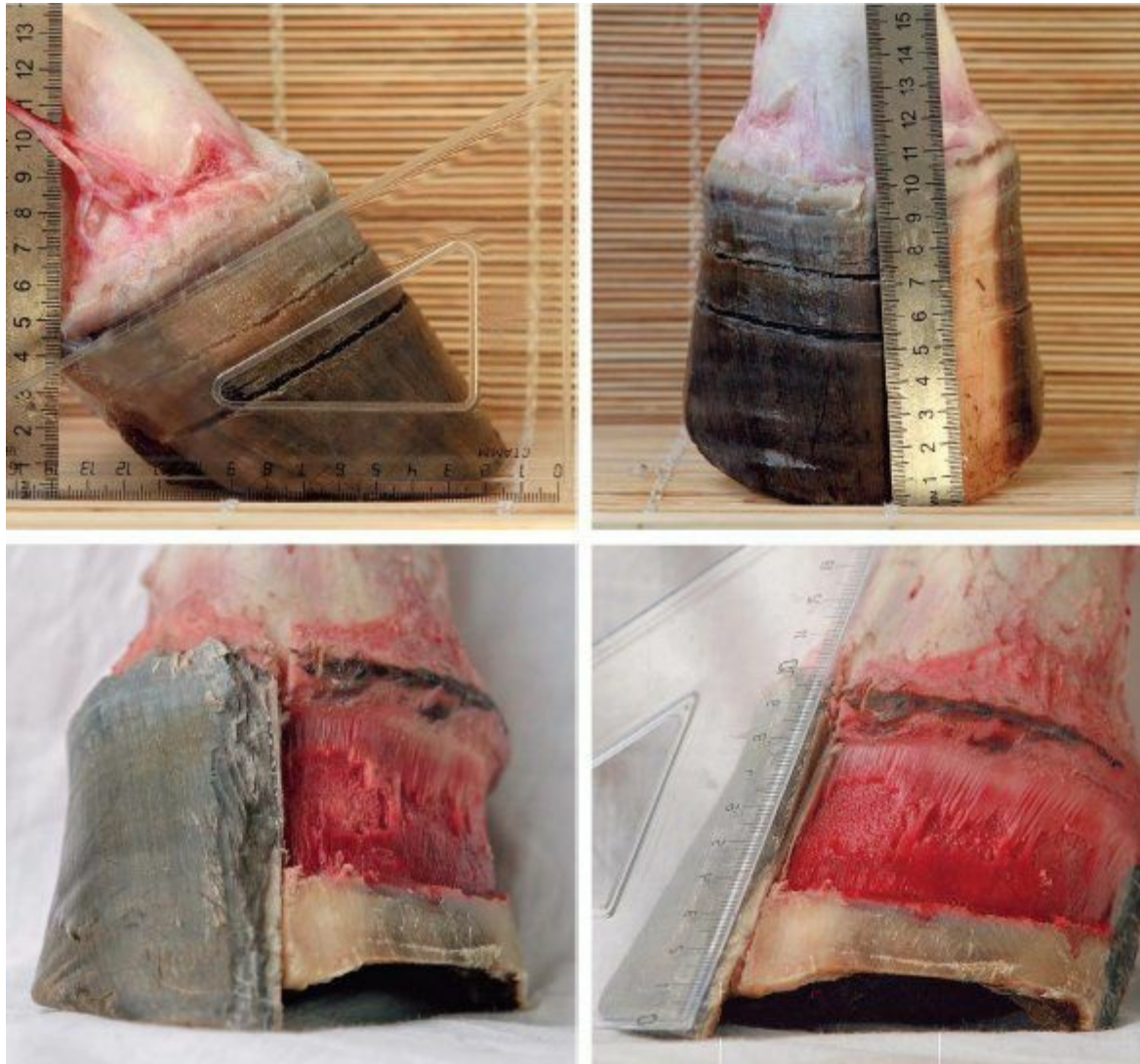
So, trimming is necessary if:

- the length of the dorsal wall of the hoof is more than 10 cm (11–12 cm and longer);
- the depth of the solar concavity is more than 1.9 cm and the depth of the collateral grooves is more than 2.5 cm;
- the outer perimeter of the sole is much deeper than the hoof walls (much deeper than 3 mm);
- the bars are lain over on the sole or cover it completely;
- the frog doesn't reach the ground;
- the white line is stretched (it's wider than 0.5 cm), the hoof walls have the shape of a "bell";
- the medio-lateral or dorso-palmar balance is upset;
- the heels are under-run, folded under the hoof or anomalously long;
- there is chipping, cracks of the hoof horn, splitting or separation of the walls, etc.



**Fig. 2.11 a–f. Different ways of measuring the size and proportions of a**

**hoof. Mind that all the measurements are taken on the standing hoof. © S. Dziluma, S. Gorovaya, T. Batalina, S. Ponomareva**



**Fig. 2.12 a–d.** Upper row: despite the overgrown walls, this hoof has a coronary angle of 30 degrees. Lower row: Note the thickness of the sole.  
© N. Bikova



## SUMMARIZING THE FIRST DAY

It will take you about an hour or hour and a half to examine the hooves thoroughly and to take all the pictures. Write down your thoughts after the examination. In the evening make yourself comfortable and mark all the places which concern your case (as you think). Study the photographs you've made and the ones presented in this book.

Print the pictures of your horse's hooves. Study those thoroughly.

Draw a line along the first centimeter of the dorsal wall (right below the hairline) on the side view. See where this line goes at the solar level.

If this line doesn't run along the dorsal wall all the way down, it means that there is a serious separation of the hoof wall present or the rotation of the coffin bone as a result of laminitis (in this case the incline of the dorsal wall will have a lesser angle than its first centimeter below the hairline).

If the incline of the first centimeter is the same as of the whole dorsal wall, it might mean that the hoof is healthy which should be proved with the absence of the stretched white line if you view the hoof from the sole. Nevertheless, sometimes it occurs with pathologically steep (almost upright) hooves or in the case of the clubfoot.

Check the angles of the coronary band and the dorsal wall. If the angle of the coronary band is much less than 25 degrees and the dorsal wall has the incline of more than 55 degrees, the heels should be very high and the coffin bone would be placed in a pathological way — too vertical.

When you trim the steep hoof, keep in mind that the toe part of the coffin bone in such a hoof is often deformed and goes very far down. It literally rams into the solar corium with its sharp edge, the sole in the toe callus under this corium is very thin because of the bad blood flow and corium necrosis.

Be extremely careful with such hooves and never trim them before you study the issue thoroughly!

In the morning, with your head clear, examine the hooves once more and consider everything again. If you are still determined, take it on, but keep in mind the old saying: measure thrice and cut once.

**Pete Ramey:** If you lower the walls carefully and



watch the mustang roll, if you do not interfere in the frog's work, if you'll let the horse walk on natural ground, even the most unbalanced hooves will wear off and crumble all the excessive tissues on their own!

Keep in mind though that it is possible only if you have proper terrain — abrasive and nonabrasive areas and if your horse gets enough movement. If the movement is limited and the ground is soft you'll have to aid the hooves yourself.

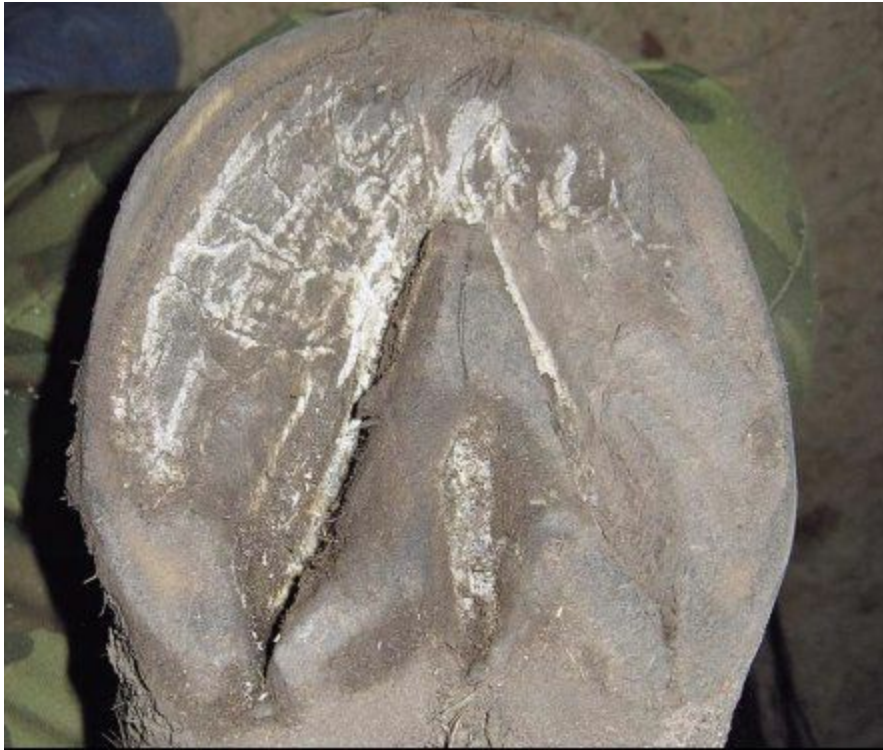


**Fig. 2.13 a–b. Mustang hoof and the hoof of a free roaming horse of Samara, Russia, in comparison. © P. Laidely, T. Batalina**



**Fig. 2.14 a–b. An averagely balanced hoof and a steep one (not yet clubfoot). © K. Kotsinyan, E. Kuzina**





**Fig. 2.15 a–b. Top photo: The hoof doesn't need to be trimmed. Bottom photo: The hoof has some crumbling non-laminar bar horn which had totally covered the sole. These calluses crumble easily and could be**

**removed. © M. Sotnikova**





**Fig. 2.16. Heels of this hoof could be lowered and it needs a mustang roll.**  
© R. Zegelaar



**Fig. 2.17. This hoof needs a trim. The walls are badly overgrown and are much higher than the sole. The sole mustn't be touched. © P. Laidely**



**Fig. 2.18. Trimming is required. The walls should be rasped (the white line is stretched) and the heels should be lowered a bit. © E. Esina**





**Fig. 2.19. Trimming is required. The heels are a bit higher than the frog and the sole. They should be cut down a little. © K. Kotsinyan**



**Fig. 2.20. Trimming is not required, but the toe should be shortened a little and the balance checked. © O. Shadrina**





**Fig. 2.21. The bars should be lowered, the balance should be corrected and the walls should be rasped. © V. Lyubovnaya**



**Fig. 2.22. Overgrown heels and bars. Trimming is necessary. © V. Terenina**



**Fig. 2.23. A hoof with badly overgrown bars and walls. Trimming is needed very much. © V. Terenina**





**Fig. 2.24. Trimming is totally contraindicated. © K. Kotsinyan**



**Fig. 2.25. Trimming is required. The heels and all the hoof capsule are mountainous, the frog is rotten and never reaches the ground. © A. Oranskaya**





**Fig. 2.26 a–b. The heels are high, the white line is stretched, trimming is necessary. © V. Terenina**



**Fig. 2.27. The medio-lateral balance is disturbed, the heels and bars are badly overgrown. A complete trim is necessary. © V. Terenina**





**Fig. 2.28. This hoof needs its walls to be rasped, its heels and bars lowered and its frog restored. © I. Rocheva**



**Fig. 2.29. The heel walls and bars of this hoof should be lowered to the level of the sole, the walls should be rasped and the mustang roll needs to be done. © P. Laidely**



**Fig. 2.30.**Here the heels should be lowered and the walls rasped. © A. Oranskaya



## **DESHOEING**

If at the time you've decided to trim your horse yourself he is still shod, follow the deshoeing instructions.

Mind that shod hooves CANNOT be healthy.

### **VERY IMPORTANT:**

If your horse has been shod for a long time, deshoeing may provoke laminitis and lameness. In some rare occasions as a result of the renewed hoof mechanism and blood flow restoration after the deshoeing a general intoxication of the organism or even a lethal outcome may occur. That is why you should be extremely careful and watchful towards your horse's condition. It is better not to deshoe a horse in a hurry in one day.

### **Follow this plan for deshoeing a horse:**

On the first day remove the shoes from the hind hooves. Trim just a little or don't trim at all. Don't change the angles of the hooves! Don't lower the heels or the toe! Just remove the shoes and cut the overgrown walls and chips to level of the sole if necessary, but **DON'T CHANGE THE BALANCE**. Allow the horse to walk freely 24 hours a day on the usual soft ground. If the hooves are really ill and if there is a stretched white line, cracks etc., think of the strategy of the trim beforehand. Don't deshoe your horse before you read this book!

If in a few days the horse hasn't shown any discomfort, if there is no lameness, remove the front shoes in a week. Watch the white line condition. The walls could literally sprawl after the deshoeing, causing inflammation.

Leave the horse alone for at least a week or two. This doesn't mean that you should abandon him in the fields without any supervision. Watch his condition constantly and be ready to give any necessary aid in time.

If in a couple of weeks the horse hasn't become lame and moves actively, you may begin to trim the hind hooves, lowering the heels gradually and returning the hooves to their physiological shape. After that move to the front hooves — act gradually, don't force events.

This way the deshoeing might take 2–3 weeks or more.

# CHAPTER 3. STEP 1: DEFINING THE TRUE DEPTH OF THE SOLAR CONCAVITY

**Aim — to define whether the hoof needs trimming or not.**

Let us begin.

I'll speak with maximum brevity and clarity and won't delve into the reasoning so that I won't confuse anyone, but I'll repeat myself often to draw your attention to the key things.

If during my explanations some questions arise and stay unanswered, if anything is not completely clear, don't hesitate to use other trustworthy sources of information.

Basically, if you happen to know some responsible and thoughtful farrier or trimmer, you may trust him or her to do the first rehabilitating or set-up trim (under your supervision, of course). Just use him or her as a tool. After that you can maintain the hooves on your own.

\*\*\*

Here we will work with the solar side of the hoof.

Let's say that the horse has every necessary condition (including the movement on varied terrain, daily soaking with water, etc.); the coronary band is horizontal if you look at it from the front; the hoof has the shape of a "blunted cone", i.e. it is wider in its solar part than in its coronary part; the heels are not contracted; the horse's proportions and conformation are correct, there are no deviations, but the hoof walls are overgrown.

In this case the trim is almost needless. You'll have only to rasp the long walls where they rise above the solar level higher than 1–2 mm and, possibly,

correct the balance.

If you haven't trimmed the horse for a long time and the walls in the heel area are much higher than the frog level (i.e. the frog does NOT reach the ground), if the medio-lateral and/or dorso-palmar balance is disturbed; if there are some pathologies, the hooves need a course of rehabilitation trimming.

Of course, you may not yet be able to carry out a serious rehab due to the lack of strength and knowledge, but you still can do something.

**ATTENTION:** The following step-by-step trim may be done only once, when you trim the particular horse for the first time. The horse does NOT NEED this sequence of trimming. It is YOU who needs it to master the technique of trimming and the knowledge to do it.

All the subsequent maintenance trims would go almost without the knife and the sole would not be touched. The solar horn should be callused as much as possible to become durable and thick. The toe callus is the most important thing to grow.

I must again strongly recommend you do your first trim on a cadaver hoof.

\*\*\*

The main rule of trimming that you should remember once and for all is this: YOU should NEVER touch the sole, toe callus included, with the knife under any circumstances.

Most of the hooves that were either shod or were never trimmed properly are too low in the toe area. Our trimming is aimed towards the enforcing of the toe area, that's why we're avoiding the unnecessary lowering of the toe and the thinning of the sole. We must allow the toe and all the sole to get stronger and build some thickness, to form a layer of compact and strong horn. This way we deepen the solar concavity of the hoof so that the coffin bone will be lifted above the ground. The depth of the solar concavity should be 1 to 1.7 cm.

Let's begin our trim by finding the true depth of the solar concavity. At first you mustn't omit this step in any case. The whole trim depends on how deep the coffin bone is in the hoof capsule.



Every hoof has a toe callus area, but not every one has the toe callus.

You should have removed all the crumbling and flaking solar horn including the toe callus with the hoof pick the previous day. If not, do it now. The solar horn crumbles easier if it is soaked.

If the hooves are just unshod or were trimmed in a traditional way before, you'll find a cracked, dry and hard horn or, on the contrary, soft — these are the “dead” tissues. Scrape the dead horn with the hoof pick — **ONLY THE HOOF PICK, not a knife** — until you get to the hard and elastic (in other words — “live” or true) sole. It is easy to understand where the live sole begins. It is smoother than the dead one, more tender in its texture and simultaneously hard and elastic.

**The main sign of a sole which you must not touch by any means are: smoothness and density of its texture, “cleanness”, absence of cracks and black holes or pits. Well, you must NOT go as deep as this — as deep as the clean sole begins. The small flakes and shallow cracks are normal.**

Here I should point out that if the hooves are very dry, the old crumbling horn may be hard as stone.

Such horn may not yield to the hoof pick and look like a live sole which you mustn't trim. Do yourself a favor — soak the hooves before trimming.

If the sole is dry and speckled with cracks, the old horn may come off in large chunks while you scrape it with a hoof pick. Don't be afraid, it's OK.

**You may remove only “old”, “dead”, crumbling and flaking horn from the sole.**

**- It is not always necessary to remove the natural flakes. Later**

**you'll learn to understand that they do not obstruct anything, but now you'll have to remove them just to understand if you need to trim anything at all.**

**- If, while “picking” the sole, you’ve found the surface with no more cracks, pits and crumbling horn — stop.**

**- If you see old but dense, callused and shiny sole horn — cherish it!**

**- If you’ve found strangely shaped growths on the sole at the apex of the frog, for example, don’t touch them (if they do not go away with a slight movement of a hoof pick).**

Conserve every millimeter of the sole.

If you see that the walls are too high, the hoof is overgrown and deep (the heels are high, the frog is “at the bottom” of the sole and the sole itself is at the level of the walls), you may need to touch the solar area with the knife.

I must mention that such a need occurs extremely rarely and one should trim the sole only as a last resort. I should also say that in this case you very likely will trim not the sole itself, but the non-laminar horn of the bars which covered the sole because of the insufficient natural wearing of the sole.

**Before you lower the hoof height, measure it well. Assess whether you need to correct the balance.**

You may lower the hoof height equally all the way around only if it has perfect balance and just overgrew a bit.

If you have to correct the balance, for example, lower the heels and grow some toe height (the most common situation), you must not cut (lower) the walls evenly. You'll have to remove some horn in the heel area and leave it be in the toe area.

If the hooves are narrow and contracted, common in recently deshod horses in particular, as a result of the disturbed physiology of the hoof, the sole cannot

widen and flatten downwards and sideways under the horse's weight as it should do. Thus extremely high concavity appears, and the old horn cannot crumble by itself; it is almost useless to scrape it with the hoof pick. In this case, take the knife, but DO NOT yet CUT, just scrape the horn with the hook of it. Keep in mind that this concavity is pathological. **The depth of the concavity of the recently unshod hoof should be defined in some time after the deshoeing, in two weeks or more.** Sometimes the coffin bone “falls” into the hoof capsule on the second day after the deshoeing.

You must trim extremely carefully in these two weeks after the shoes are removed. If you do not touch the sole you will minimize the risk. **Until we define the real depth of the concavity we must not cut the solar horn even if the hoof is badly overgrown.**

So, if the frog is massive at its apex and you cannot see where it connects with the sole, you should find this juncture. To do it you should carefully and slowly scrape the sole at the apex of the frog from the toe side (as seen on the Fig. 3.7) with the hoof pick, DO NOT CUT IT WITH KNIFE.

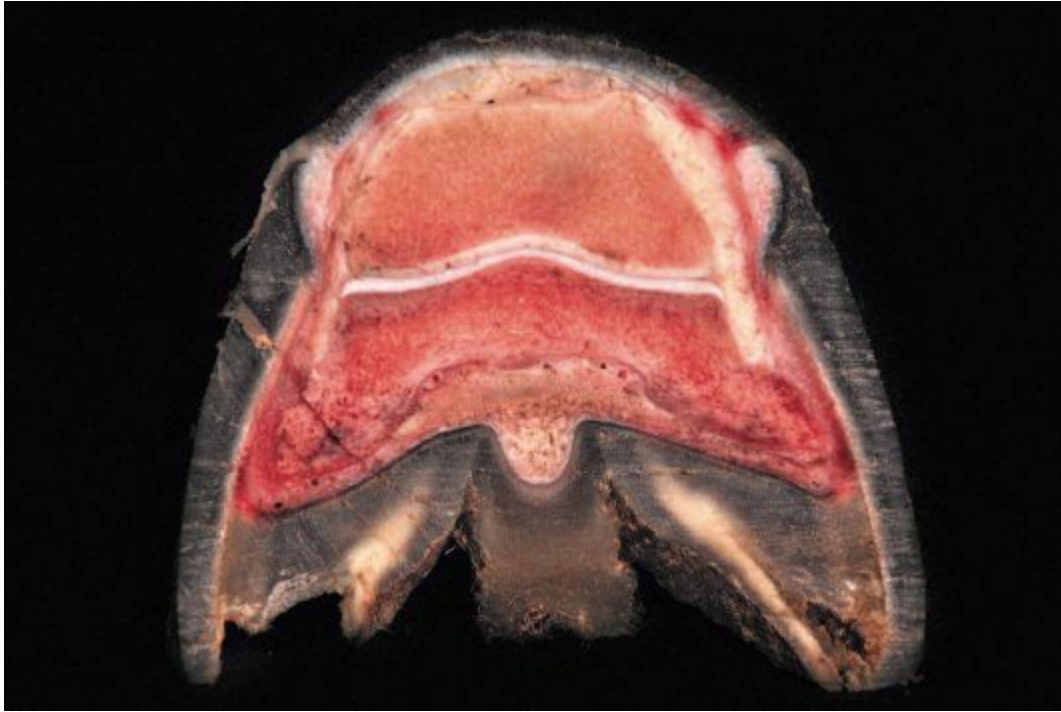


**Fig. 3.1. The concavity of the sole directly correlates with the concavity of the coffin bone and the thickness of the corium. This hoof has deep concavity and normal sole thickness despite some serious pathologies and chronic medio-lateral imbalance. (The cross section is made at the apex of the frog and is not strictly perpendicular to the sagittal line.) © N. Bykova**

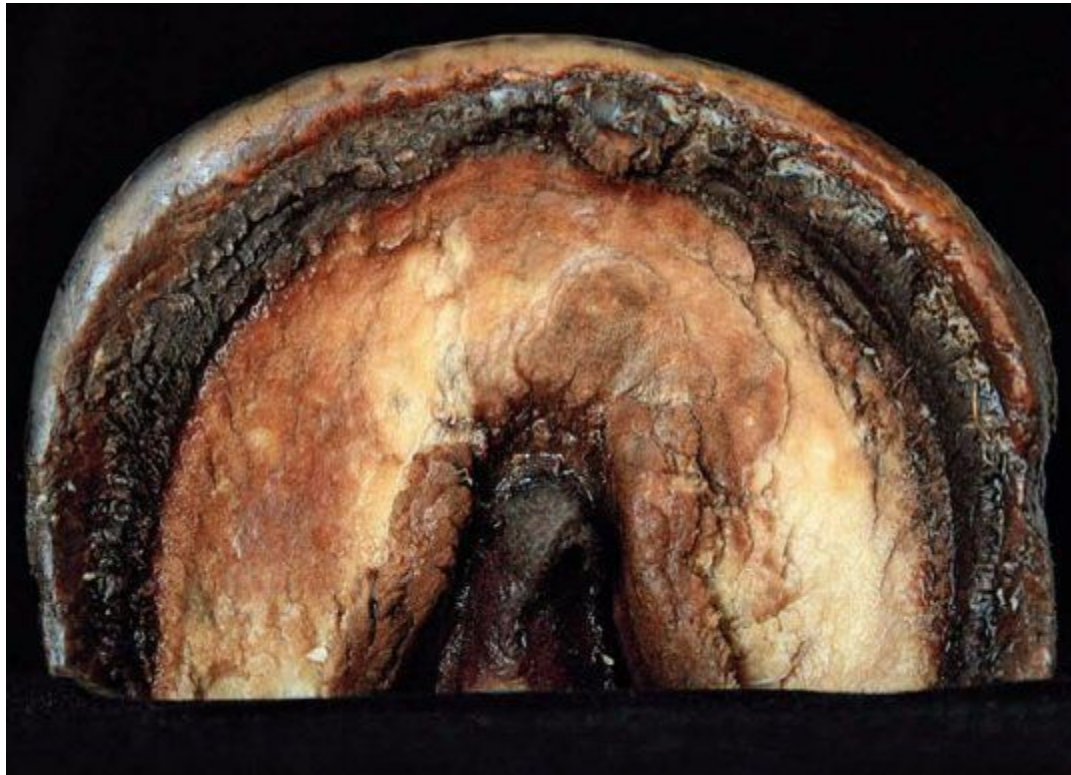


**Fig. 3.2. This hoof is flat, it has no deep concavity. The cross section is made at the apex of the frog (approx. 1.5 cm from the top of the frog in the heel direction). The sole on the left is cut off and thinned with the knife. This can't be done on a live horse. On the right the natural layering of the solar horn is left. Of course, it would be removed to the level of the true sole. © P. Laidely**





**Fig. 3.3. Deep concavity and thick sole of a contracted hoof with a medio-lateral imbalance. The bars are overgrown and their non-laminar horn covers the sole down to the frog apex. The “excessive” horn on the left is crumbled away. On the right, the bar, which grew over to the hoof wall, doesn’t allow the solar horn to crumble. © T. Batalina**



**Fig. 3.4. An average condition of solar horn. Only the hoof walls should be trimmed. © N. Bykova**



**Fig. 3.5. A section of an unhealthy hoof with good concavity at the frog apex (1 cm from the apex back to the heels). © N. Bykova**



**Fig. 3.6. A normal sole thickness with not really deep, but quite normal concavity. On the right the wall is rasped and rolled to the white line (due to a fungal infection and flares). © P. Laidely**





**Fig. 3.7 a–b. Hoof #I. This is how the solar horn is crumbled. © A. Nos**

Now you needn't trim the whole sole. Your aim is only to find the place where the solar horn and frog meet. If the frog doesn't interfere at this stage, don't touch it.

If the tip of the frog protrudes far and prevents you from seeing what you are doing, you may cut it a little, just to see well. You must not cut the frog more than a couple of centimeters from the apex back toward the heels.

**ATTENTION!** There are some pathologies where the horn between the sole and the frog has a crack which goes to the corium. The frog corium and solar corium may have ruptures and be necrotized. Such cracks may be black in color and look like black pits or rotten tissue around the frog. Sometimes they ooze a vulnerary secretion. Abscesses may “open” in such cracks. NEVER scrape these cracks. Don't put the hook in them, don't try to trim them with the knife. If you see a crack running deep into the sole and under the frog, stop where you are. You must not trim the sole and the frog of such a hoof. Only a professional may understand what to do. Such a condition needs to be treated. The main causes of it are — imbalance, contraction, pinching of the corium and blood circulation failure.

There are a few ways of defining the depth and thickness of the sole. This is the easiest one.

Let the junction of the sole and the frog guide you: as soon as you reach the place where the frog seems to grow into the sole (the horn is no longer crumbly, the two structures look like one), stop — this is the true depth of the solar concavity. In the junction area the frog and the sole have another color and texture, they look similar to each other. You must crumble away everything you can using only the hoof pick, nothing else.

Some people wonder what the “dirt line” is and if they are to trim until the horn is virgin-clean. No, they aren't. Basically, you should adhere to the principle that if you have any doubts it is better to under trim than over trim. Look at the photo. The clean horn is the guide that you should trim the sole no more. If the horn is still crumbly, the risk of over cutting the frog or the sole is minimal.

After you find the true depth of the solar concavity, you'll understand if it is



flat or concave. This is really important, as the sole's shape repeats the shape of the coffin bone and the solar corium.



**Fig. 3.8. Pododermatitis. When the frog tissues are removed, we reveal an inflamed corium that may be infected. © E. Kazmina**



**Fig. 3.9. Brumby hoof. Note the crack right under the frog apex. Of course, you must NOT remove the horn around the apex. © P. Laidely**

Next.

Put a thin ruler vertically at the frog apex. If the ruler doesn't fit, take a sharpened pencil and put it at the sole in front of the apex. Put the ruler across the walls. Mark the place where ruler and pencil intersect.

**If you see that the space (the height or the depth of the concavity) is 0 to 1 cm, you are STRICTLY FORBIDDEN to trim the walls and the sole, as the sole is either flat or too thin, and the coffin bone is placed too low in the hoof capsule (if the height of the concavity is 1.0 to 1.7 cm there is no need to trim).**

The concavity of the hind hooves is usually deeper than that of the front ones. This is normal.

The absence of concavity usually means that there are some pathological changes of the coffin bone as a result of sinking or it shows that the sole was terribly thinned during the previous trimming.

If you would start to trim the toe area, you could trim into the corium. Keep in mind that the sole may be flat even if the hoof has very high walls. In this case it means that the coffin bone has sunk down into the capsule.

**It is FORBIDDEN to decrease the overall hoof height if there is no concavity.**

If after you've discovered the true sole the hoof walls are rising above it, you'll trim them easily by rasping them down (see below).

If there is a need to trim the toe callus, use only a hoof pick and never a knife.

A hoof pick is the only safe tool you can use to clean the layers of the old horn off the sole (toe callus included).

If the depth of the concavity is 2.5 to 3 cm (which occurs if the hoof hasn't

been trimmed for a long time) and the outer perimeter of the sole is even with the walls and you couldn't crumble it away, you'll have to trim the hoof after all, but how? Follow this strategy:

If the walls of the overgrown hoof are at the level of the non-crumbling sole perimeter and the hoof capsule is too high, if the solar concavity is 2 to 3 cm or more deep, use this scheme:

- During the first trim of such a hoof you should crumble away with the hoof pick as much of the dead solar horn as you can, including the toe callus area. After that you should trim the walls to the new solar level and allow the horse to walk (you may have to lead him) on asphalt or another abrasive footing (stone screening dust, for example) for 10 minutes a day. In a word, you should trim the hoof considering THIS solar level, despite the hoof capsule's height and the great depth of the concavity.
- Soak the hooves in the water for 10 min. daily. Examine the hooves once in a couple of days, or even daily to see if the sole started to crumble.
- It is likely that you'll be able to crumble away some amount of horn and rasp the walls again to the level of the sole. There is nothing bad in the large amounts of the old horn on the sole.

You must learn to tell the solar horn from the bar horn which sometimes covers the sole — the so-called false-sole (we will speak of it later).

**Don't move to the next step of the trim if you have any doubts about the concavity depth and the sole thickness.**

If you are not sure you understood anything of the above, stop! Get a radiograph.





**Fig. 3.10. This is what the junction of the frog and the sole at the apex may look like after it was scraped with the hoof pick. © T. Batalina**



**Fig. 3.11. If you see such cracks on the dry solar horn and a black line around the frog which your hoof pick cannot remove — you mustn't trim anything! © E. Saharova**

## **RADIOGRAPHS**

In a lateral view of a healthy hoof the hairline should be at the level of the extensor process of the coffin bone or at 1–2 mm higher (to see the hairline on the radiograph the coronet should be marked). If the extensor process is much lower than the coronary band, it means that the coffin bone has sunk into the hoof capsule. In this state the hoof would be flat or even bulging. Such a hoof should not be trimmed from the sole side. Laminitis with founder are the main “authors” of the coffin bone sinking.

**ATTENTION:** You can evaluate the thickness of the sole only if the hoof walls are level with the sole. Put a marker at the frog-sole junction for the radiograph.

The space between the dorsal wall and the coffin bone should be no more than 14–17 mm (it can be seen on a radiograph). If it is enlarged, one can suspect laminitis which could be followed by the rotation or the distal descent of the coffin bone.

Although, one can learn to evaluate the distal descent of the coffin bone rather well by sight, without a radiograph.

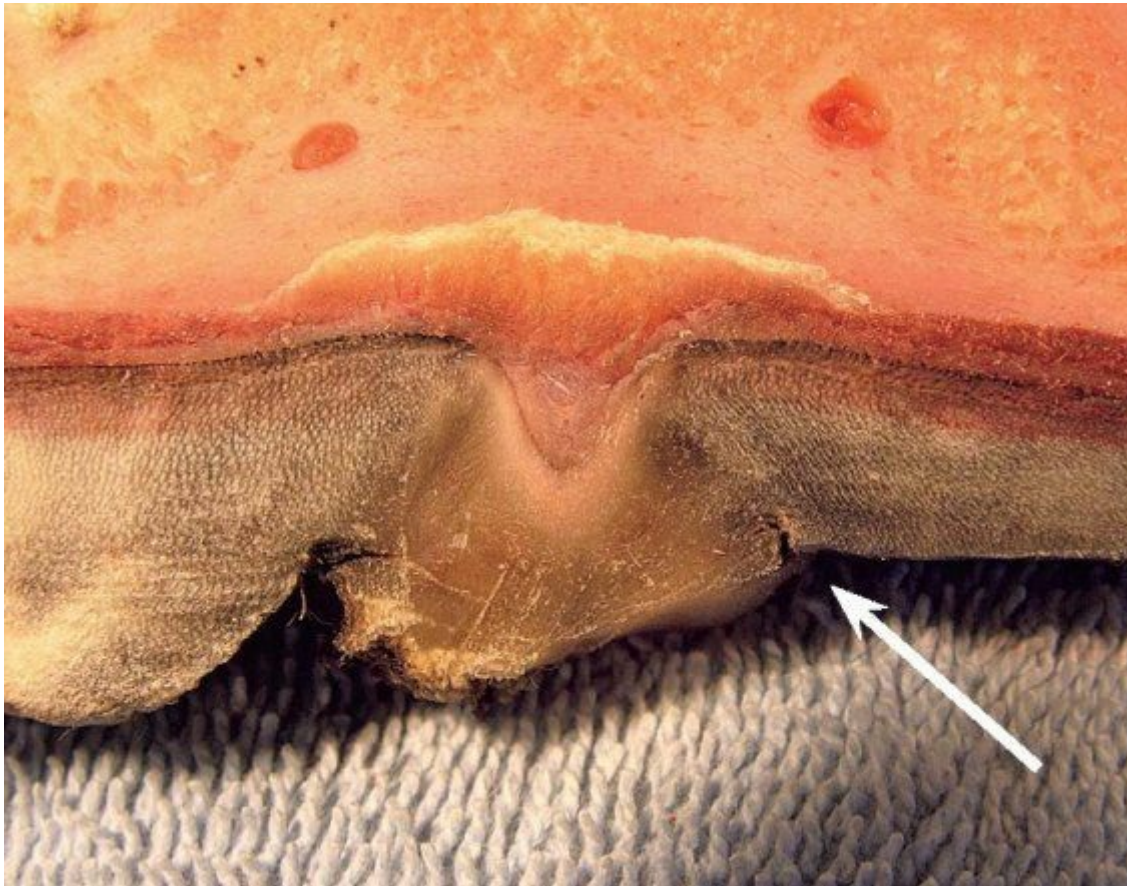
If you see that the hoof capsule is much higher than normal (higher than 10 cm) and it seems to you that the hoof should be trimmed (the walls should be rasped down), but the hoof has shallow collateral grooves (as in the case of a sinker. In the case of founder with rotation they could be very deep) and shallow concavity (less than 0.8–1.0 cm) you can be sure that you are dealing with a case of the distal descent of the coffin bone and should make a radiograph immediately and take steps to correct the situation. You must not trim the sole or lower the hoof height in such a hoof. Such a hoof needs a long and thorough rehab.

The sole of the flat hoof should not be trimmed even if the hoof capsule is really high.



**Fig. 3.12 a–b. You MUST NOT cut the horn at the frog apex and the sole this way. Here you can see the horn of the sole and the frog at their junction. © A. Nekrasova, E. Kazmina**





**Fig. 3.13. A section at the frog apex. It is obvious that one should not cut the apex to the level of the sole. It must have a shape which repeats the frog corium shape. One also SHOULD NOT cut the horn around the frog (the dirt line). © P. Laidely**



**Fig. 3.14. This hoof should not be trimmed. The concavity is only 7 to 8 mm deep, the sole is flat, the walls are at the level of the sole. © T. Batalina**

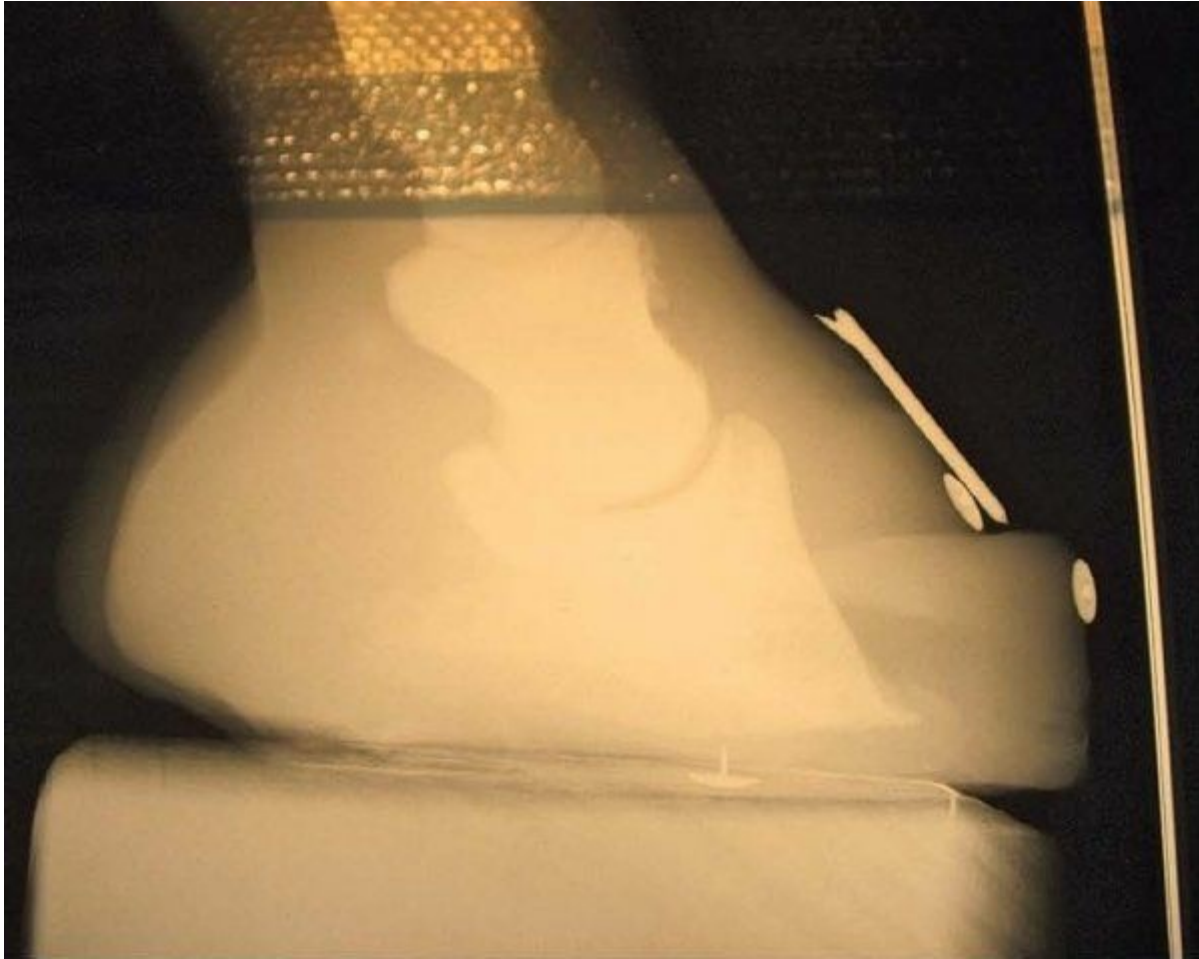




**Fig. 3.15. The overall height of the hoof can be lowered as much as the true sole allows. © T. Batalina**



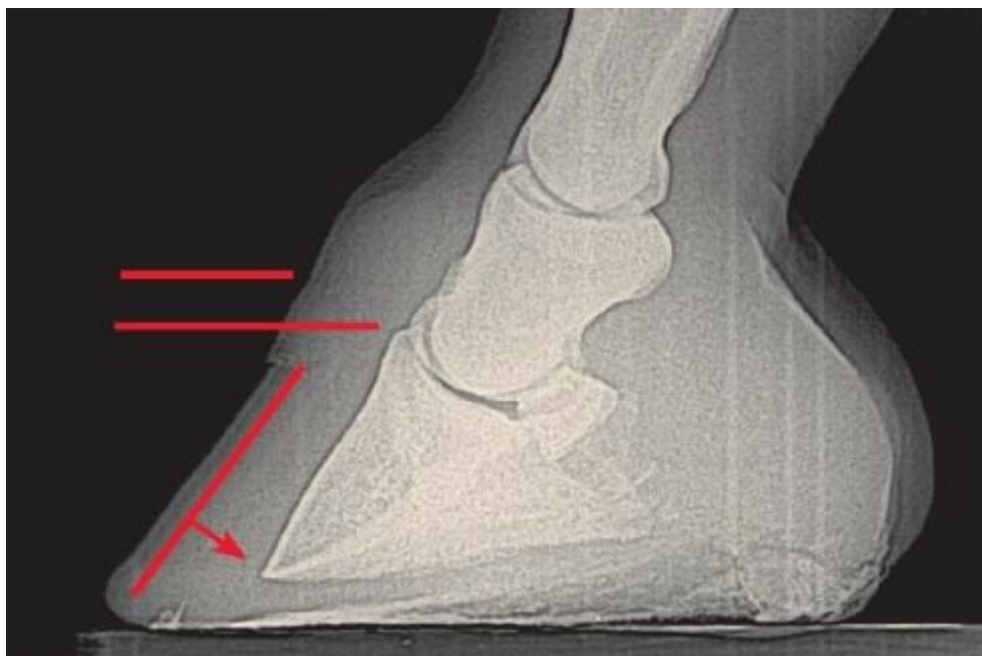
**Fig. 3.16. This hoof can be trimmed, the walls should be rasped down. © T. Batalina**



**Fig. 3.17. A hoof with founder during the rehabilitation trimming. © P. Laidely**



**Fig. 3.18. This hoof had laminitis. You can see not only the absence of solar concavity, but also rings on the hoof walls and bruises. A radiograph before trimming is obligatory. © E. Levina**



**Fig. 3.19 a–b. Top photo: healthy hoof, a good sole, the coffin bone “sits” pretty high in the hoof capsule. Bottom photo: descent and rotation of the coffin bone. © Nevzorov Haute École**





**Fig. 3.20 a. Hoof # I. The balance is distorted, correction is necessary. © A. Nos**



**Fig. 3.20 b. Let's look at the same hoof from the solar side. The bars and the walls are much higher than the sole level indeed. © A. Nos**



**Fig. 3.20 c. The wall is higher than the sole by 1 cm. The sole should not be trimmed; the wall needs to be rasped down to the level of the sole. © A. Nos**



**Fig. 3.21. This is the cadaver hoof of a horse which has very deep concavity. The heels are overgrown, a number of pathologies are present. To the right the bar and the wall were lowered to the sole and frog level. The sole and the frog are bared (the outer layer which was 1–3 mm thick is removed) only to demonstrate the junction of the solar and frog horn. © N. Bykova**





**Fig. 3.22. The hoof is mutilated by a severe case of laminitis and chronic founder. The arrow shows the laminar wedge. Such a hoof should only be trimmed with guidance from a radiograph. It is impossible to simply lower its height following the common trimming rules. © P. Laidely**



**Fig. 3.23. An almost flat hoof. Note that the frog apex is not sunken into the concavity at all. © E. Sakharova**





**Fig. 3.24. Good concavity where the frog apex is at its bottom, it should not be trimmed. © A. Oranskaya**



**Fig. 3.25 a–b. Deep concavity trimmed into a contracted cadaver hoof. © T. Batalina**



**Fig. 3.26. Badly overgrown walls of a hoof in need of a trim. © N. Bykova**



**Fig. 3.27. A badly overgrown hoof, but, unlike the hoof on the Fig. 3.26, the walls and the sole are at the same level. © T. Batalina**





**Fig. 3.28. A hoof with distal descent of the coffin bone. It is contraindicated and inappropriate to lower the height of the hoof capsule during the trim. © P. Laidely**





**Fig. 3.29. Good concavity of a coffin bone. © A. Andreeva**



**Fig. 3.30.** Many people have a very vague idea of where the coffin bone really is. This cadaver hoof has a really long toe (don't let it guide you), but the coffin bone is where it should be. © T. Batalina



**Fig. 3.31.** The sole of this cadaver hoof is scraped with the hoof pick. After that the holes were made to measure its real thickness. It equals only 6 mm. Imagine what it would be if you trimmed such a (typical) sole with a knife. © T. Batalina



**Fig. 3.32. A flat hoof in need of sole recovery. © A. Grigoryeva**





**Fig. 3.33. Deep concavity of the sole. © T. Batalina**





**Fig. 3.34. One should NOT trim a sole this way. Do not trim the sole with the knife: you don't need to trim the horn around the frog "to the bottom"! The collateral grooves here have no more depth, needless to mention the thinning of the sole. © E. Kuzina**



**Fig. 3.35.** A once free roaming Bashkirian horse hoof that has been over trimmed. Unlike the hoof on the Fig. 3.34, here the “dirt line” around the frog is not scraped “to the bottom” so the collateral grooves have acceptable depth. © A. Nekrasova





**Fig. 3.36 a–b. A contracted and high-heeled hoof can be hard to rehab. The sole is untouched, the bars could be lowered as much as the sole allows, i.e. only by a couple of millimeters. The frog needs treatment. © T. Kallassi**



**Fig. 3.37. A correct approach towards the trim which is oriented to the sole level. © O. Shadrina**





**Fig. 3.38. A correct trim (unfinished). The sole is scraped with the hoof pick. © O. Andreeva**



**Fig. 3.39 a–b. A criminal thinning of the sole. It's amazing how the hoof managed to keep a good frog and a tight white line with such a trim. Bruises and blackness are the signs of horn thinning, hemorrhages and corium necrosis. © E. Kazmina**





**Fig. 3.40 a–b. Note how the horn around the frog apex is trimmed with the knife. How clean the white line and the solar horn are (due to the surgical tissue removal). NEVER trim this way. In the lower photo you can see the hemorrhage at the apex area. The prolapse of the digital cushion is highly possible. © E. Kazmina**



**Fig. 3.41 a–b. A problem hoof with an imbalance. The collateral grooves show that the heels are too high, but the hoof still looks flat. The frog is diseased. Note the deep central sulcus. A radiograph before the trim is recommended. © O. Akutina**





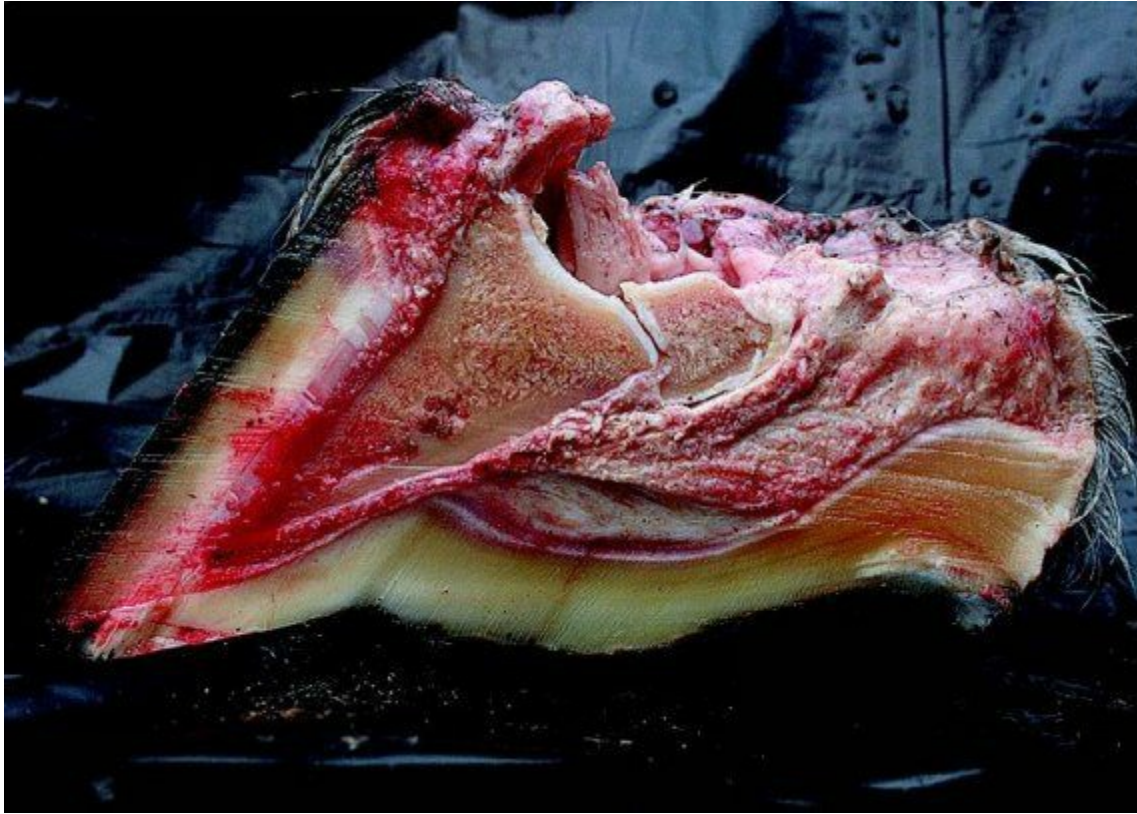
**Fig. 3.42.** On this double-page we've placed sagittal sections of different hooves for the purpose of letting you compare the specimens with pathologies to the normal ones. This is a fairly good hoof with a very long toe. © A. Nekrasova



**Fig. 3.43. The frog and the sole at the toe area are artificially thinned by trimming (the horn should be thicker by 3-5 mm), also this hoof has a slight flare on the dorsal wall © O. Akhtamyanova**



**Fig. 3.44.** Here is a well seated coffin bone with good concavity of the sole; the edge of the toe could be rolled. © N. Bykova



**Fig. 3.45. A good hoof from the looks of it. The concavity is not bad, the coffin bone is seated well and the sole is remarkably thick. © E. Sakharova**





**Fig. 3.46.** This hoof is not bad, except the sole in the toe area is cut too much; it should be 3-5 mm thicker. © N. Bykova



**Fig. 3.47. A good seat of the coffin bone, the dorsal wall is too long. The coffin bone has a bulge on the dorsal surface which is repeated by the horn of the dorsal wall. © S. Korban**



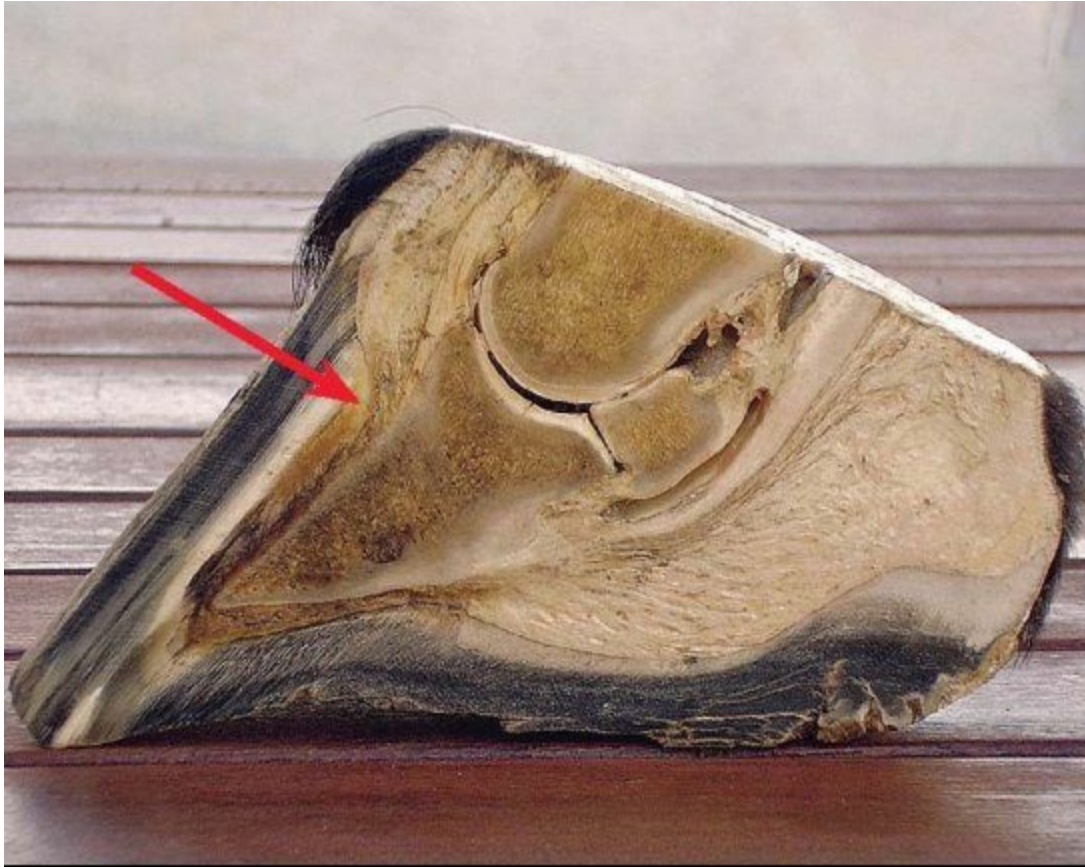
**Fig. 3.48. A good seat of the coffin bone, but the sole and the frog are terribly thinned. This is an American farrier's specimen which was made by the freeze-drying method. © Nevzorov Haute École**





**Fig. 3.49. A good seat of the coffin bone and perfect sole concavity. The crack at the frog apex is natural for the dry season. This is a brumby hoof which had never been trimmed. © P. Laidely**

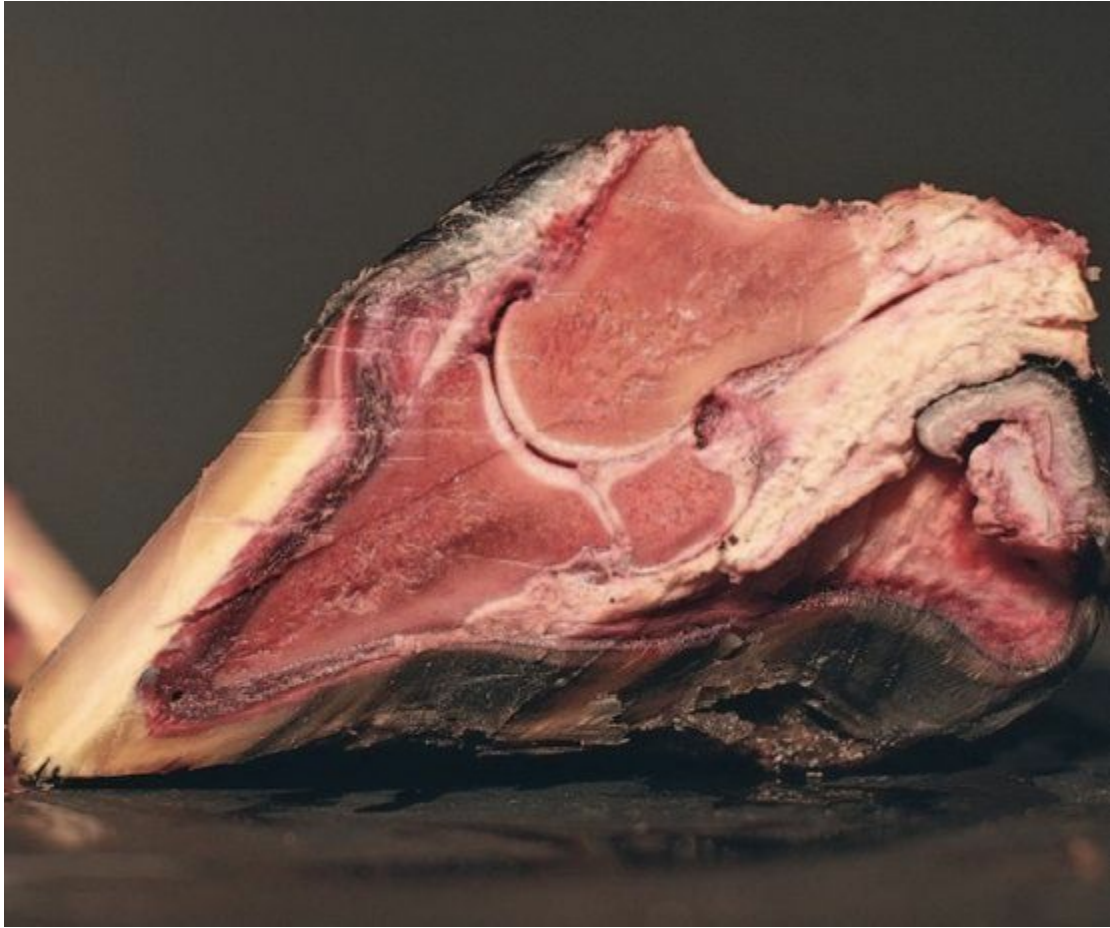




**Fig. 3.50. Freeze-dried brumby hoof. The dorsal surface of the coffin bone is not parallel to the hoof wall due to the specimen desiccation. © P. Laidely**



**Fig. 3.51. A chronic founder (in this case it had been there at least for two years) — note the descent and rotation of the coffin bone. © S. Cooper**



**Fig. 3.52. An example of “fresh” laminitis, descent and rotation of the coffin bone, the sole is thinned by the trim. © L. Nevzorova**





**Fig. 3.53. An example of chronic founder-laminitis, deformation of the coffin bone, laminar wedge. © A. Nos**









**Fig. 3.54 a–l. All of these hooves, as different as they are, perform their duties perfectly. None of these soles need to be trimmed. © M. Sotnikova,**

**S. Gorovaya, E. Sakharova, A. Oranskaya, T. Batalina, K. Kotsinyan, P. Laidely, F. Ivar**





**Fig. 3.55 a–b. A criminally invasive trim, the tissues of the wall and sole are inappropriately cut off of this fairly good hoof (the frog is infested with fungi). © E. Sidorenko**





**Fig. 3.56. Try not to rasp the outer walls in any case. It is not only useless, but very harmful as well. © M. Patti**



**Fig. 3.57. An invasive trim. Never take this approach. © O. Grishko**



**Fig. 3.58. An invasive trim. Note that the tissues of the sole in the heel area are cut almost to the corium. You can see the knife wounds and hemorrhages. © O. Grishko**





**Fig. 3.59.** There is no explanation for such a removal of the wall. © K. Toropova





**Fig. 3.60. Contraction, imbalance and an over trimmed sole. © P. Polyakov**



**Fig. 3.61. An invasive trim, the hoof capsule is lowered too much. © Nevzorov Haute École**



**Fig. 3.62. Cutting of the sole and the heels can lead to contraction. © O. Grishko**





**Fig. 3.63. An invasive trim, with unreasonable cutting of the tissues. © A. Grigoryeva**





**Fig. 3.64. The consequences of an invasive trim which harmed the tissues of the sole and the walls. © O. Grishko**



**Fig. 3.65. A thinning of the sole. The cutting of everything possible cannot help but have ill effect on the horse's health. © Nevzorov Haute École**

# CHAPTER 4. STEP 2: DEFINING THE HEIGHT OF THE HEEL AREA

**Aim — to define how much you can lower the heels.**

At first it is very hard to decide to trim the heels, especially if it seems to you that the hooves look healthy.

The problem is the look of the healthy hoof shape itself is not familiar to you yet.

To overcome your fear, you should make sure that there is a need or an allowance to trim anything, and only after that you may act carefully but steadily.

There are a few guidelines which can help you to understand how much you should cut. I assure you, soon the look of the properly trimmed hoof will become familiar to you and you'll be able to define by sight how much horn you should remove.

When you get more experience, you'll understand that the sole is the best guide. Meanwhile, I'll provide you with all the suitable ways of defining the correct heel height to make things easier for you.

## **Heel height — the first guide.**

Feel the lateral cartilages under the heel walls and measure approx. 3.5–4.5 cm down, or measure 3–3.5 cm from the hairline in the heel area — generally this would be a proper heel height.

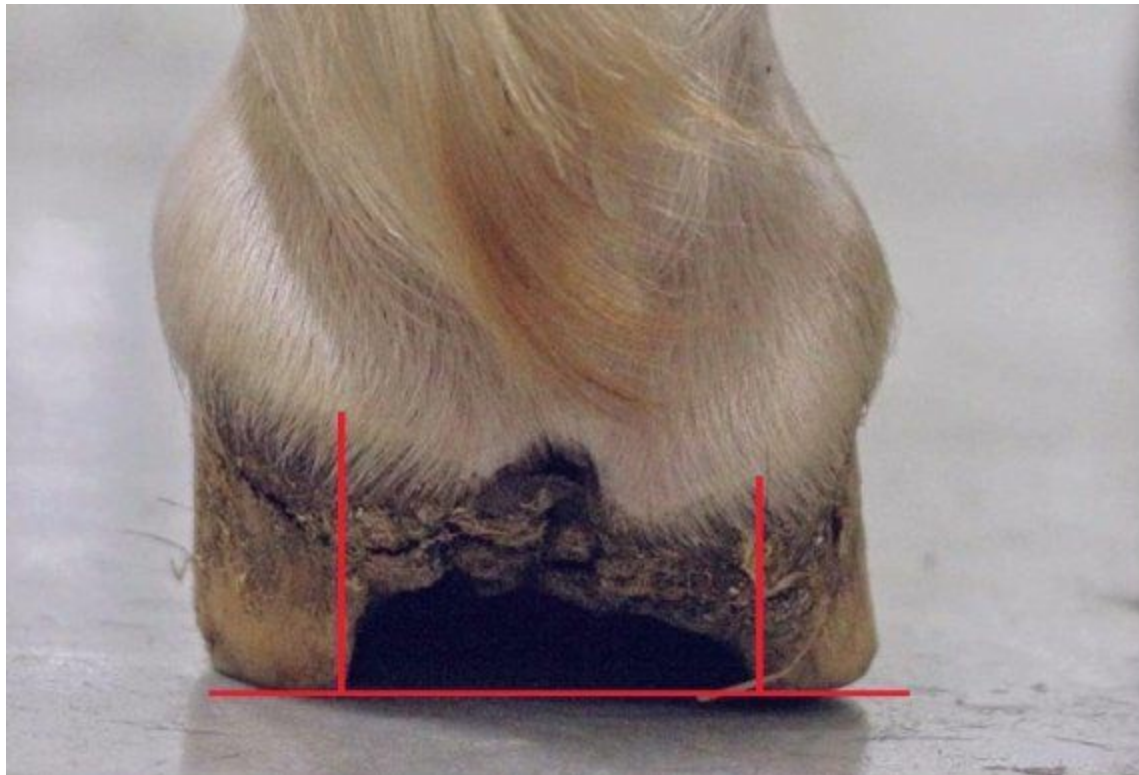
You may press the ruler to the hoof as shown in the picture and mark the desired height. This guide gives you 60 percent of the proper evaluation (you may use this as ONE of the ways to measure). Not all the hooves may have precisely this heel height due to the individual traits and/or pathologies. Also,

such a heel height is not always informative (under run heels may be 3 cm high, but it doesn't mean they should not be corrected).





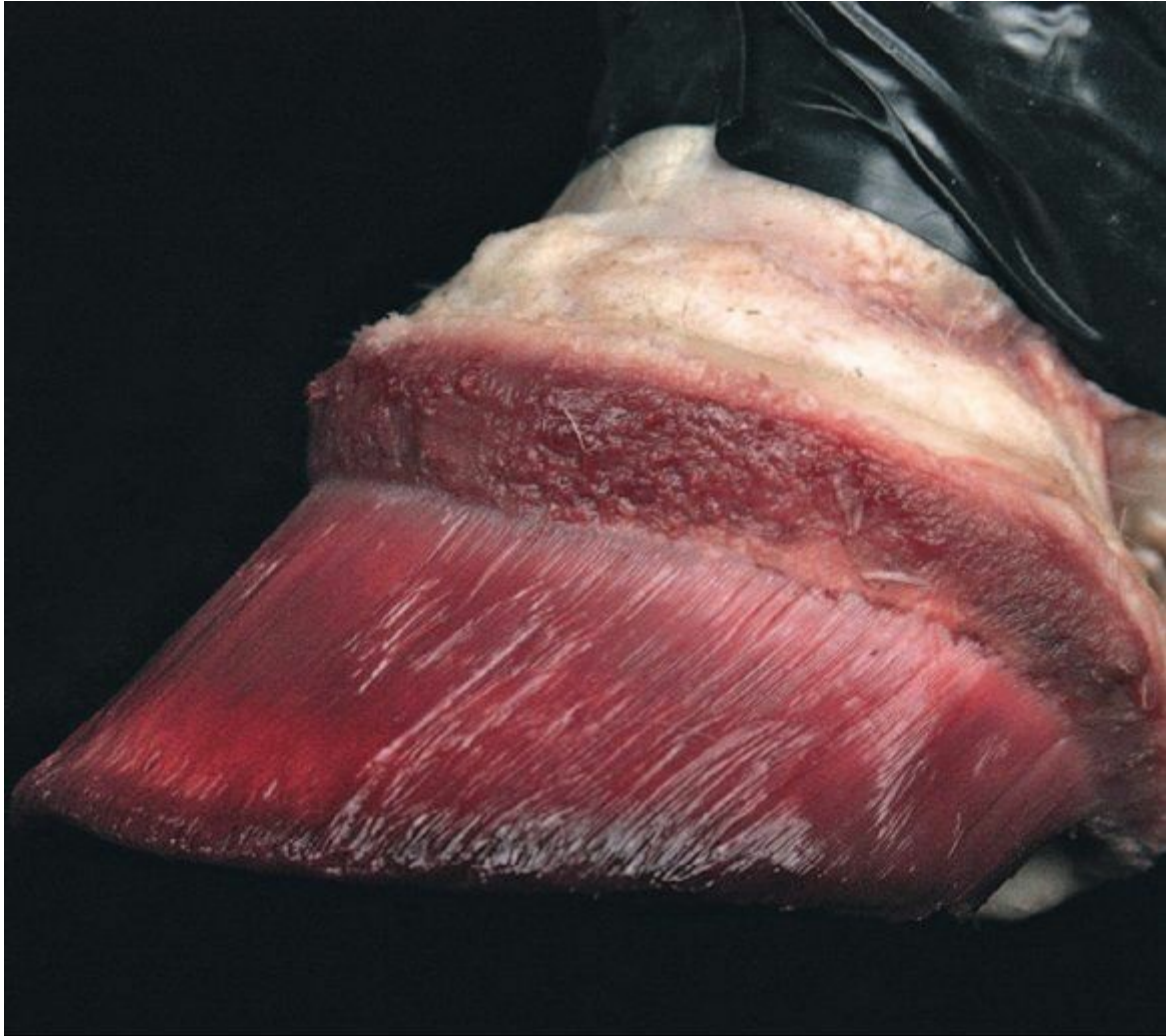
**Fig. 4.1 a. The heel height and length are not the same thing. To measure the height, put the ruler at 90 degrees to the floor. © N. Bykova**



**Fig. 4.1 b. A bad case of medio-lateral imbalance and contraction. The heels are both too high and of different heights. © A. Oranskaya**

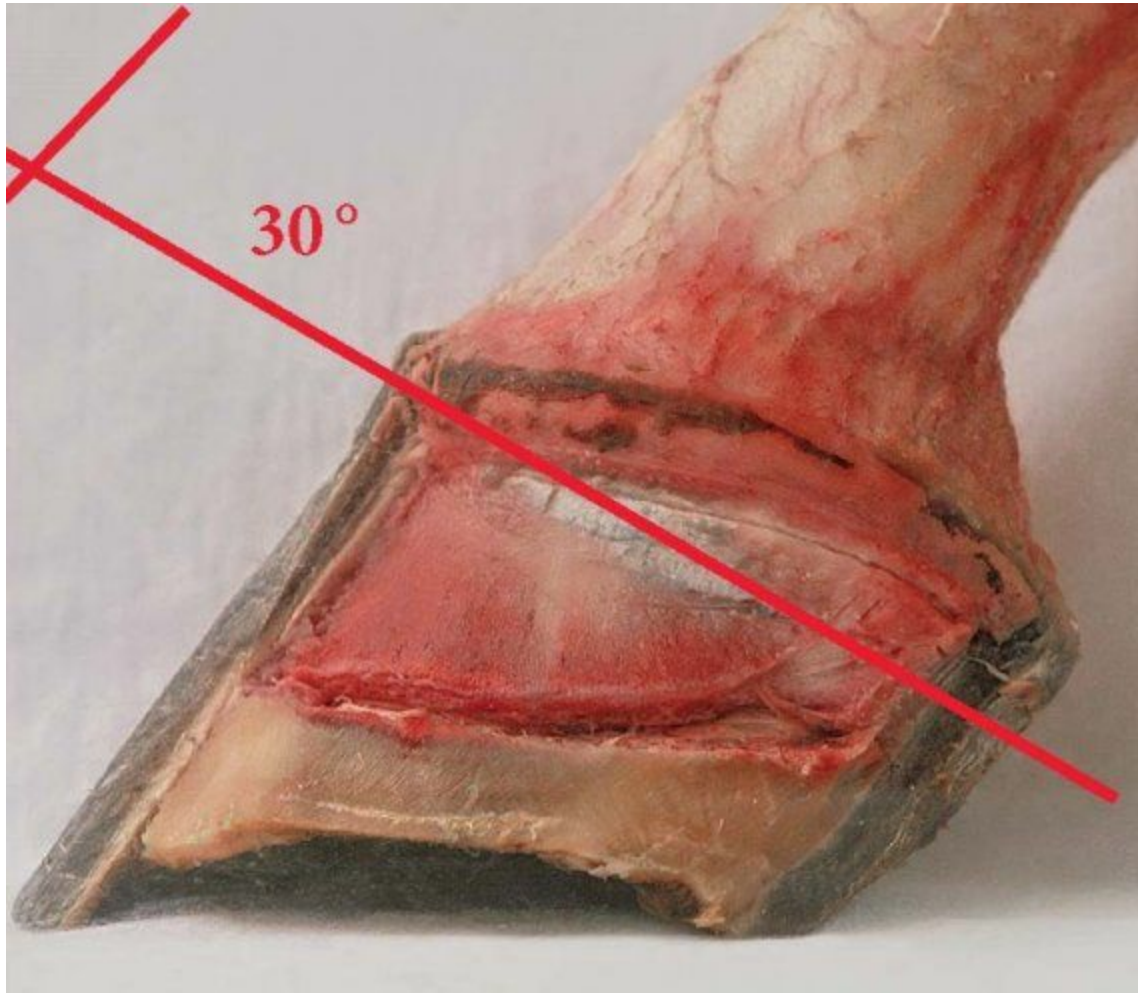
**The second guide is the angle of the coronary band or the hairline.**

The thing is that the angle of the coronary band in the healthy hooves in which the coffin bone is seated properly is usually about 30 degrees. To speak frankly, this guide is not very reliable and one should not rely on it solely in any case. It gives a 40 percent possibly correct evaluation, as the coronet may be bulging upwards due to different pathologies and even without them. Not all healthy hooves have a coronet with a 30 degree angle and not all the hooves with such an angle are healthy ones. Of course, the hairline angle may be 30 degrees with the different heel height. That is why this method is only good along with others.



**Fig. 4.2. Hoof angles, including the angle of the coronet, may differ. © A. Nos**





**Fig. 4.3. The coronary angle of this young horse's hoof is not 30 degrees, but the coffin bone is positioned properly. © N. Bykova**

**The third guide is the level of the frog in its widest (heel) part.**

In the healthy hoof the frog must touch the ground with its heel area and bear some load. Therefore, the height of the heels should match the height of the frog. Considering that the hoof may be contracted and the frog may be dystrophic and driven deeply between the contracted heels, the new trimmers should be extremely careful and never use only this guide which gives only 60 percent of the proper evaluation. Theoretically one must lower the heels to the frog level, but very carefully and gradually. One can trust this guide only if the sole allows to do it. **The frog level is a good guide only if the frog is healthy.**



**Fig. 4.4. In this hoof the frog level is not a guide at all. It is obvious that the frog is atrophied and is not at the level of the seat of corn. © M. Patti**





**Fig. 4.5. This hoof is not bad, the heels are lowered to the proper level, but they are different: the right heel is higher than the left one. © O. Shadrina**



**The fourth guide is the level of the sole in the seat of corn.**

In the heel area the height of the bar and wall horn should be at the level with the normal, non-crumbling or flaking solar horn. The bar and the wall may be 1–2 mm higher than the sole in the seat of corn area (the wall-bar triangle). This is one of the most accurate ways of defining the heel height, with 99 percent accuracy (not including some pathologies).



**Fig. 4.6. Despite the bars grown around in front of the frog apex, it is easy to define the level of the sole in the seat of corn of this hoof. © V. Terenina**



**Fig. 4.7. One side of this hoof is trimmed with the knife to the level of the seat of corn and the frog. The sole on the other side is untouched. The bar rests upon the sole and covers its corner. One **SHOULD NOT** trim the sole, the bar and the hoof wall should be lowered instead, while the sole should be left as it is. © N. Bykova**

**The fifth guide is the depth of the collateral grooves.**

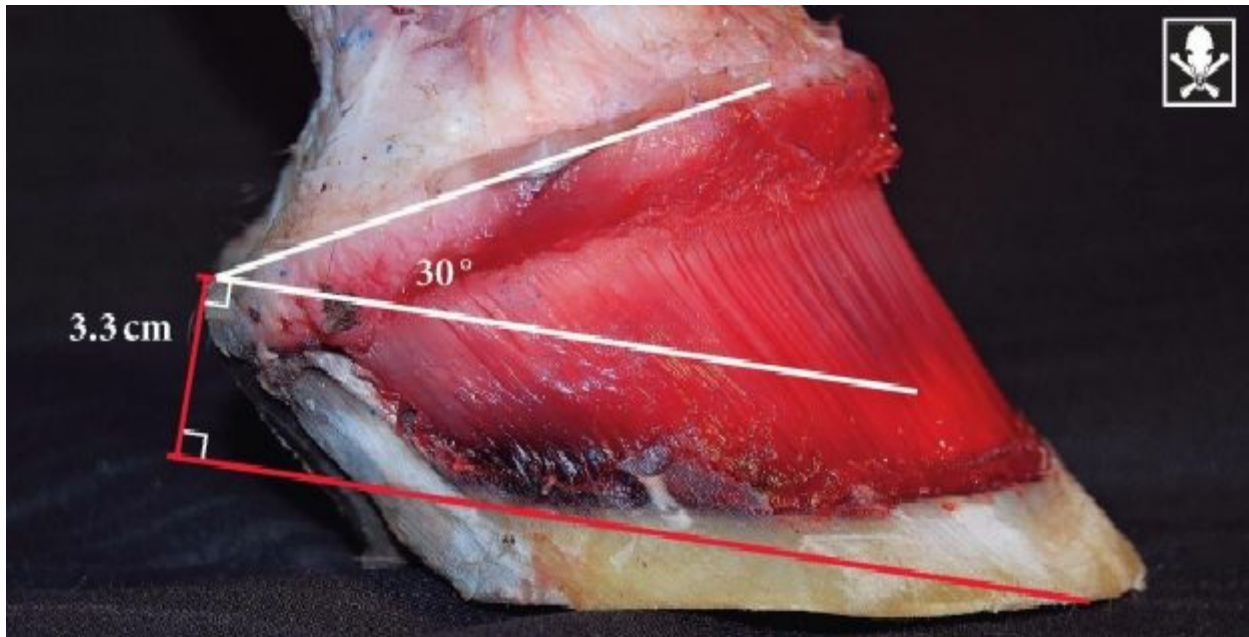
Collateral grooves should be quite deep — no less than 1.6 cm. There is a consistent pattern which shows that the depth of the collateral grooves is correlated with the sole thickness. If the grooves are shallow, the sole is very thin (for a number of reasons: consequences of laminitis, distal descent of the coffin bone, absence of movement, etc.), so such a sole should not be trimmed in any case; or the hoof is considerably healthy but the heel is cut too low (the sole thinned artificially). In a word, if the collateral grooves are shallow, there are some problems with the sole and it should be encouraged to grow. If the grooves are deep, it doesn't necessarily mean that the sole is healthy, so the possibility of the proper evaluation by this guide is 90 percent.





**Fig. 4.8 a–b. Measuring of the depth of the collateral grooves. Position the ruler and put something across the heels so you would make no mistake defining the depth of the collateral grooves. In the bottom picture the measurement is taken incorrectly. It is easy to make a mistake. © T.**

**Batalina**



**Fig. 4.9. I advise you to put this picture on the wall in your stable. You must understand that if you are thoughtlessly “adapting” the coronary angle and heel height to some theoretical numbers, with no consideration of the more important parameters such as the sole level and the depth of the collateral grooves, you may make your horse a crippled or simply kill him.**  
© A. Nekrasova



**Fig. 4.10. You can clearly see the black fissures, crevices and pits on the sole of this hoof which should not be touched. This hoof doesn't need more trimming! © S. Kharyushina**





**Fig. 4.11. The walls of this hoof had flared on their own. It is easy to evaluate the heel height, one should just scrape the sole in the seat of corn with the hoof pick. There is no need to touch the sole as it is. © S. Gorovaya**

To be completely sure, use all the possible guides. Mark the desired height right on the hoof with a felt-tip pen.

If you've found some big dissimilarity of the parameters, it means that it would be wise to stop and think about what could be wrong with the hoof. Think once again before you begin to cut. Read some books on diseases and balance. If you are decided, take a hoof pick. It's better not to use the hook of the knife.

I remind you that our aim here is not the trim, but the defining of the heel height. Now, to decide if the desired lowering is possible, look at the hoof from the sole side.

You should see the corner of the sole surrounded with the white line of the heel wall and bar.

Remember that you must not lower the heels by more than 1 cm in one trim, and it's better if you rasp down only 3–5 mm.

Look closely for the fissures at the heel area and along the bars, see if the horn is crumbling like chalk, study the structure of your horse's bars.

If there are fissures and crumbling, you may continue scraping, you are not risking doing any harm yet.

If the horn is more or less clean and elastic and hardly crumbles — stop. This is the depth which will allow you to define the heel height. If the overgrown bars are hanging over the sole and don't let you scrape the corner area, you may cut them a little (only so they would not prevent you from scraping) to free the seat of corn (the area formed by the hoof wall and the bar).



**Fig. 4.12. This sole in the seat of corn peels easily with the hoof pick but doesn't crumble because the horn is too dry. © T. Batalina**



**Fig. 4.13. Learn how to tell the solar horn from the horn of the bars and you'll always trim correctly. The uncovered seat of corn was hidden by the bar, it is weak and doesn't crumble. During the first trim it should be left as it is. You would only shorten the heels with the rasp a bit and make them more even. © N. Bykova**



**Do not cut the solar horn while you do it, even if it seems “dead”, old and flabby to you!**

You may remove only old, flaring horn of the bars — material which protrudes OVER the sole level or even rests upon it after being folded under the hoof, almost parallel to the sole.

The sole should not be less than 1 cm thick.

Sometimes the bar not only rests upon the sole but “grows” into it and the walls so that the solar horn is completely covered.

In this case you may need to remove the overgrown horn of the bar to get access to the sole. But before you touch the bars study the pictures provided in this book.

It is not always necessary to remove the bars lying on the sole. Often they are there for a purpose. In some cases they support the weakened heel area of the sole. Of course, the ability to see if the bars should be radically corrected requires great experience. So, to do no harm never cut the bars thoughtlessly! If after you’ve lowered the hoof walls the bars do not protrude over the common level of the hoof wall and are a bit below it, it is very likely that you shouldn’t touch them at all.

**RULE:** if the collateral grooves are less than 1.5 cm deep, it is inappropriate to lower the heels.

To remove the overgrown bars one must use a knife. In some cases the overgrown horn of the bars falls away by itself after a few pokes with a hoof pick, but usually it is necessary to cut it or even clip them with nippers. Bars are the part of the outer hoof wall so bar horn is much stronger than the solar horn, it is easier and safer for the sole to reduce the height of the bars with nippers.

**ATTENTION:** bars may be traumatized, may have bad fractures and cracks.

Cross cracks and fractures of the bars are NOT the guides for their trimming. These fractures may run very deep, to the corium itself, and, of course, the untrained eye may take them for simple flaws or weak spots.

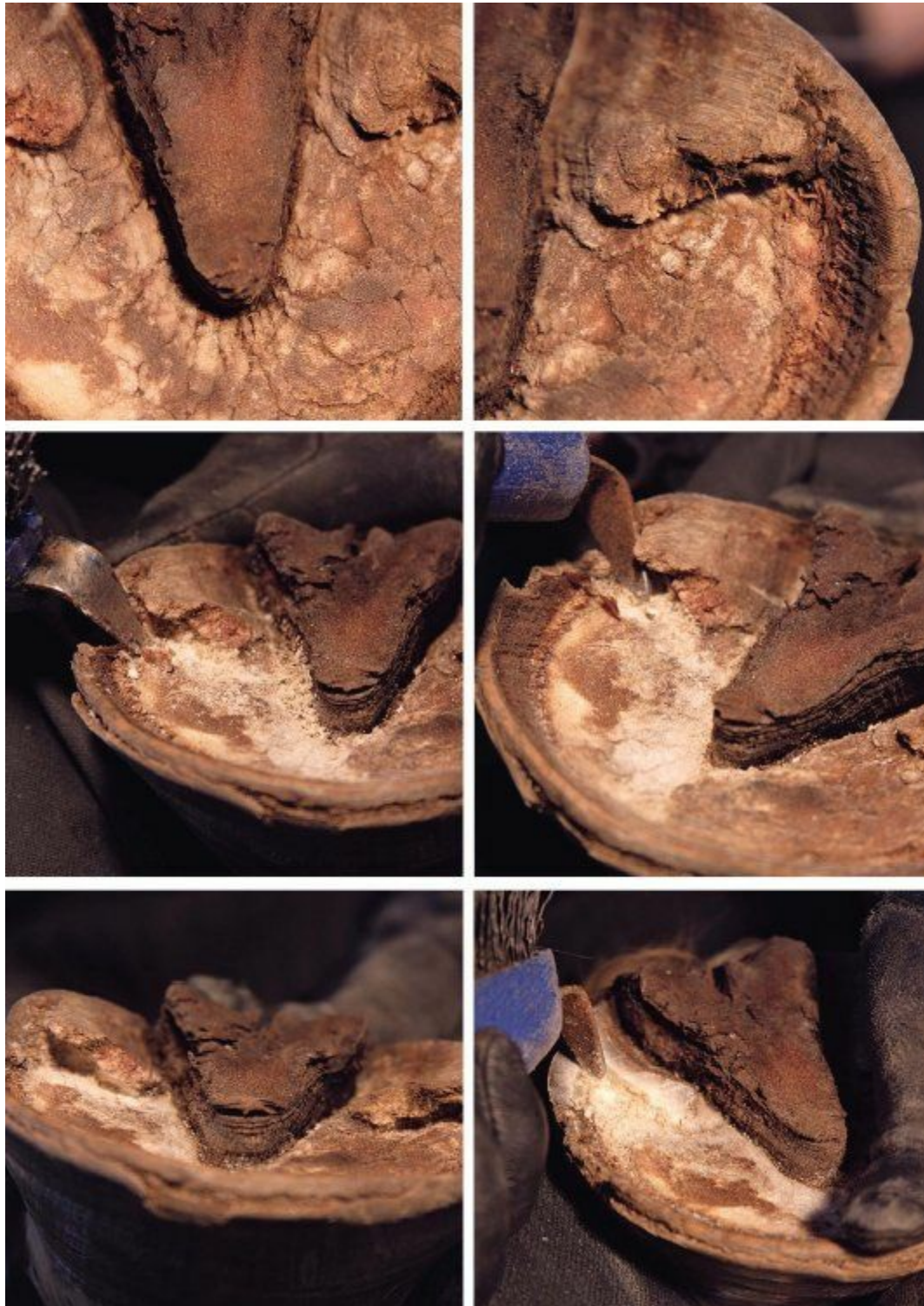


**Fig. 4.14 a–b. The horn in the heel area is easily crumbled with the hoof pick. In this case the healthy sole was covered by the false sole which, in truth, didn't interfere with the hoof function, but, on the contrary, helped it. Anyway, one can remove this layer of the sole with the HOOF PICK, although in this case it wasn't really suitable because the walls are at the level with the sole and the hoof itself does NOT need a trim. Note the quality of the horn which can be seen in the picture below. © M. Sotnikova**



**Fig. 4.15. After scraping the horn in the seat of corn it is obvious that the heels and the walls could be lowered only by 1–2 mm. © M. Sotnikova**

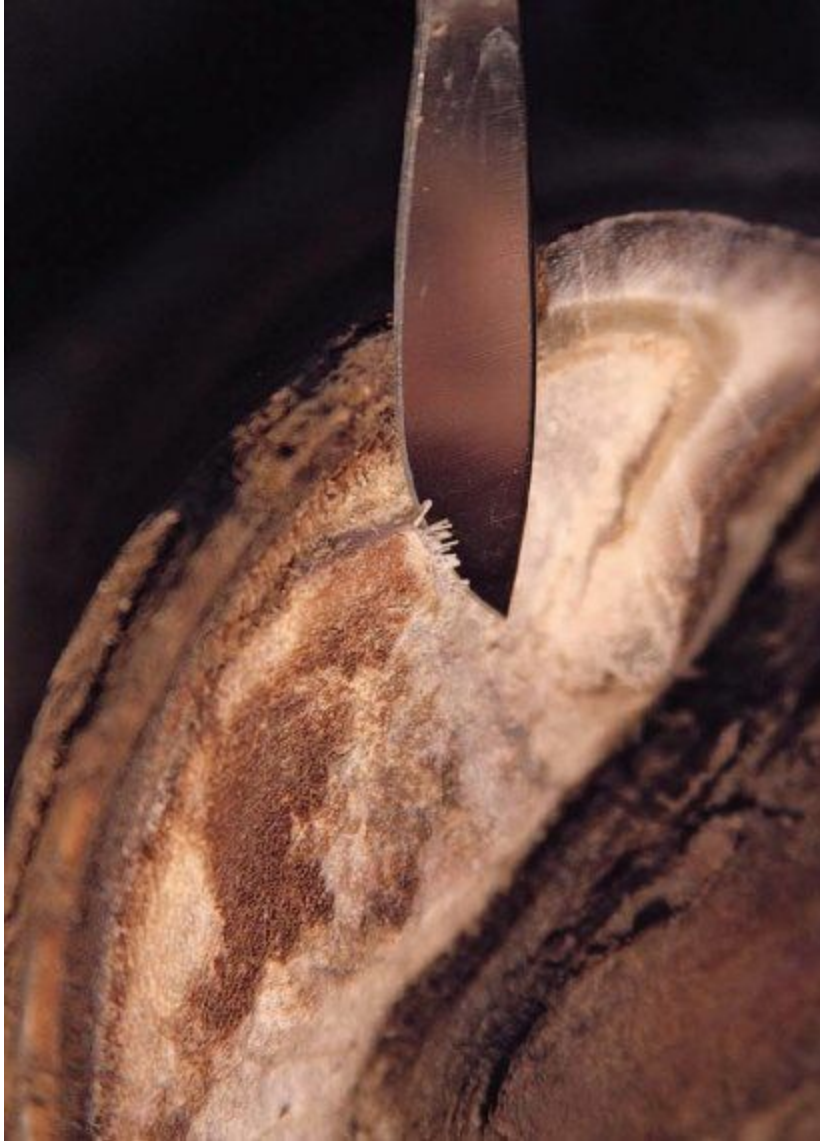




**Fig. 4.16 a–f. Hoof #I. We’ve crumbled the horn around the frog, now we are crumbling the solar horn. The bar overhangs over the sole, so we cut it so it would not interfere with the horn scraping in the seat of corn. © A.**

**Nos**





**Fig. 4.17 a–c. The same #I hoof after the horn has been scraped with a hoof pick in the corners. Note how the solar horn is ready to flake off in whole layers. © A. Nos**









**Fig. 4.18 a–c. Hoof #II. We are scraping the sole in the corners, including from beneath the bars and checking the depth of the collateral grooves. © A. Oranskaya, V. Schestakova**



Never cut away such cracks as deep as they go! Leave them alone, but take any pressure away from them, don't let the bars grow beyond a slight protrusion above the sole. The cause of these cracks is usually the abnormal load distribution and the pressure put on the bar.

The hardest part for the new trimmer is to tell the difference between the solar horn and the bar horn.

Study the anatomy of the hoof beforehand. The bar is separated from the sole with the white line. Let it guide you (if it is visible, of course). As soon as you've seen it, it is easy to tell where the solar horn is and where the bar is lying over the sole. If no signs of the white line of the bar can be seen, you are dealing with the overgrown bars which rest on the sole, and the sole itself is underneath them. The solar horn has a different texture than the bar horn, and it is easy to see the difference if you look carefully.

**ATTENTION!** Be careful; don't take abscesses, rotten tissues and bruises for common dirt.

**Q:** Why can't I lower the heels a lot in one trim? I've heard that it is necessary to lower the heels as fast as possible, it is like taking off the high-heel shoes — the relief comes instantly.

**A:** Anatomically, there is no true parallel between the woman's foot and the hoof heel height. Though, for this example of instant lowering we can say a woman may wear her high-heels every day, but not for 24 hours and surely she wouldn't play sports in "stilettos". Thus her body adapts to the wider array of its job — from the usual flat foot position to the 15 cm heel. It is through normal joint articulation that raises and lowers the human heel. The horse's hoof heel in this case is raised by excess horn growth and results in aberration of the coffin bone position.

A horse cannot slip off the heels after the party... He stays in them for 24 hours a day. Thus, his body adapts to this pathological bone position and "forgets" the normal, physiological position. The possibility and pace of lowering the heels depends on many factors which even some professionals can't grasp. If the hoof had high heels



for a long time, a horse could feel great discomfort or even strong pain after the heels have been lowered, as his ligaments and joints and the whole body had adapted to this unhealthy but “peculiar” balance for the previous years. A horse can’t just readjust himself in an instant. Moreover, the lowering of the heels means the thinning of the sole. This is unacceptable! One can lower the heels and restore the balance of the hoof only due to the simultaneous growing of the toe height and sole thickness and not just due to the cutting of the walls and sole in the heel area.

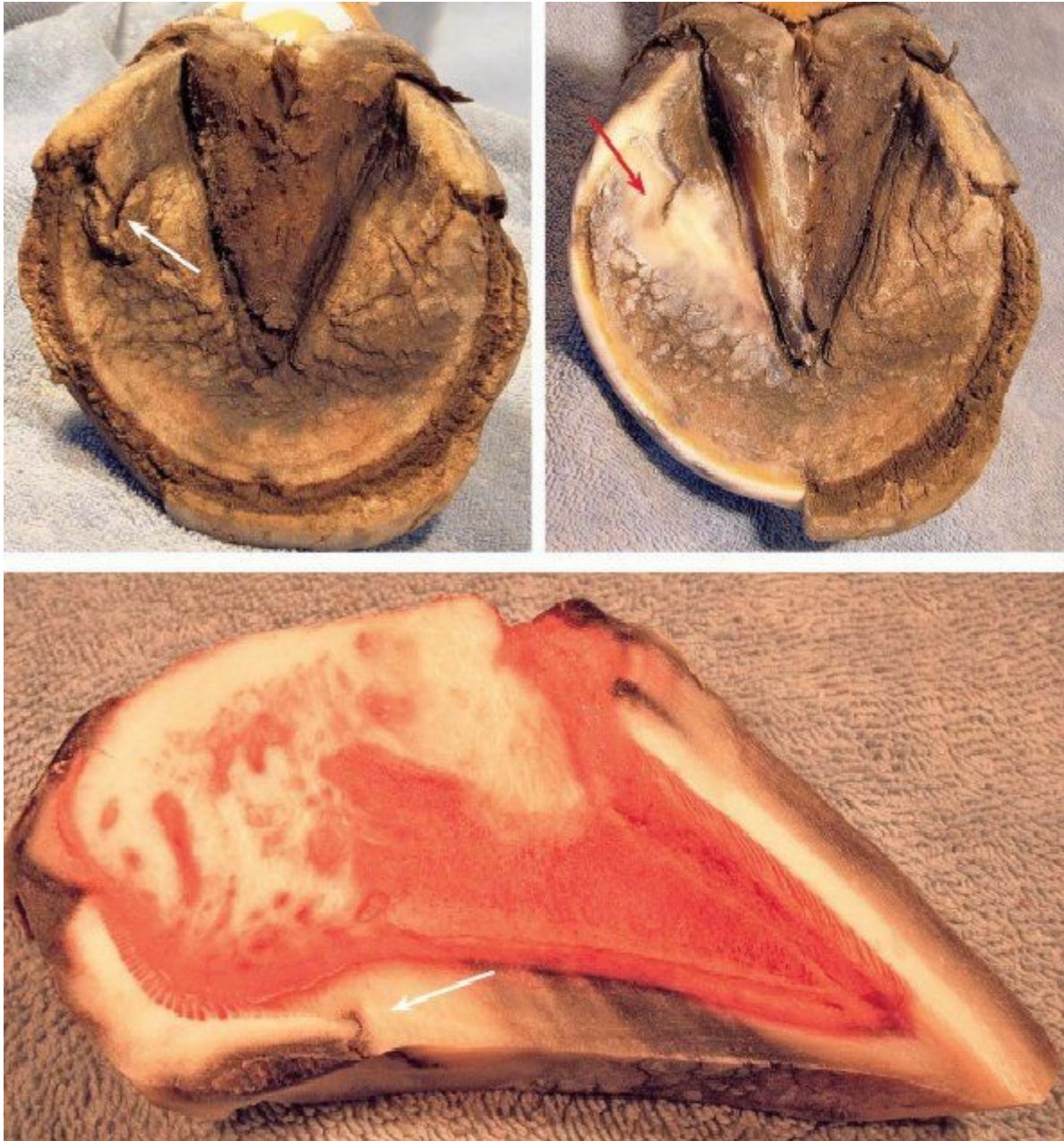
Besides, a fast lowering of the heels of the contracted hoof is very dangerous! When the heels are lowered and immediately start to bear most of the weight, the contracted branches of the coffin bone, ligaments and all the inner structures of the hoof may just break down under the load which falls on them all of a sudden.

The tissues are harmed under the pressure, inflammation may occur with pains to accompany it, and they wouldn’t allow the horse to step on his heels. Thus you not only wouldn’t gain the desired result of the restored balance and overall health, but would only make things worse and cause terrible pain in addition.

A correct lowering of the heels usually leads to the widening of the heel area and the rebuilding of the hoof which is a long and complicated process. You must not force it.

The thoughtless lowering of the heels may cause ruptures of the corium of the sole and frog, cartilage traumas, desmitis, laminitis, pododermatitis (inflammation of the sole corium), abscesses, etc. All of the above happens when the heel area is weakened while the hoof is still not ready and is forced to widen.

If you see with the naked eye how your horse’s hoof widens during the walk, it means that it is already destabilized and weakened. In general the human eye cannot see the widening of the hoof capsule during the stance phase. Keep in mind that the hoof walls are not on their own, they follow the pressure of the inner structures on them, so any manipulations in changing balance should be made gradually, in weeks or even months.



**Fig. 4.19 a–c. Note the crack in the left bar. After the heel and the wall were cut to the sole level you can see that the crack — the so-called “fracture” of the bar — goes deeper, which is clearly seen on the section. In fact, the crack appeared in the junction of the laminar bar with the sole, or, as they say sometimes, non-laminar bar. In this case the bar should be kept at the level of the sole and shouldn’t be allowed to overgrow. You must not cut away such fractures. © P. Laidely**

**A bar which has overgrown the seat of corn builds an unnatural pressure and load distribution which causes inflammation. You must not cut the sole underneath it.**

In the seat of corn area, especially if you've removed the overgrown bar from there, you may find black holes, rotten tissues, bloody, violet, pink or orange spots. Don't be afraid. Those are the bruises and abscesses which regularly appear in horses with high heels and/or overlaying bars. They appear due to the pressure put on the solar corium by the high, contracted and/or under run heels.

Squeezing of the corium, especially in the case of imbalance, enables the necroses and abscesses. If you free the heel area — “heel-bar triangles” — from the pressure, there will be no more bruises and abscesses. Release the sole from the bar horn growth resting over it and **don't lower the heels until the tissues regenerate. Keep in mind the collateral grooves' depth. Don't remove the growth completely if the grooves are shallow.**

The coffin bone in the hoof capsule of a healthy hoof should be parallel to the ground in the stance phase. Risk of negative dorso-palmar imbalance of the hoof occurs when the heels are lowered to much while the toe is left too high. This situation is no less dangerous than the simple dorso-palmar imbalance with high heels. When the toe is too high and the heels are too low, the dorsal part of the hoof is unnaturally overloaded and laminitis may occur as a result. When the sore heels are forcefully lowered, the horse finds himself in a terrible situation. He CAN'T AVOID standing on his heels to ease the pain due to the high toe. It's easy to avoid such a thing, you just need to watch the balance and try not to thin the sole at the heels, using the depth of the collateral grooves and the sole itself as your guides.

If worse comes to worst, there could be NO solar horn at all under the lain over bars! In such case it is very important to let the heels and the hoof wall (and partly the bars) to carry some weight to let the sole restore.

Don't reduce the heel height until the sole tissue is restored. Let the heels be 3 mm higher than the injured sole in the “triangle” area. Just watch the bars, they

should not overgrow.

Take the hoof in your hands and gently push the corners of the sole with your thumbs. A healthy sole SHOULD NOT sag or feel soft. If you feel the sole sagging under your thumbs and/or the horse pulls his leg when you push, it means that the corners of the sole are terribly thinned and they are painful.

With such sensitivity in the heels, the wall and bar horn should be higher than the horn of the sole until the sole grows to a normal thickness. It may do so in a couple of weeks or in a half a year — it depends on numerous circumstances and the rehab facilities.

**Q:** What should I do if I see the black holes in the heel area?

**A:** Don't poke them and don't try to clean them. Inflammation most likely occurred there, but you are really risking injuring the living tissues which lie underneath the dead ones.

The horse should be kept on soft footing until the sole is restored.

After the sole is healed the horse would need a different-type footing to activate the regeneration of the tissues and the solar horn.

Now, if everything is done correctly, you ought to see the hoof in which the old horn in the corners of the sole is removed and in which you can define the thickness of the sole.

Horses with under run heels may have a normal heel height, i.e. you mustn't change it — mustn't lower the heels, or the coffin bone will take an abnormal position. You must understand that there is no sole under such heels, which are folded under the hoof capsule. The sole there is substituted with the horn of the walls and bars. Be very careful when working with such hooves. Your aim is to gradually enlarge the bearing surface of the hoof, i.e. to return the heels back where belong, redistribute the load and to widen and restore the horn in the corners of the sole. Let the sole guide you. Cut the walls in the heel area to the sole level if it is possible and retain as much of the wall surface as possible. Frequently address the heels this way (as often as the sole allows) to prevent them from further "under running".

Don't mistake true under run heels which are formed when the heels are low



but overly long (when they are at the level of the sole and you can't lower them anymore) for the hooves in which the heel area had so much overgrown the sole that the wall started to fold under the hoof. In this case the bearing surface of the hoof will become normal right after the walls are cut down.



**Fig. 4.20. Hoof #I. The left side of the specimen is cleared with the hoof pick, the overlying bar is cut so that you can see the white line clearly. © A. Nos**



**Fig. 4.21. This is a picture of a hoof which wore down naturally. You can see how the bar while growing over its natural size begins to lie on the sole, covering the solar horn in the corner. Such a bar should be shortened to the level of the sole. © P. Laidely**



**Fig. 4.22.** This the same corner of the sole as in fig. 4.13. Due to the constant pressure of the overgrown and folded bar inflammation occurred. In this case the wall and the bar should be left a bit higher than the sole level. © N. Bykova





**Fig. 4.23. Note how the sole is thinned in the heel corners, how shallow the collateral groove is. Such a trim can make a horse a cripple in a wink of an eye. In the very corner you can see the consequences of the solar corium inflammation that occurred as a result of the cutting of the solar horn. © Nevzorov Haute École**





**Fig. 4.24 a–b. A cross-section made approx. 2 cm heelwards from the apex of the frog. Top photo: The hoof is narrow with deep concavity. Bottom photo: The hoof is flat. Note the concavity shape, the wall angles and what the overgrown bars look like if the heels are high (top photo) and how the cut bars and sole do (bottom photo). Bottom photo: On the right photo one side of the hoof is trimmed while the other shows the natural height and length of the bar and the sole. © T. Batalina, P. Laidely**



**Fig. 4.25 a–c.** In such weird cases of balance abnormalities it is hard to estimate where the true seat of corn is. It's important to identify the causes of such imbalance. In this case we can see after trimming the more or less real hoof outline. © E. Kasprova



**Fig. 4.26.** These hooves belong to the single horse. Notice what deformation may be done because of disease. © E. Kasprova





**Fig. 4.27. The bearing surface of the hoof is reduced because the heels have overgrown the sole level. This cause is corrected easily. © P. Laidely**





**Fig. 4.28. “Underrun” heels. Their formal height is low, but their length is abnormally long and it reduces the bearing area of the hoof edge and the sole. © Nevzorov Haute École**



**Fig. 4.29 a–d. Hoof #III. The walls are really overgrown, medio-lateral imbalance is present. To define the depth of the sole we were to lower the heels to the sole level (see how it is done in step 4). © T. Batalina**





**Fig. 4.30 a–b. Hoof #IV. This hoof belongs to the same horse as hoof #III. The sole in the heel area is scraped with the hoof pick. We'll lower the heels using this guide. © T. Batalina**



**Fig. 4.31. The heels are lowered properly, the balance is good. © S. Gorovaya**





**Fig. 4.32. A heel view of the hoof. As you can see, here the sole carries all the load instead of walls and sole together. It is unacceptable. © K. Toropova**



**Fig. 4.33.** The heels should be lowered to a few millimeters above the level of the frog in this case because of a slight fungal infection, evidenced by the slit between the heel bulbs. The frog and bulbs should be treated.© E. Kuzina





**Fig. 4.34. Such a heel height may be considered too high, but one must be guided with the sole which is not seen here, not to mention the frog which looks possibly diseased. © A. Nekrasova**



**Fig. 4.35. A bad case of medio-lateral imbalance. © O. Akutina**





**Fig. 4.36.** The heels have been lowered to the level of the frog. They may be a little too low. © O. Andreeva



**Fig. 4.37. The heels and the bars are badly overgrown. © V. Terenina**





**Fig. 4.38.** The heels are lowered to the level of the frog, but it is obvious that that shouldn't be done as the corners of the sole are forcefully thinned. © U. and I. Novikov



**Fig. 4.39. A hoof contracted in its solar surface due to shoeing at the age of 1.5 years. The heels should be lowered no more. © T. Kallassi**





**Fig. 4.40. Overgrown heels, thrush. © V. Terenina**



**Fig. 4.41. The heels are lowered too much, the thinning of the sole would be there for sure. © Nevzorov Haute École**



**Fig. 4.42. The hoof after laminitis. The high heels should be lowered carefully. © P. Laidely**

## CHAPTER 5. STEP 3. TRIMMING: THE FROG

**Aim — to allow the frog to bear weight by touching the ground in the heel area.**

The most important thing is to understand that with proper management, regular movement and natural hoof wear or timely rasping of the walls there is no need to trim a frog at all. Never. A frog can overgrow only if the walls are overgrown as well. If they are at the level of the outer perimeter of the sole, the frog would wear down naturally.

It is easy to understand if the frog is healthy. It must be wide, quite hard and elastic and be at the level of the heels.

A healthy frog has a central groove or sulcus. The sulcus is a shallow hollow with sloping edges. The shape of the sulcus may differ, but if you see a crack instead of a hollow — the frog is UNwell.

If you see a wide, hard, callused, clean, non-flapping frog without any signs of rot — you are lucky! Don't touch it and move to the next step of our instructions.





**Fig. 5.1 a–b. Top photo: A good frog. Bottom photo: A tremendous frog. Both of them need no trim at all. If the frogs of your horse look like these you may consider yourself really lucky. © K. Kotsinyan, F. Ivar**

If you see a small, withered, soft and dystrophic frog — don't touch it either! You can't be sure if your knife won't touch the sensitive structures. And, after all, there is nothing left to cut in such a frog — you ought to grow it instead. Such a frog needs rehab which is possible only if infection is treated, the hoof balance is restored and the frog itself bears its natural load, i.e. touches the ground in the stance phase.

A healthy frog occupies a 2/3 of the hoof sole length and has a strong-knit, smooth, svelte, callused, sometimes shiny surface. It's almost impossible to cut. And old worn and callused horn protects the frog from excessive sensitivity, rot and other environmental loads.

**If the frog has a deep crack, don't touch it, don't try to widen it, to draw it apart, don't cut it out and don't pick it. Such cracks may go as deep as the corium of the digital cushion.**

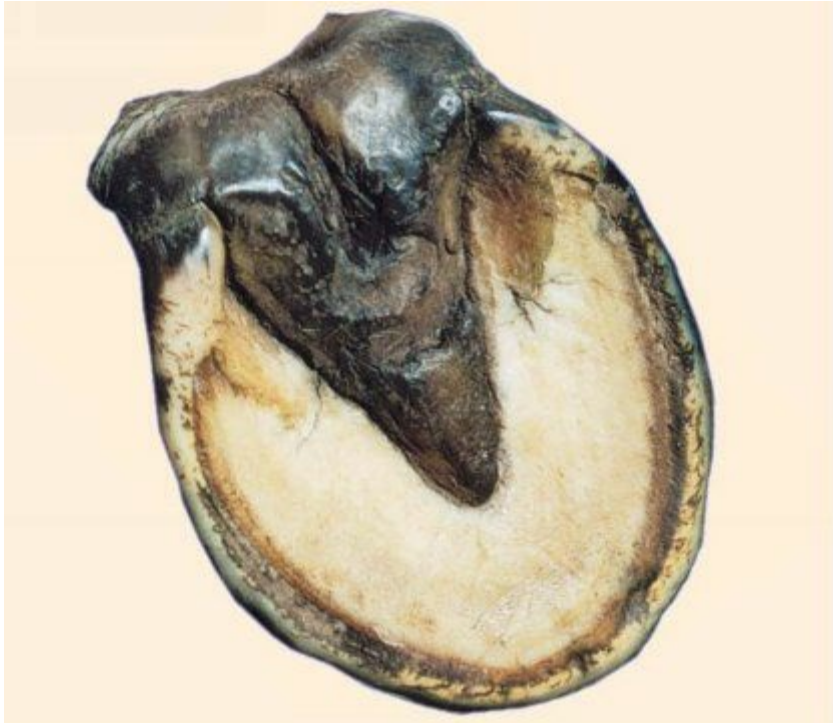
Bottom line, the only time you need to cut a frog is when there are flaps and cavities in it in which pathogens may proliferate (bacteria, fungi). In these cases you are to cut all the affected areas, but the understanding of what you may cut away and what you may not takes experience. For the time being just remove the obvious flaps and rotten pieces — the tissues which have a disgusting rotting smell.

Although I must repeat — don't put your knife in the crack of the central sulcus!

The contracted hoof always has some frog problems.

**The removal of the rotten tissues is painless, but the tender horn of the frog under the removed flapped layer may be highly sensitive and a horse may become lame after such “help”. Don't touch the areas you find just mildly suspicious and unattractive.  
Cherish every millimeter of the frog.**

**A fungal infection of the central sulcus often causes lameness.**



**Fig. 5.2 a–b. Callused frogs which need no trim at all. Bottom photo: The hoof is affected by fungal infection. © P. Laidely**





**Fig. 5.3. This frog is something indistinct and unpleasant looking but don't jump to conclusions. It may occur that after the trim you'll find out that the frog is not infected and needs only the proper heel-height to restore. © E. Demkovitch**



**Fig. 5.4. Such a heel and the central groove shape should alert you. The crack is the sign of fungal infection. © Zh. Dorokhina**

You may cut the healthy frog only if it is badly overgrown. It happens when the hoof walls haven't been trimmed for a long time. Or you may cut it if it covers the collateral grooves in which manure can collect and provoke thrush. Sometimes urine soaked wood shavings are "kept" in the collateral grooves for days, they ferment (becoming thus very hot), become black and destroy the horn of the frog and the bars. In the stage of the fermenting (decay) the temperature in the collateral grooves is so high that you may withdraw your hand in surprise. This happens when the horse is not able to move.

Never allow such a state! You may open the collateral grooves by trimming the frog a bit on the sides, but don't lower it to the level of the sole if it doesn't protrude high above the level of the walls.

Allow the frog to form a hard callus as you did with the sole. The gradual thinning of the frog may lead to its sensitivity and toe-first landing.





**Fig. 5.5 a–b. Top photo: A fungal infection of the frog tissues which is most likely caused by unsanitary conditions. Bottom photo: The infected tissues are removed as much as possible.© C. Scott**



**Cherish the outer callused layer which protects the frog from destructive fungi and bacteria.** When you remove the callused layer, you expose the inner tender tissue which is a perfect substrate for multiple pathogens.

If the frog is so much overgrown that it protrudes far above the wall level or tilts sidewise, cut the tilted part. You might not touch the last third (the part nearest to the heels) where the frog is flattened and covers the collateral grooves if manure and urine don't collect under it. There is an opinion that this part of the frog may withhold and keep a supportive layer of earth in the collateral grooves.

**Always restrain yourself from thoughtless and formal frog cutting, think before you cut even a couple of millimeters. Is it worth doing at all? If you are going to cut only a couple of millimeters, better not to cut at all.**

If you watch closely for the correct heel height, soon you'll find out that the frog has become properly callused and doesn't need trimming anymore.

**Q:** Why when the walls are badly overgrown does the frog often not look overgrown as well, but small and weak?

**A:** It's because the frog has no contact with the ground, it gets no massage and bears no load. It becomes dystrophic. If the heels are high and the horse walks toe-first the frog would degenerate inevitably. If the hoof lands heel-first the frog meets the ground simultaneously with the heels, which can't happen if the heels are higher than the frog level. Our aim is to enforce the frog, to make it wider and healthier, so we must provide it with ground contact.

**A constant thinning of the frog may harm the hoof health badly.**

**If the frog looks like something completely unhealthy — don't touch it, find the cause at first. Examine the frog carefully, feel it with your fingers, push it, find out if there are some painful areas, bleeding, purulent secretions, bad odor and if you may remove some tissue. A frog SHOULD NOT BE SOFT AND YIELDING. If the middle area of the frog flattens when you push it with your fingers, you MUST NOT cut it even if it**

**protrudes. The frog horn may be only a couple of millimeters thick (if the prolapse of the digital cushion and corium is present).**

If you've found rot and fungi, if the frog has turned into a soft and bad-smelling mess, cut the infected areas until you cut all of them. The tissues infected by fungi are dead, the horse would not feel any pain. Favor all the unharmed tissues.

Mostly, the bacteria which live in the frog cracks are anaerobes, i.e. they live and reproduce without oxygen. This means that if the damaged tissues are bared, the pathogens will die.



**Fig. 5.6. This hoof is not bad, but, considering the blackness, it was a subject of excessive unsanitary conditions. A trim with the lowering the wall height is necessary. © A. Oranskaya**



**Fig. 5.7. This hoof is not bad, but look closely at the frog. It has a crack which tells that possibly there is a fungal infection. © K. Kotsinyan**





**Fig. 5.8. An extreme contraction, the frog is atrophied. © P. Polyakov**



**Fig. 5.9. The looks of the frog proclaim the violation of the rules of the hygiene. © T. Batalina**





**Fig. 5.10. The protruding tip of this frog may be trimmed a little even if this horse shows no signs of discomfort. © E. Sakharova**



**Fig. 5.11. A flat hoof. Of course, its frog is almost at the level of the walls and the sole. One mustn't touch anything. The walls and the sole should be grown carefully. © E. Demkovitch**





**Fig. 5.12.** This hoof of this Bashkir horse hadn't been trimmed for a long time. The horse was intended for meat. The frog had grown that much because the walls and the heels had grown too long. Of course, this frog should have been trimmed to the level of the normal heel and wall height.  
© N. Bykova



**Fig. 5.13. The healthy frog of this overgrown hoof is so large that it should be cut down even in the heel area. © N. Bykova**

In some cases the frog injuries may go as far as to the corium itself. Be very careful. Remove just a millimeter of the frog at a time. The deepest layers, even the diseased ones, are better to be treated with antibiotic rather than cut away. The most usual cause of the frog rotting is candidiasis, an illness well known to women, so the human treatments for candidiasis are suitable for horses. For example, “Clotrimazole” and such like antimicrobial and antibacterial treatments are very efficient. The “human” medication “Braunovidon” or “Betadine cream”, also works well. The natural treatments are tea tree oil and soaking in vinegar (mixed with water). Often the hoof rot occurs due to *Fusobacterium Necrophorum* infection, in this case “Terramycin spray” works perfectly.

**Q:** After I’ve cut the frog “pockets” overhanging the collateral grooves, I’ve noticed that the frog looks like a layer cake from the sides. The layers are well-delineated: in the spaces between them I’ve seen black and some liquid areas. What does it mean?

**A:** All those frog layers are nothing more than frog tissues grown away from the corium. If the frog horn has no unpleasant rotten odor (the presence of the odor is a sign of rot or even a frog cancer), if it is compact and doesn’t fall apart, you mustn’t cut it. If you see the blackness somewhere in the depth, in the frog horn layers, you must understand that it is there because of such inflammatory processes as bruising which occurred earlier. They are no threat anymore. The affected tissues will grow out and wear away on their own or you’ll cut them as they appear at the surface if there will be a need.

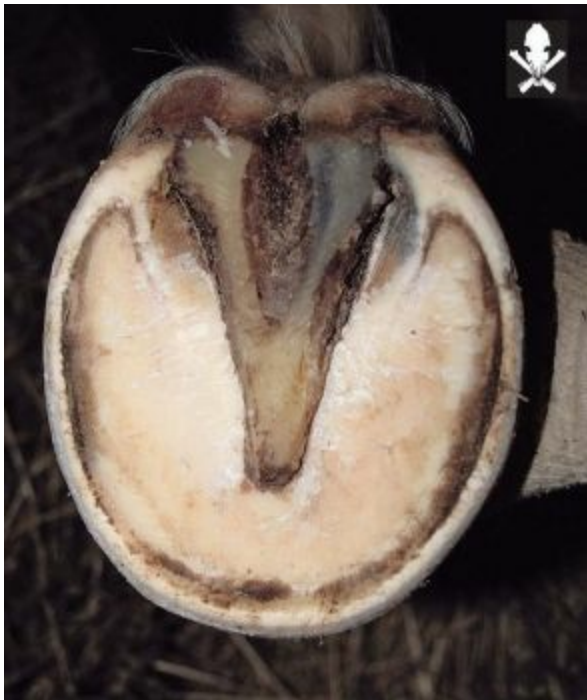
Nevertheless, always look for the simple answers. If a horse spends all the time in a box which is cleaned once a day, if he walks in the muddy, dungy paddock, you must know that the cause of the rotting is the absence of hygiene, not the mysterious “fungi”. You won’t be able to heal the frog with any kind of medication without total reconsideration of the living conditions!

So, remove only the badly overgrown tissues, don’t touch the heel area of the frog and try also not to cut the middle area of it. You may work only with the

apex part. In this area the frog may lie sufficiently deeper than the hoof wall level (depending on the depth of the solar concavity).

Let the junction of the frog and the sole in the apex guide you, you may remove a bit of the frog in the top and the middle of the frog so that it would be deeper than the hoof wall level. In the heel area the frog **MUST** be at the level of the wall.





**Fig. 5.14 a–b. The hoof which needed no trim has been trimmed anyway (bottom picture), the frog was cut only a millimeter down, but what is the purpose of it? What has changed for the better? Nothing! On the contrary, the protective layer of the frog was removed. © E. Sakharova**



**Fig. 5.15. An unhealthy hoof with medio-lateral imbalance. The white line looks inflamed, laminitis may be present, the frog is rotten a bit. The heels are narrow and asymmetrical (mind the left bar, see how it curves towards the frog). The radical trimming with the solar horn cutting doesn't help to heal this hoof. The sole has been thinned with the knife. © Nevzorov Haute École**



**Fig. 5.16. Incorrect trimming of the sole and the frog. In this case, to keep the apex and the middle part of the frog at the level with the walls, one must grow the walls and the solar horn rather than cutting the frog down “to the roots”. © K. Kotsinyan**

**Talking about frog trimming, Pete Ramey states this:**

“From the physiological point of view, the constant stimulation with pressure/relaxation is the first thing to improve the frog quality. Every time you trim the frog, you must understand what you are doing:

- 1) The removal of the “pockets” in which the destructive fungi and bacteria live (frog trimming is necessary).
- 2) The removal of the outer callused layer which preserves the frog from the destructive fungi and bacteria (trimming of the frog is harmful).
- 3) The lowering of the overgrown frog to remove the excessive pressure which may cause the hypersensitivity (the frog trimming brings more comfort).
- 4) The thinning of the safety barrier of the frog between the sensitive corium and the ground which may bring the excessive pressure on nerves (the frog trimming causes lameness).

You must think carefully over every factor before you pull your knife out of your pocket: the frogs must be cut only if it is absolutely necessary.

The main cause of frog rot is the absence of proper trimming, hygiene and movement.

Look closely at the frog areas which overhang the central and the collateral grooves. Some “pockets” may form there due to natural causes to withhold some soil in the grooves. You may leave them alone and everything would be perfect if the horse lives in a dry area, but if he lives in a wet region, such pockets may gather mud and manure and become the ideal plantation for malignant bacteria. In this case it is better to clean the grooves and to trim the frog so that the grooves could self-clean. It is mostly important for the central sulcus!”.

**Q:** Q: How can a novice define that there are a couple of millimeters left



before he cuts into the living flesh?

**A:** It's very difficult! That's why I say that it's better not to cut.

One must understand that besides the collateral grooves there is another anatomical formation — the central groove or central sulcus. To understand how it should look, one must only know anatomy.

The shape and the size of the central sulcus varies within a certain range, but always corresponds with the shape of the digital cushion and the frog corium.

Depending on the width and the health of the frog the central sulcus may be either wide and shallow or a deep and narrow crack. You must consider these peculiarities during the trim and not expect the narrow and contracted frog to have a gently sloping sulcus.

Of course, it's useless and dangerous to try to make the central sulcus look healthy, shallow and wide with the knife.



**Fig. 5.17. Brumby hooves.** These collateral grooves may withhold the soil. Frogs of this size are not always suitable for domestic horses. © P. Laidely



**Fig. 5.18 a–b. An over trimmed hoof. The frog is fatigued by constant cutting and thinning. There are some troubles with it, including the trouble with the central sulcus. © E. Kazmina**



**Fig. 5.19. The trimming of a sport horse before shoeing. © N. Bykova**





**Fig. 5.20.** This hoof is pretty good. However, the sole was trimmed with the knife with no purpose. The whole surface of the frog is cut down with the knife. © K. Kotsinyan





**Fig. 5.21. The contraction of the heels usually leads to frog problems. Mind the narrow central groove. One must not put the knife in it! It may only be treated. © O. Andreeva**



**Fig. 5.22.** This frog is troubled with constant rotting. Mind: the heels are contracted, the central groove has a crack in the middle, mud gathers in the collateral grooves, that's why the frog looks rotten. The apex looks healthy because the dirt doesn't gather around it. © K. Kotsinyan



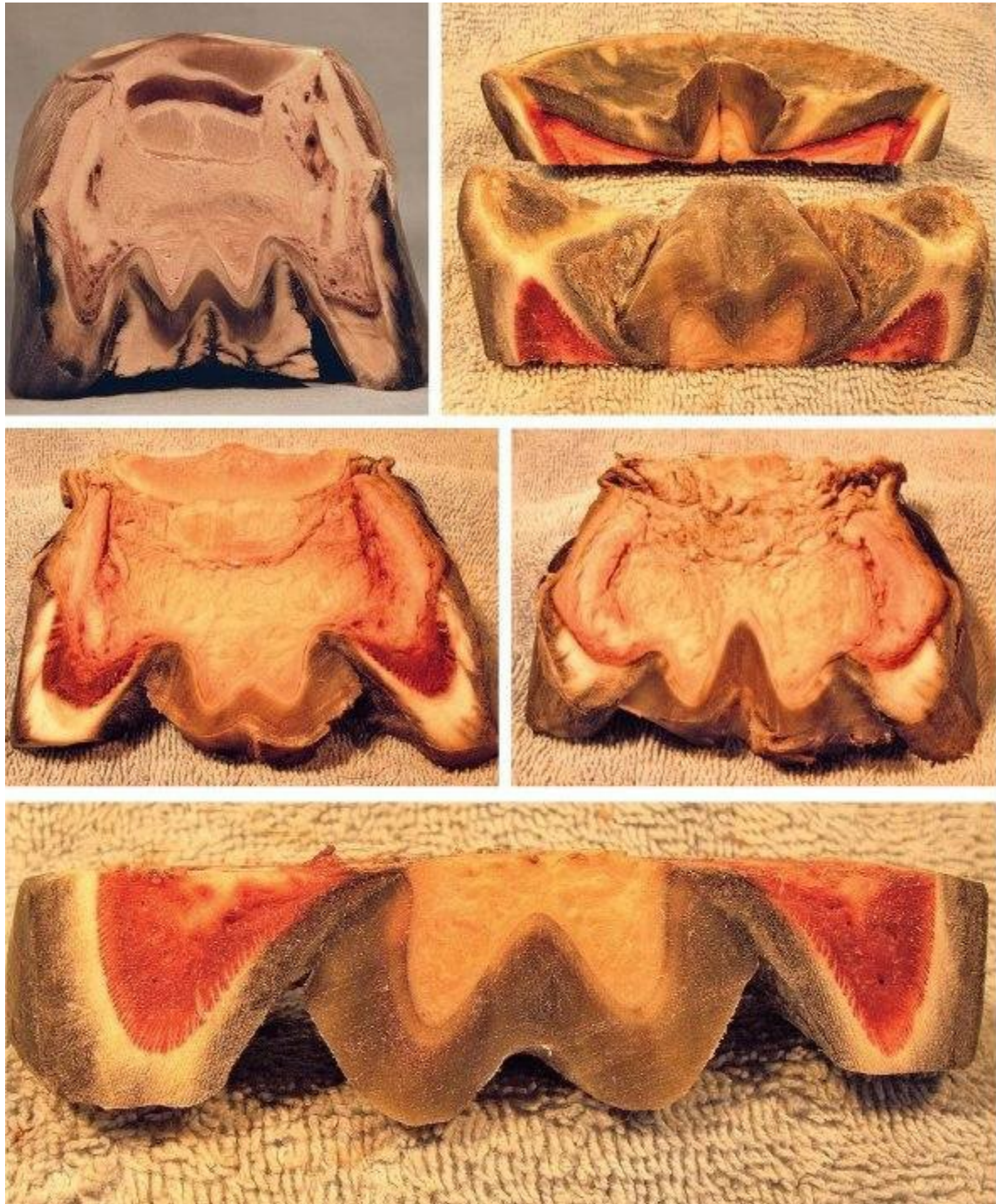
**Fig. 5.23. The area where the tissues of the central sulcus are rotten was carefully removed. © E. Demkovitch**





**Fig. 5.24. The quality and even the color of the horn show that the hoof lives in unsuitable conditions. Mind the narrow and the deep crack in the central sulcus — the sign of infection. © T. Batalina**





**Fig. 5.25 a–e.** In these sections of hooves you may see how the outer shape of the frog corresponds with the digital cushion. © P. Laidely

The flat central groove which may be present if the frog horn is overgrown is not dangerous, but may cause some discomfort because during the stance phase the frog horn in the area of the central sulcus bulges a bit, but the frog flattens and wears away on its own or calluses.

Never make a groove in the middle third of the frog! You don't know how thick the tissues in this area are and it is very likely that there are only a couple of millimeters of horn over the corium and descended digital cushion.

If after you were to lower the overall hoof height and the frog in the heel area calls for you to create the central sulcus, make it (only if the frog is wide and healthy). To make it, symmetrically cut small pieces of the horn with a shallow angle towards the central line. The groove should be shallow. Never cut deep! Place your knife almost flat to the frog. The depth of the groove should be no more than 0.5 cm. You're better off to make it even shallower — no more than 3–4 mm. It is better to undercut than overcut.

**If the frog is contracted and its peduncles (branches) form sharp angles, if it has a crack in the place of the sloping groove, you mustn't widen it with the knife — it's useless and dangerous.**

**DO NOT cut the well callused frog without a prominent central sulcus if a horse shows no discomfort. Any cutting of the outer protective layer may lead to a fungal infection of the healthy horn.**

We will come back to the frog later... Now, let us move to the trimming of the heels.





**Fig. 5.26.** This hoof has contracted completely. Among the causes is the presence of pathogenous microflora in the central groove of the frog. It could take months or even years to rehab this hoof. One mustn't cut such a frog. © Zh. Dorokhina



**Fig. 5.27. A rotten frog. Mind the shape of the heels, they are contracted and curved inwards, the frog can't prevent them from contracting further.**  
© Nevzorov Haute École





**Fig. 5.28. This is invasive trimming. This good frog has no central groove only because the frog horn around it is removed. The heels and the sole are over trimmed. © Nevzorov Haute École**

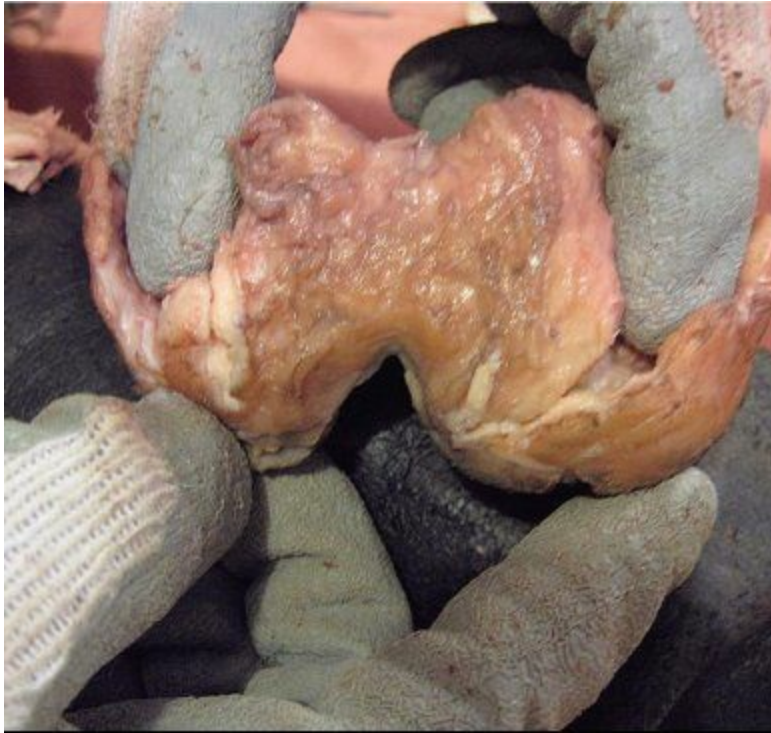


**Fig. 5.29. One mustn't touch such a crack, only the outer layer of the tissue may be removed a little to place the medicine into the crack. © P. Laidely**



**Fig. 5.30 a–b. The frog on the left is healthy, but the one on the right shows how the crack in the central groove looks from the inside in the case of the fungal infection. When you are looking at such a photos, you clearly understand why one must never put the knife in such cracks, move them apart or cut them away. © A. Nos, D. McCormick**





**Fig. 5.31 a–b.** The rotting of the central sulcus often favors heel contraction. The tissues of the heel area and the digital cushion are so elastic that they may be squeezed and deformed with fingers. © V. Reesor



**Q:** Should I cut away large (5 mm — 1 cm) round rotten areas in the frog?

**A:** Small black holes in a healthy frog may indicate a local bruise, abscess or trauma, puncture wound or even a foreign body.

If the horse feels fine, there is nothing to worry about. The decision either to cut or not depends on the cause of the rot. If the horse had stepped on a sharp stone, you may leave the frog alone and not cut anything. If the rot is the cause of lameness and discomfort, you should scrape the injured area and find how deep the damage goes. Make sure there is no nail (this is a common thing) or small stone (these may press into the frog and cause abscesses) in there, etc. If the local rot goes quite deep, consult a veterinarian immediately and make a radiograph. There are tendon, navicular bone and bursa underneath the frog. They often get traumatized through the frog. The perforation of the frog and the infecting of the inner structures of the hoof may lead to the necrosis, and this is fairly common thing to happen.



**Fig. 5.32 a–b.** The pits on the frogs of these hooves were discovered after the outer layer of the frog horn was removed, they are harmless and one shouldn't do anything about them. © L. Nilsson, A. Nos

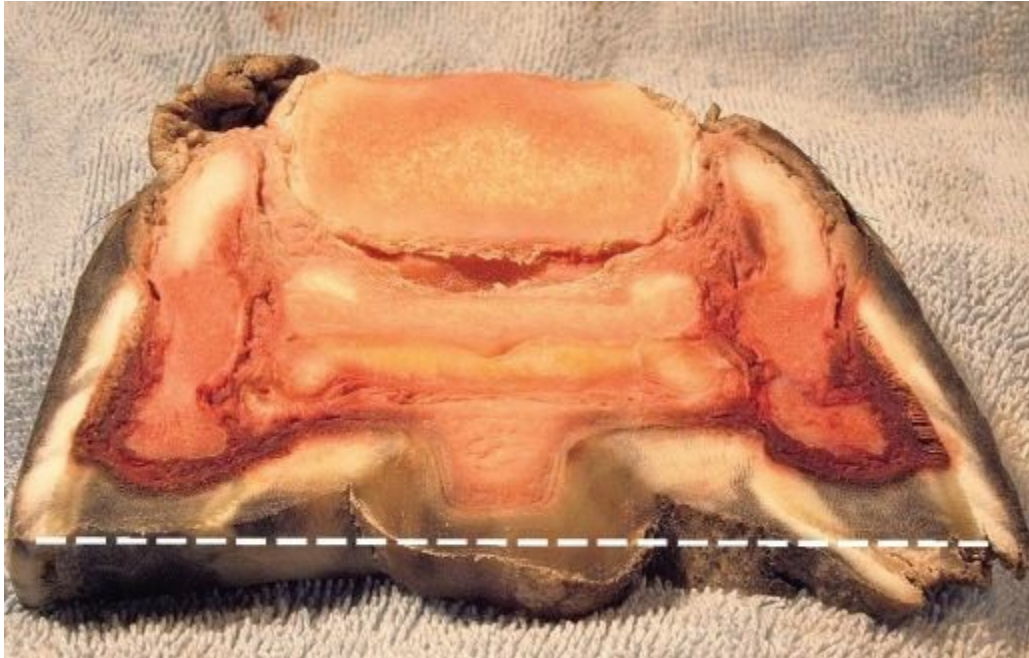
**Q:** Should I cut through the soft walls with which the collateral grooves end in the heel area of the frog (the ones which connect the heel with the frog peduncles)?

**A:** By no means! With such a cut you seriously injure the hoof!



**Fig. 5.33 a–b. Never cut away or trench the tissues between the heel and the frog, don't cut the bar horn from the frog side! © Nevzorov Haute École**





**Fig. 5.34.** If you are cutting the frog, keep in mind that its corium may lie lower than the corium of the sole! In the flat hoof the risk of “overcutting” the frog is very high. Try not to cut the frog in the heel and middle areas. The so-called capelets usually happen not because the middle area of the frog is too fat, but because it’s too thin. Before you cut anything, feel the frog with your fingers, push a little. If the frog is soft and you can squeeze it — **DON’T CUT IT BY ANY MEANS.** Leave it at the level with the walls. © P. Laidely





**Fig. 5.35 a–d. Hoof #II. While examining the frog, we’ve found that it has a pits in the middle area. To make sure that it isn’t a puncture wound, we’ve removed the horn in the rotting area carefully with the knife. We removed enough horn to examine this area, the healthy frog stays untouched. It turned out that this fissure was harmless. One should pick open such local pits only if she suspects a puncture wound or a serious infection of the tissues. © V. Shestakova**



**Fig. 5.36 a. An over grown frog. This is a specimen, so the tissues are overdried. The collateral grooves are covered which allows them to withhold the soil or manure. Such overgrowth occurs when the heels don't wear away normally or they are not trimmed properly. If the heels are at the correct level, the frog will form a callus naturally. © N. Bykova**



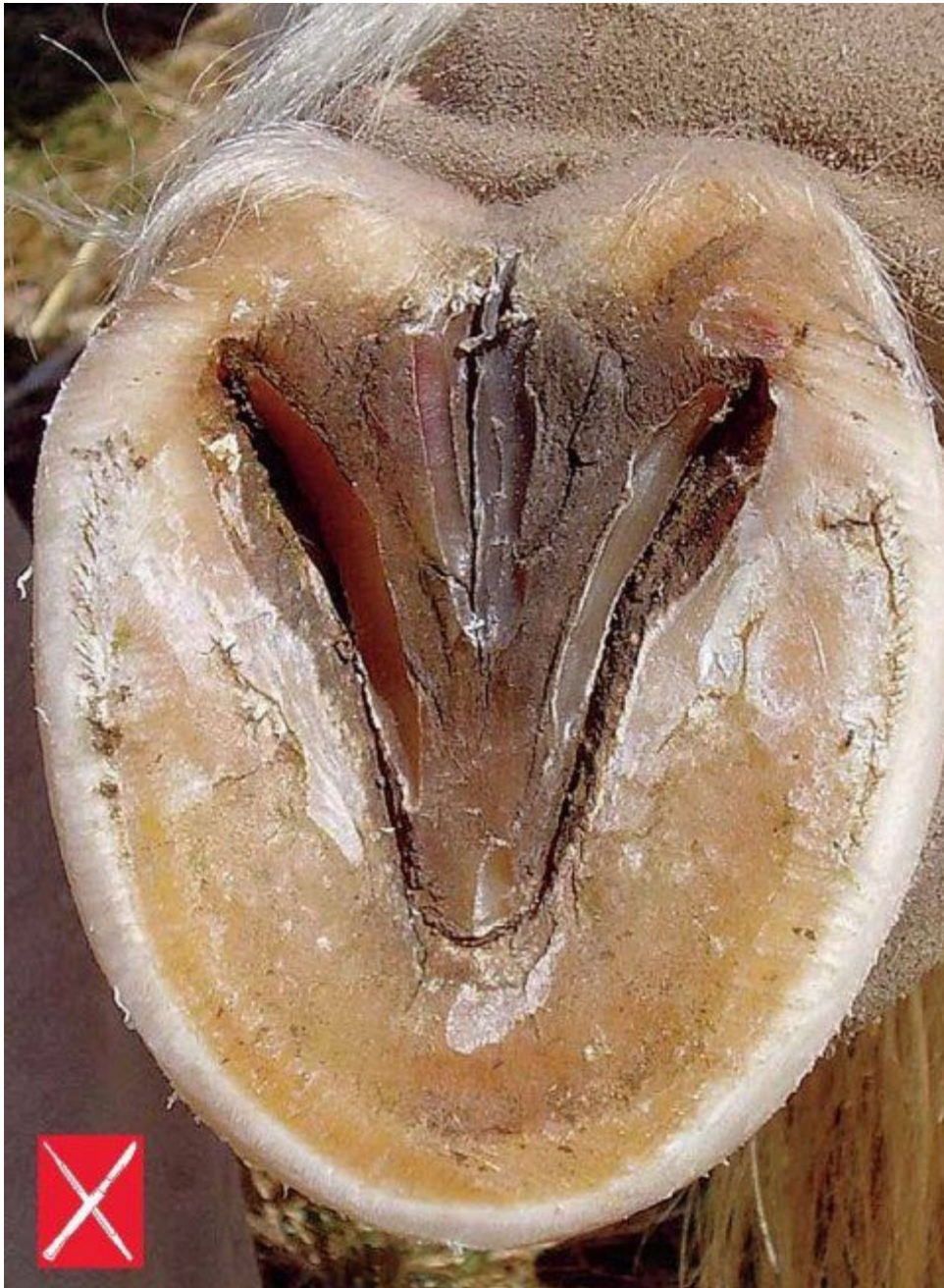


**Fig. 5.36 b.** After the lowering of the heels and removal of the old tissues, the frog is bared too much. It would take some time for it to callus. © N. Bykova



**Fig. 5.37 a.** Here is a hoof of a miniature horse with a slit in the place of the central sulcus of the frog. © P. Laidely





**Fig. 5.37 b.** After this rehab trim it is obvious that the central sulcus is cut down a couple of millimeters while the slit goes deeper. One mustn't cut it.  
© P. Laidely



**Fig. 5.38 a–b. If the central sulci of the frogs of your horse look like these cracks, the hooves need serious and longtime treatment and rehab. A simple trim wouldn't solve this problem. © Zh. Dorokhina, T. Batalina**





**Fig. 5.39 a–b. The artificially made central sulcus. If you don't understand the shape of the corium, you must not cut this deep — it's dangerous. © P. Laidely**

# CHAPTER 6. STEP 4. TRIMMING: THE HEELS

**Aim — to reestablish the dorso-palmar/plantar balance, to lower the heels to the physiological correct level.**

It won't be easy at first. If you are afraid — don't lower the heels now, plan to remove more of the heel height the next time, and now be conservative in reaching the necessary level.

In any case, the heels shouldn't be lowered more than 4–6 mm, maximum 1 cm at a time, and this is only if you are sure that it would cause no harm. Everything depends on how long the horse has had high heels. If they've been growing for a month from the last trim, you may lower them without hesitation. If the horse has had a too high heel height for all his life, lower the heels very carefully, by rasping literally a few millimeters at a time.

Surely, you've drawn the desired heel height on the outer wall of the hooves. Look to see if your marks meet the level of the sole in the heel-bar triangles.

If they do not, use the sole to guide you, not your measured calculations.

Now, after you've made some kind of mark, after you've defined the sole level and the heel height, you should rasp down, cut with a knife or even remove the excessive horn with the nippers.

Take the rasp and lower the heels to the desired height. **If you are trimming for the first time, stop at a few millimeters over the sole.** This way you'll protect the weak solar horn in the heel area and leave some horn for you to make the heels even. You likely won't be able to make the heels identical during your first trim.

You must leave some horn in the quarters as well so that you'll be able to make scoops later if necessary.

Examine the hoof to see if you have lowered the heels correctly and evenly.



Try to work with each heel in turn, don't try to rasp both of them simultaneously since you'll likely make them uneven that way. Move the rasp from the toe towards yourself.



**Fig. 6.1.** The walls of this hoof haven't overgrown the level of the sole much; the heels should be rasped so that they'd be a little higher than the sole. © P. Laidely



**Fig. 6.2. The heels are lowered correctly. The walls should be rasped, as well. © E. Zharova**

Thus you'll get the smooth transition of the heel wall height to the toe one.

**Don't forget that the rasp works only in one direction.**

Keep in mind that you should master the art of rasping BEFORE you ever trim a living horse. You should learn to hold the rasp in the left and right hand equally.

Usually at this stage the novice starts to ask the reasonable questions: from which point does the heel begin? Which part of the wall should be trimmed?





**Fig. 6.3. Hoof #II. The heels are lowered to the correct level (not evened yet), while the bars are still high. © A. Oranskaya**



**Fig. 6.4. Hoof #V. The right heel has been lowered some. The left would be lowered to match. The frog may need treatment before lowering the heels further. © T. Batalina**



**Fig. 6.5 a–b. While rasping the heels put the rasp in correlation with the bars, move it from the toe to the heel (see the arrows) (The rasp as shown is in the opposite orientation and should be turned the other way). © F. Ivar**





**Fig. 6.6 a–b. An incorrect placement of the rasp. If the movements of the rasp are not flat, the hoof could be badly injured. Never remove the points of the heels which face the frog (the “hooks”). Bottom photo: the arrow indicates an open wound made by rasp. © Nevzorov Haute École**





**Fig. 6.7 a–b. Hoof #I. The solar heel-bar triangle has been cleaned. The heel and the bar are seen clearly. There is no need to trim a living horse for such a clear picture. You may leave the old horn be. Mind how the outer layer of the solar horn crumbles away. © A. Nos**



**Fig. 6.7 c. The heel and the bars of this hoof lie far ahead of the normal position, covering the sole. Nevertheless, the hoof itself is not bad and the overgrown heels won't harm the sole. On the left you see the scraped sole and trimmed heel. We've cleaned the sole with the hoof pick during step 1, now we've rasped down the heels. Note that the wall was also lowered to the sole level with the same movement of the rasp. © A. Nos**



**Fig. 6.7 d. The same hoof after the balance has been restored. © A. Nos**





**Fig. 6.7 e. The wall is lowered to the sole level. © A. Nos**





**Fig. 6.7 f. The same hoof before the trim, the medio-lateral balance is normal. © A. Nos**

The answer is not that simple: the task of lowering the heels is for the purpose of the restoration of the dorso-palmar/plantar balance. Speaking of lowering the heels, we mean the lowering of the walls in the back part of the hoof, the bars and the outer walls in the heel area (back from the widest part of the hoof).

The rasp should not come near the bottom of the collateral grooves below 1.6 cm by any means. While lowering the heels, always check the depth of both grooves, they may be different.

Of course, when you rasp the heels you can't evade touching the side walls, you mustn't leave any abrupt level differences. **You may prevent the level difference if you are working on one heel at a time, in the direction from the toe to the heel, i.e. you should place the rasp not across the hoof, but along it, from toe to heel. While lowering the heels, don't touch the front half of the hoof. Work only on the heel area — approximately from the point of the laminar bar ending to the heels.**

So, lower the heels to be 2–3 mm higher than the level of the sole in the heel-bar triangles.

While rasping the heels, never touch the toe callus if you don't need to lower the overall hoof height or toe height.

Decide from the very beginning whether you will make scoops, or not. If they are necessary, leave some side wall height while you trim.

If you are not planning to make scoops, you may make the walls in the toe and the sides of the hoof even with the perimetrical edge of the sole WITHOUT TOUCHING it.

If you think that the angle of the dorsal hoof wall is too steep, make a radiograph and read the books by Dr. Bowker and other specialists before you correct the balance. It is possible that the heels should be lowered in this case, but the collateral grooves should be deeper than 1.5 cm to do it. If they are shallower, you can't lower the heels.

The recently unshod hoof should be left with slightly longer heels to

protect the weak sole, otherwise the horse will step toe-first to protect it. If the horse starts to spare his heels, they will not have proper load and will grow faster than the toe. Thus the vicious circle is created: you have to lower the heels more — they become painful — the horse steps toe-first — the heels grow fast — you have to lower them radically... This scheme is typical for the nonprofessionals, but it is easy to avoid. While trimming the recently unshod horse leave the heels 2–3 mm higher than the sole level (the sole should lie deeper than the walls). During the subsequent trims you'll be able to lower the heel height gradually. The frog can also provoke discomfort if its apex or the middle third are bulging higher than the walls.



**Fig. 6.8 a–b. Hoof #IV. The heels are lowered to the level of the sole and the correct depth of the collateral grooves (FOR THIS HOOF). The depth of the grooves is 1.5 cm. © T. Batalina**





**Fig. 6.9 a–b. Hoof #III, the same hoof as pictured on the next page (fig. 6.10). Before and after lowering of the heels and bars. (Note: this frog is diseased and in a live horse would require treatment before lowering the heels this much.) © T. Batalina**



**Fig. 6.10 a–d. The overgrown hoof with a medio-lateral and dorso-palmar imbalance in the process of being trimmed. Note how much longer the left heel is and how asymmetrical the hoof is. The heels should be trimmed to**

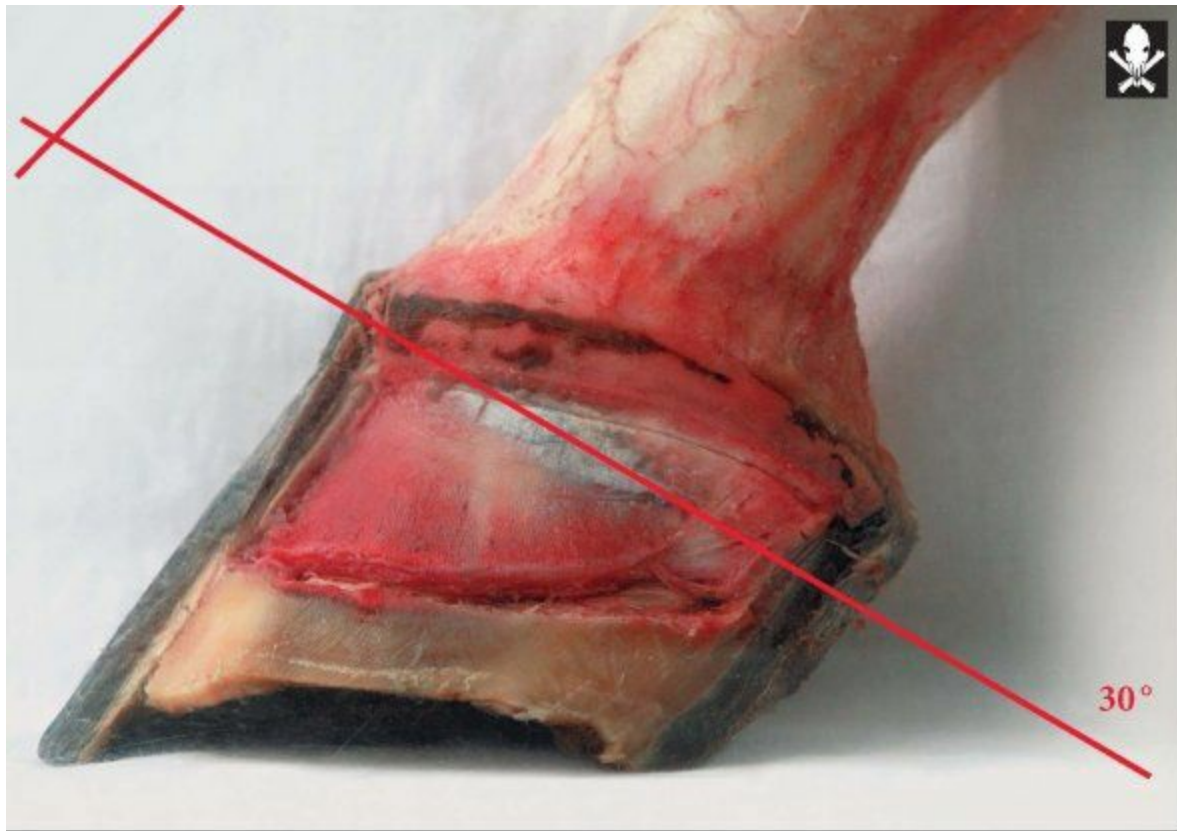
equal height, which was done as shown in the photos. In the lower left photo the defining of the sole in the heel-bar triangles is shown. In the lower right photo the completely trimmed heels and bars are pictured. © T. Batalina

**Q:** What does it mean when there is still enough heel, but the sole in the heel-bar triangles is alive and hard already? The hoof is not a club foot. Should the trimming of such a hoof be considered individually? I can't lower the heels further, can I?

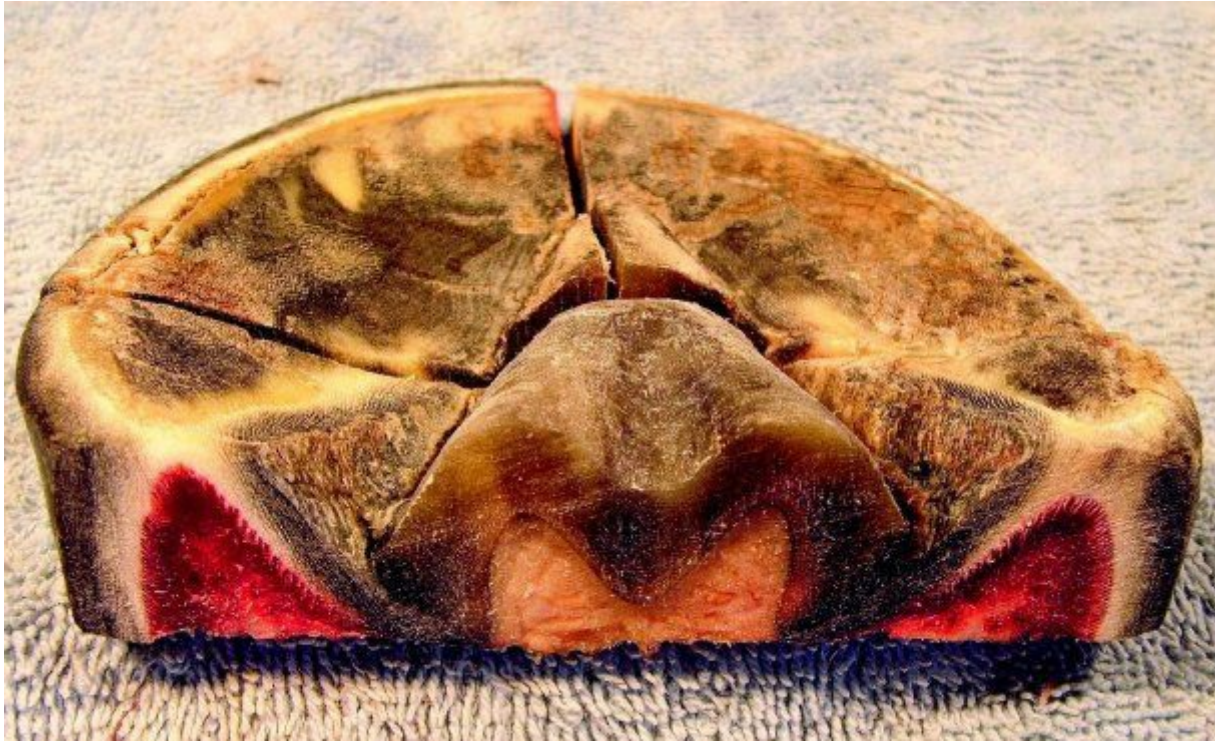
**A:** What does it mean — “enough heel”? I suppose, it means that the heels are much higher than the frog level or that the heels are too high (the angle of the hoof is too steep)? Never cut — lower the heels — if the sole doesn't “allow” you. Remember that the collateral grooves should be at least 1.5 cm deep.

Remember that the sole almost repeats the concavity of the coffin bone. A frog can be dystrophic due to contraction or fungal infection or just because a hoof has had very high heels for a long time. In this case you should NOT let the frog guide you. Let the hoof adapt to the heel height you are able to achieve this time. Possibly, in a month or two you'll be able to lower the heels a bit more if the sole and the collateral grooves will let you, of course.





**Fig. 6.11.** After looking at this photo you'll understand why you shouldn't trim the heels if you are guided only by the "ideal angle" of the coronary band (30 degrees). © N. Bykova



**Fig. 6.12. While looking at the hoof from the sole side, many will think that they can trim it until the bars are clean, without any dark spots, but look how close to the surface the corium is in the heel area. NEVER LOWER THE HEELS AND WALLS this way. © P. Laidely**



**Fig. 6.13 a–d. Hoof #II. We are trimming the heels one at a time, placing the rasp in line with the direction of the bar. After that, to check and level the heels, we put the rasp to both of them simultaneously (it is better to use the fine side of the rasp). © V. Schestakova**





**Fig. 6.14 a–b. The hoof should look like this after the heels are lowered. © V. Schestakova**





**Fig. 6.15. A terribly neglected hoof of a ranch horse. © E. Kazmina**



**Fig. 6.16. The heels are at least 3 cm too high. © A. Nekrasova**





**Fig. 6.17. A proper trim of a contracted hoof (the roll is still needed on the wall). © O. Andreeva**



**Fig. 6.18. Medio-lateral and dorso-palmar imbalance, fungal infection of the frog, and a stretched white line. © A. Oranskaya**





**Fig. 6.19. This hoof is not perfect, but the trimming strategy is correct. The heel height is suitable for this hoof. © V. Lyubovnaya**



**Fig. 6.20. A proper trim. The right bar could be shortened a bit in the near future and the roll on the wall should be enhanced, as well. © K. Kotzinyan**





**Fig. 6.21 a–f. A cadaver hoof before and after the trim. In a living hoof the sole shouldn't be scraped this thoroughly. Note the distortion of the white**

**line in the toe area. It happened because the dorsal wall grew a couple of centimeters too long. © K. Kotzinyan**



# CHAPTER 7. STEP 5. BALANCE CHECK

**Aim — to make sure that you've chosen the proper trimming strategy.**

Now it's time to check the balance of the hoof once more.

**I must remind you that THE STRATEGIC DECISIONS CONSIDERING THE CORRECTING OF THE IMBALANCE ARE MADE BEFORE THE TRIM.**

During the trim you must follow a clear and detailed plan.

Stand as close to the horse's shoulder as you can. You should be facing his hindquarters. Pick up his leg and hold it by the metacarpal bone letting the hoof hang freely. Estimate the medio-lateral balance. Look at the toe through the heels, make sure that the walls are at the same level.

To examine the hind hooves, pick up the horse's leg and pull it gently backwards, letting the hoof be in the natural position. Try not to pull the leg sideways. Look at the toe through the heels.

Imagine that you are holding a glass in your hand and you are looking at it the way that the closest edge and the furthest make one line. Look at the hoof the same way.

For example, if one heel is higher than the other, it would bulge over the toe edge. Mark with the felt tip pen how much of horn is protruding over the common level.

Now put the hoof on the ground and look at it from the front. If you've acted properly — lowered the heels and didn't violate the medio-lateral balance — the coronary band will be parallel to the ground (remember, looking at it from the front). The frog should touch the ground and the side walls should have equal height.

Nevertheless, keep in mind that the changes in the hoof geometry due to medio-

lateral imbalance may not be obvious right after the trim during the external examination of the hoof, but the mistakes of the trim would be evident when one of the hoof walls would move sideways “all of a sudden” and a unilateral stretching of the white line has occurred, or one of the heels would “run” under the hoof and the hoof capsule becomes slanted.

One can “create” the slant in one trim, but it can take months to correct it, or even years if the imbalance is old. Uneven heels are one of the most common consequences of medio-lateral imbalance, so check the balance often. Look at the toe through the heels every time you can.



**Fig. 7.1. A severe case of medio-lateral imbalance. © Nevzorov Haute École**



**Fig. 7.2. Proper medio-lateral balance of the normal hoof. © T. Batalina**





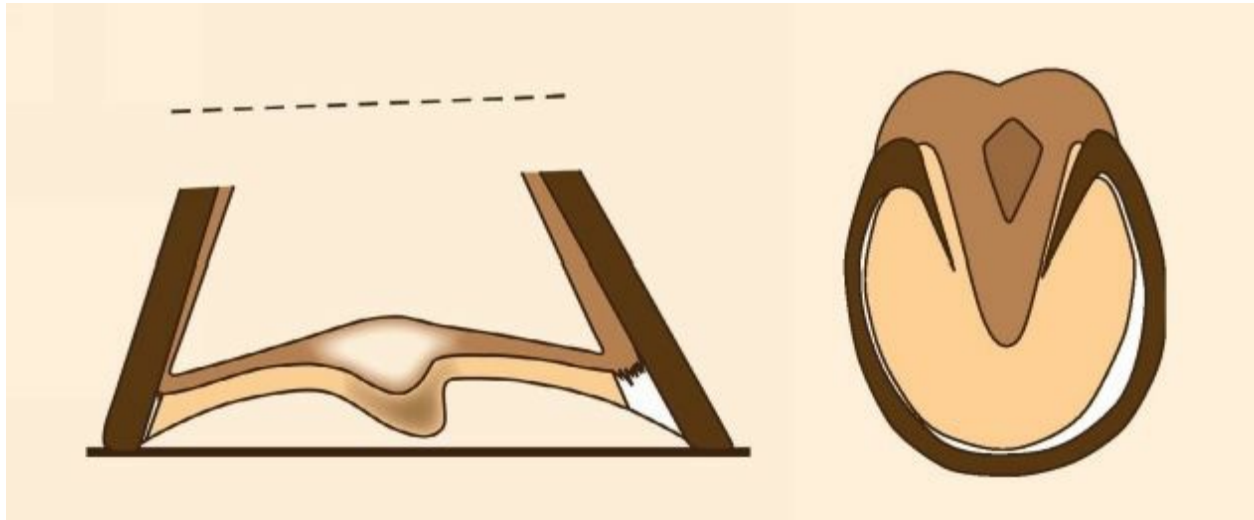
**Fig. 7.3. A steep hoof with medio-lateral imbalance to make things even worse. © V. Terenina**



**Fig. 7.4. A steep hoof where the medio-lateral balance is slightly off. © V. Terenina**



**Fig. 7.5 a–b. Compare the even balance in these hooves to those on the previous page. However, these heels are a bit too low. © T. Batalina, S. Kharyushina**



**Fig. 7. 6.** If one wall is left longer than the other, the slant, or the medio-lateral imbalance in other words, will occur very quickly. The higher wall will move sideways, the white line will stretch and the coronary band line (dashed line) will become inclined. © P. Laidely

**Q:** How should I trim the heels of the toed-out or toed-in hooves if there is no discussion about correcting these pathologies?

**A:** We are not talking about problem hooves and correcting pathologies in this book. But if the problem is really in the hooves, you'll be pleased after you'll trim them with the sole level to guide you. In many cases deviations disappear or become less prominent after one or two trims. Don't try to fight the toes-in or toes-out right now. Trim such hooves as you would trim the ones without any pathologies.





**Fig. 7.7. Medio-lateral imbalance. Note the unequal wall height. This kind of imbalance is easy to correct, though. © A. Grigoryeva**



**Fig. 7.8. A hoof with a medio-lateral imbalance. © A. Oranskaya**





**Fig. 7.9 a–b. The chronic anomaly of medio-lateral balance. © V. Terenina, L. Nilsson**



**Fig. 7.10 a–b. Top photo: a hoof without any severe dorso-palmar imbalance and coronary band angle distortion (the hoof is simply just overgrown); bottom photo: a hoof with a true anomaly of dorso-palmar balance. © N. Bykova, E. Demkovitch**





**Fig. 7.11 a–d. An example of medio-lateral imbalance. Even if the shoes are removed, the rehabilitation could be long and hard. The line of the coronary band is not parallel to the ground, all the axes are displaced, the hooves are toed-in and the heels are of the unequal height. If you are to trim such hooves, keep in mind that the collateral grooves are of the unequal depth! Trim the higher heel to meet the height of the lower one — or at least closer to it, if it is a healthy height — and then work on over all**

**additional lowering gradually, if necessary. © V. Terenina**

Check the dorso-palmar/plantar balance. The frog should bear weight (as much as possible). The angle of the coronary band will be 25–30 degrees most likely. Nevertheless, remember that this is not obligatory at all.

A normal angle may vary in a certain range. The main thing is that the angle of the coronary band is no more than 30 degrees! This may happen if the heels are lowered thoughtlessly. Make sure that the coffin bone is in the normal position and its branches in the heel area are not lower than the toe side when the horse puts his weight on the hoof.



**Fig. 7.12. An anomaly of the dorso-palmar balance. The horse has a “broken” angle of the pastern, the bones of the pastern enter the hoof capsule with a vertical angle. Coffin bone rotation (founder) is present most likely. © N. Bykova**





**Fig. 7.13. The pastern bones enter the hoof capsule vertically and the outer wall doesn't correspond to the angle of the coffin bone incline. The balance is distorted. Coffin bone rotation may be present. © N. Bykova**



**Fig. 7.14 a–b. Some dorso-palmar balanced hooves (the roll is needed). © T. Batalina, K. Kotzinyan**

**Q:** Should I try to achieve the balance in one trim? Or is it risky because joints may be effected by the imbalance?

**A:** Yes, you should try, but it all depends on the degree of the balance distortion and the deformation, the presence of pathological, degenerative processes, previous and chronic diseases, etc. The more neglected the problem is, the more it takes to treat it as the horse's body tends to adapt to the imbalance.

In some extreme cases it is contradicted to change the balance of the hooves mutilated by illness at all. In this book we are talking of healthy or comparatively healthy hooves.

Of course, if a horse has chronic syndrome of “uneven heels”, ossification and unilateral heel contraction, you shouldn't change the medio-lateral balance drastically. Often it is simply not possible any more.

In any case, the main thing for you is not to cause more problems and not to make the imbalance worse with your trim. The sole and the collateral grooves are your guides. If you follow them, it will be harder to make a mistake. Always measure the depth of both collateral grooves and make comparative analysis, comparing these measurements with the external looks of the hoof capsule.

You may see a tilted toe hanging in the air (if you are looking at the hoof from the side), don't be afraid, this happens all the time when the heels of the hoof with a low toe are lowered. If the angle of the coronary band is 30 degrees and the toe hangs in the air, the hoof was steep before the trim and didn't have enough toe height. Now the load is shifted backwards to the heels and the toe wall can grow normally.





**Fig. 7.15 a–b.** After lowering the heels and making the roll, the toe may be hanging in the air, it's normal. © Nevzorov Haute École





**Fig. 7.16 a–d. It is wrong to put these pictures to illustrate this chapter only. They suit every part of our book. Here you see the imbalance, the weak frog, the overgrown bars and heels and the stretched white line. In this example you can see how the overgrown and untrimmed heel and bar may make the wall of the hoof “shift”. The wall, of course, has stretched the white line. Also, look at how the sole is covered with the horn of the bars. The depth of the collateral grooves differs greatly. If this hoof wouldn’t be trimmed right now, the medio-lateral imbalance would turn into a real problem. The hoof will, so to speak, “twist” around itself, but right now it is yet possible to rehab it in one trim. © V. Terenina**



**Fig. 7.17. Stretched white line in the toe area. Coffin bone rotation. © N. Bykova**



**Fig. 7.18. This hoof possibly has its coffin bone positioned properly, but the shape of the capsule is unhealthy and the hoof needs a trim. © V. Terenina**





**Fig. 7.19. These hooves have terribly long toes. Of course, the toes should be rasped. In this case the toe should be shortened with the rasp perpendicular to the hoof capsule. © O. Akutina**





**Fig. 7.20.** This is an untraditional hoof type, but one can't say if there are any pathologies without looking at the sole. However, note the texture of the wall. © Nevzorov Haute École



**Fig. 7.21. A hoof of an Andalusian horse with somewhat high heels. © R. Zegelaar**



**Fig. 7.22. Distorted balance; the heels of the right hoof are a bit high. © V. Terenina**





**Fig. 7.23. An extended, overgrown toe. © T. Kallassi**





**Fig. 7.24. These steep hooves haven't been trimmed for a very long time.**  
© T. Kallassi



**Fig. 7.25. Terribly unhealthy, neglected donkey hooves. © T. Kallassi**





**Fig. 7.26. Obvious rotation of the coffin bone. Note that the angle of the coronary band is still approximately 30 degrees. © N. Bykova**



**Fig. 7.27. The heels of this hoof are enormously overgrown due to founder.**  
© D. McCormick





**Fig. 7.28. Distortion of the dorso-palmar balance; the coronary band is parallel to the ground. © V. Terenina**

## CHAPTER 8. STEP 6. TRIMMING: THE BARS

**Aim — to remove the discomfort caused by overgrown bars.**

The trimming of the bars is the most complicated and the most disputable aspect of all the trimming methods.

There is a standard which states that the bars should be straight, should grow at approximately a 60 degree angle, shouldn't stick over the hoof capsule and shouldn't be lying over the sole. Look at the photos of the wild horse hooves... They are not always perfect, but always have a good sole and, concavity and usually the "proper" bars. Domestic horses usually have a low coffin bone "seat", the sole is mostly thin with shallow concavity and if the bars are overgrown, the sole "yields" to them and the hoof gets into big trouble.

In truth, the bars are the subject of the contentious debates in trimming circles. One recommends to make them very short at first to let the hoof widen. Others, on the contrary, think that the bars should be left a lot higher than the sole level to make them bear the load during the stance phase. I stand firmly against any invasive ways of trimming and the more so against the cardinal trimming of the bars, but I also don't recommend leaving the bars at the level of the hoof walls. There is no universal advice. Different horses in different periods of their lives need different ways of trimming, but our main task for now is to do no harm.

The process of rehabilitation of the hoof takes some time — until the blood flow and innervation are restored and the heels are widened you should cut the bars the same as you would cut them in the healthy hoof. They should rise a little higher than the sole level. If the bars are badly overgrown (which usually happens when the horse was recently unshod or hasn't been trimmed for a long time) it is crucial to cut them down to the comfortable height immediately thus preventing them from curving or spreading over the sole.

So, if the bars of your horse's hooves don't stick up higher than the hoof walls after you've lowered the heels, if they are at one level with the sole or a little higher, just skip this step.

If you see that the bars are so overgrown that they are spread over the sole, a rehab trim is needed even if the bars don't stand higher than the hoof walls.

Often, after the heels are shortened, people tend to leave the bars too high (at the level of the hoof wall or even higher), so lameness occurs, and the blame is usually cast upon the new trim. These mistakes may be avoided easily. After the heels are lowered, put the rasp flatly on the hoof walls so that it would lie no less than 1 cm towards from the heels. The bars should not touch it.

**When the hooves take the correct shape (optimal for each particular set of hooves), the bars will take their natural position on their own. Before this they should be shorter than the hoof walls, so that in the stance phase on hard footing the bars won't bring any discomfort to the horse.**



**Fig. 8.1. If you remember anatomy well, the bars at the apex of the frog may confuse you, but the non-laminar bars can grow to the very toe melding with the solar horn. This is a problem hoof of a Bashkirian horse intended for meat. © N. Bykova**



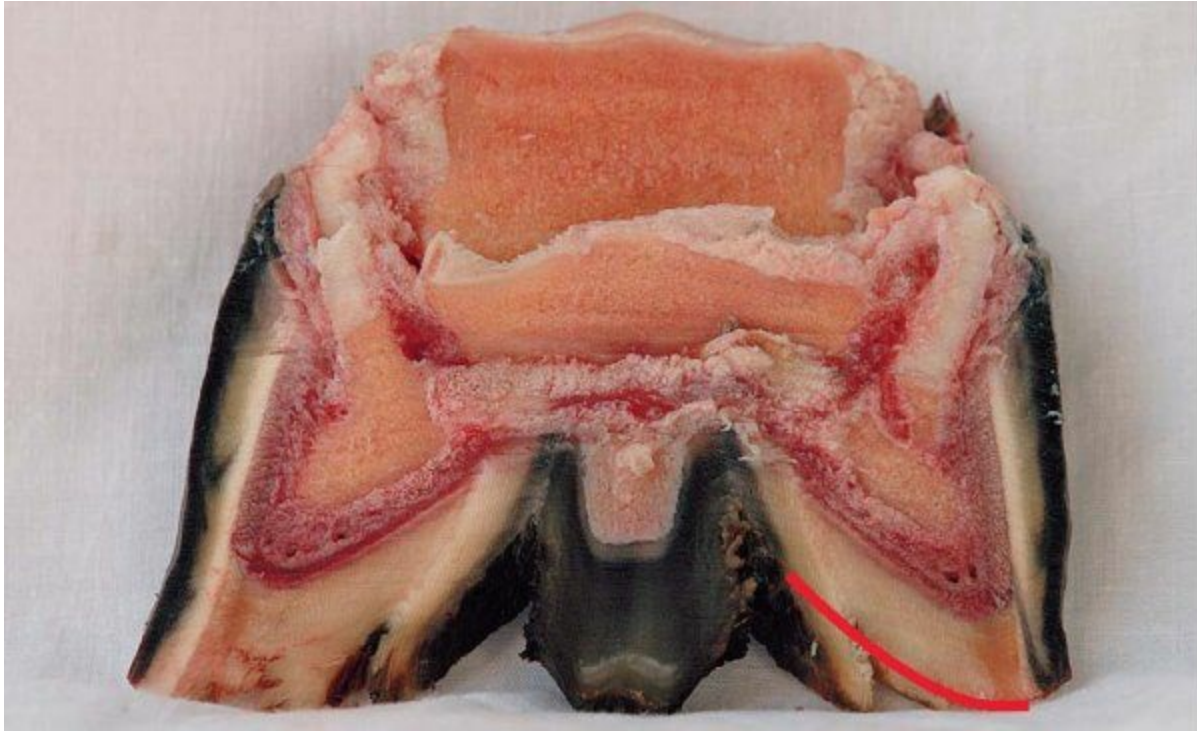


**Fig. 8.2.** The same specimen as Fig 8.1. Note how the walls had overgrown the level of the sole. Of course, the bars weren't able to wear away naturally. They should be cut down to the level of the sole at the apex of the frog, they have no need to protrude in this area (the red line shows how much of the horn can be removed). © N. Bykova

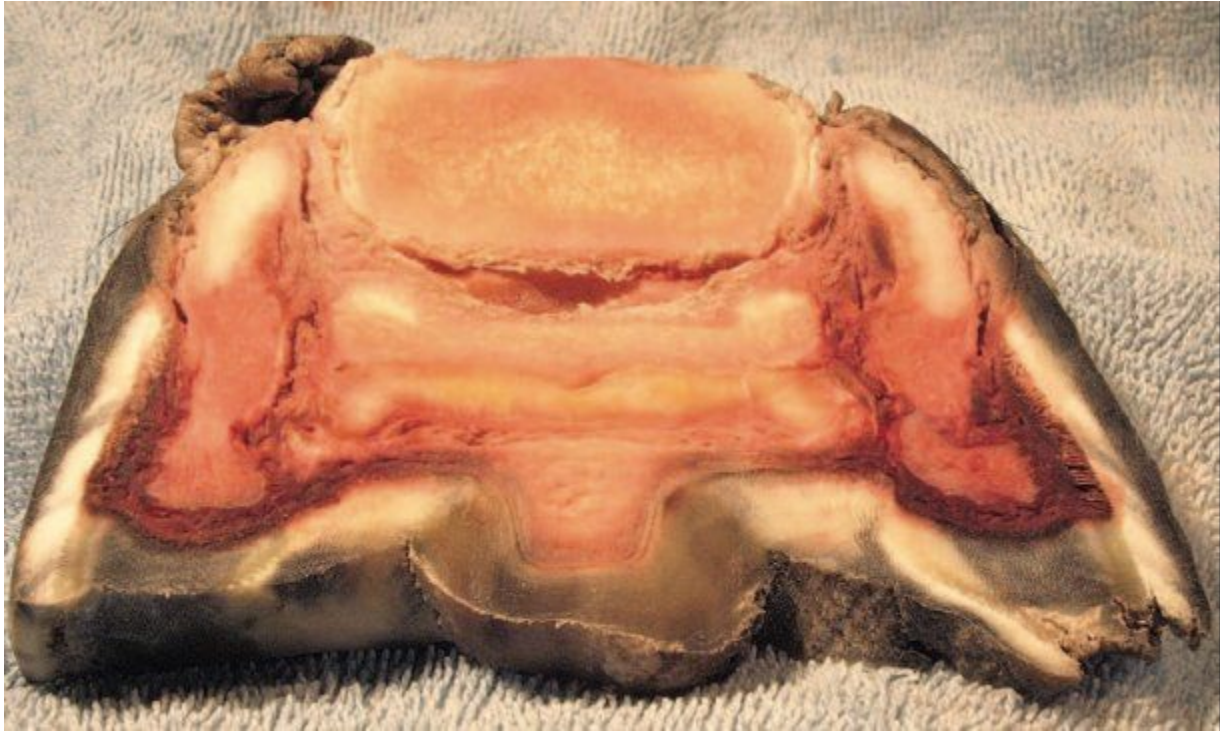


**Fig. 8.3. High concavity in a narrow hoof with a contracted sole. It is noteworthy because the bars have a different color than the solar horn and it is easy to examine their structure. They are not only badly overgrown, but also had shifted forward together with the heels. Note that the section is made in the middle third of the hoof, closer to the apex of the frog, there should be no bars here. The bars like this **SHOULDN'T** be cut away! The horn of the bars in this case is an integral part of the solar horn. It's not easy to define the level of the sole in the heel area because it is covered with the bars which are melded with the outer hoof wall. Note that the solar horn under the bar has some cavities. This horn can be removed easily with the hoof pick, but the heels should be lowered at first.**

© T. Batalina



**Fig. 8.4. A contracted hoof with deep concavity and a thick sole. Note the overgrown bars and the crack between them and the sole. The hoof height shouldn't be lowered, but the bars need to be cut down because they are at an inappropriate depth, have a too steep angle and they ram and squeeze the inner structures thus disturbing the blood flow which may lead to corium necrosis and navicular syndrome. The line indicates how the bar should be cut. © N. Bykova**



**Fig. 8.5. This is a flat hoof. On the right, the overgrown bar lying over the sole is left untouched, the hoof under it is exfoliating. On the left the bar is cut along with the sole. Speaking the truth, there should be a couple of millimeters more of the sole left, although the bar is of a correct height. © P. Laidely**



If you have to leave the bars level with the hoof walls (which is inevitable if the hoof has a weak heels and sole; in the case of chronic founder with a stretched white line, when the almost total removal of the toe edge of the wall is needed) the horse should live on soft ground only (rubber footing is perfect in this case), and the bars should be cut shorter as soon as it becomes possible.

If the bars of a horse who lives on soft footing are left long, they won't wear away by themselves. Due to the pressure, they'll change their angle and start to lie down on the sole thus traumatizing and displacing it. Such bars often have "scars" — bulging lines which remind one of the laminitic rings on the outer wall.

**Q:** How can I put the rasp to the two heels simultaneously if there is a frog between them?

**A:** When you are measuring the depth of the bars, you should put the rasp NOT to the heels, but to the area at the middle third of the frog where it should be at the level of the walls or deeper. In the heel area the frog should be at the level of the heels and bars or a couple of millimeters higher.

These "scars" form due to the unnatural pressure and inflammation of the bar laminae. Try to prevent such situations. Never leave the bars higher than the hoof wall level.

Keep in mind that the bar grows as fast as the whole hoof wall while the sole grows three times slower, so the horn of the bars could always "take over" the solar horn.

The common rule is: if you see that there is a need to lower the heels and the walls, then you probably need to trim the bars as well. If there is no need to trim the hoof walls, it is unlikely that the bars are overgrown.



**Fig. 8.6 a–b. Check: when you put the rasp across the walls, the bars, unlike the frog, shouldn't reach it. If the frog bulges so much that you still can't put the rasp this way, you may trim it a little so it would be at the level of the outer walls. © A. Oranskaya**



**Fig. 8.7 a–b. An after-founder trim. Note that the bars are almost at the level with the sole and the hoof walls. © P. Laidely**





**Fig. 8.8. Hoof # I. The overgrown bars spread over the sole, creating “pockets”. The bars should be cut to the normal height. © A. Nos**





**Fig. 8.9. This hoof is not bad, but flat. The white line has stretched; the bars have started to spread over the sole. They and the heels should be shortened just a little while the outer walls need serious beveling. © V. Terenina**



**Fig. 8.10 a–b.** The medial bar is too long and has already started to lie down on the sole. Heels and bars on both sides should be trimmed. © V. Terenina

## **THE BARS LYING OVER THE SOLE OR GROWN INTO IT**

If in your case the bars actually lie over the sole as shown on the pages 116–118, cut them down so that they don't stand higher than the hoof wall level. Your task for now is to provide the bars with the primary (rehabilitation) trimming.

If you've lowered the heels enough and the bars are now touching the ground, **trim them so that they are shorter than the outer wall and the heels.**

Your main guide is the dirt, black fissures in the bar area, sole angles and the white line of the bars. If you see none of these, it is dangerous to cut further!

If you see that the bar doesn't crumble, becomes cleaner and stronger, more "alive" — stop. You can always trim a little more the next day or the day after that. Measure the hoof once more.

If the bars DON'T TOUCH the ground during the stance phase, you mustn't trim them more FOR SURE.

The only exception where the "clean" elastic bars can be trimmed down is in the case of a rehab trim for the lowering of the total heel height in steep or club hooves, after founder or when the medio-lateral balance needs correction. (I don't recommend doing it without enough experience because it is an invasive trim.)

**ATTENTION!** If the hoof is badly contracted, if it has really high heels before the trim, if the frog is atrophied, there are abscesses and bruises in the area of the heel-bar "triangle", the bars should be carefully trimmed down, but **NOT TO THE LEVEL OF THE SOLE.**

It is necessary to leave them a little higher so that when the horse walks (on the recommended soft footing) the bars, but not the damaged sole, can bear the weight.





**Fig. 8.11. A hoof from a free roaming Bashkirian horse intended for meat. Note that the sole has no crumbling or flaking layer. The walls, the frog and the heels are badly overgrown, but the white line is strong and healthy, so the walls could have broken off to the level of the sole and the hoof would've been happily self-trimmed. Although the heels and the bars rarely crumble on their own due to their tough build. In this case it is hard to say what lies over the sole — the heel or the bar. They've just folded under the hoof, although the sole under them is healthy. On the right the heel and the bar are properly trimmed to the level of the sole. © K. Kotzinyan**





**Fig. 8.12. Another example of overgrown heels. In this case the walls in the toe and quarters areas hadn't overgrown the sole and wore down as they are supposed to. Nevertheless, the bars are so overgrown that they've started to displace the bearing surface of the hoof further in the direction of the toe. This hoof is not bad, the white line is perfect. In this case the heels and the bars are too long and high, the frog is infected. After the heel has been lowered, you can see that it is crooked because the horse had the long heels for a long time. The sole is unharmed and the bearing surface became larger and shifted backwards after the trim. The frog touches the ground now. (This degree of lowering was done for demonstration purposes only, such a trim is inappropriate for a live horse). © T. Batalina**



**Fig. 8.13. Medio-lateral imbalance, the left bar lies over the sole, the hoof wall has shifted sideways, they should be trimmed down. © E. Kasprova**





**Fig. 8.14.** The same hoof as in fig. 8.13. Note that the bar is ready to fall away (the over dried horn of the “dry” specimen). © E. Kasprova



**Fig. 8.15.** The heels and bars are so overgrown that they've started to create a false sole. © P. Laidely





**Fig. 8.16. The bars should be lowered, the solar bulge in the front of the frog apex shouldn't be removed but cut down if it stands higher than the walls after they are trimmed. © T. Batalina**



**Fig. 8.17. The bars spread ahead to the toe and soon will cover the whole sole. © V. Terenina**



**Fig. 8.18.** The lateral bar has already lay down on the sole. The whole “formation” of the heel has shifted because the heel hadn’t been lowered to the proper level for a long time. The medial heel and bar are within normal limits. © V. Terenina



Remember: if the bars don't let you trim properly (for example, they prevent you from defining the sole level in the heel area), you may trim them a little in the beginning of the trim as well.

**You should lower the bars' height so that they stand a bit higher than the sole level, are at the level of the hoof wall in the heel area and gently merge with the sole at the level of the middle part of the frog (see below).**

Look at the whole bar.

If it is badly crooked, overgrown and spread over the sole, cut it carefully with the hoof knife starting from the frog apex area towards the heels. Cut it until you remove the bar from the sole. Sometimes the bars are so large that it is easier to remove them with nippers.

**Q:** If the bars don't lie over the sole anymore and don't protrude over it, but are still "dirty" and "crumbly" — should I scrape the sole and shorten the bars, or this is a sign of some pathology?

**A:** You mustn't lower the bars at the expense of the sole thickness in any case. Let the thickness of the sole and the depth of the collateral grooves guide you. Of course, if you see blackness and holes even after you've rasped the heels down so that the collateral grooves are no less 1.5 cm deep and the sole still has fissures, you mustn't trim the bars any further. There are plenty of factors which can cause blackness: puncture wounds, corium necrosis, pressure traumas, consequences of abscesses, fungal infections, bar fractures (see chapter 4) and consequences of common rot caused by manure packed into the collateral grooves.

Be CAREFUL! Don't touch the solar horn! The sole under the overlying bar is very weak and vulnerable.

Learn to tell the solar horn from the bar horn (see above). Stop when the bar sits a couple of millimeters above the sole.

A "barefoot" horse wears the bars down on his own in a way that the sharp edges of the bars stand right above the sole. It gives a horse good traction on the ground. The bars don't need a trim if the horse moves enough to wear them down himself.



**Remember that the heels should always be at the level of the hoof wall.**



**Fig. 8.19. The bars are higher than the sole level but lower than the walls. In this case this is correct. © T. Batalina**



**Fig. 8.20. An excessive, criminal lowering of the hoof level from an invasive trim (the lower top half in the photo). The pinkish-violet spot on the sole is the corium seen through the horn. The only thing that really should have been done is the reduction of the overhanging bar. After that the hoof should have been left alone. © Nevzorov Haute École**

In the spot where the bars recede to the vanishing point, they should be approximately 1 cm lower (deeper) than the hoof walls (following the concavity of the sole), but not below the level of the sole. However, it's impossible in horses with a flat sole. The whole of their bars would be at the level of the sole and would be only 1–3 mm deeper than the heels and the hoof walls.

The bars should recede to the vanishing point (merge into the sole) at the middle of the frog length (coming from the heels).

**If you deal with a flat hoof with shallow concavity, don't touch the growths formed in the bar area and spread further to the toe area. Those are the non-laminar bars and they support the coffin bone. The bar horn can replace the solar horn in some cases. Nobody knows why these growths are formed, yet we can't state that they are useless.**

**The growths will disappear when the time comes, they'll simply fall away. Consider them to be the support of the weak sole.**

**Don't try to straighten the bars. Even if they are terribly crooked and curved, don't do anything except lower them to the proper level.**

(Eventually the hoof will take the normal shape and the bars will straighten. The bars become crooked because of long heels which the horse had for a long time.)

It is important that the bars don't squeeze the frog, don't grow vertically from the hoof's depths and don't spread over the sole parallel to it. They should have the angle of approximately 60 degrees. There is an opinion that the overgrown bars wedge in the corium of the frog and sole and squeeze them at every step which is painful and leads to inflammation, blood supply disturbances, coning and necrosis of the corium, and navicular disease, which forces a horse to spare his heels and to step toe first.

If the sole is flat, the bars would almost touch the ground. Don't try to cut them more so that they wouldn't reach the ground. You have a pathology on your hands and your task for now is to grow some sole so that the coffin bone will be lifted in the hoof capsule.





**Fig. 8.21. Use a hoof knife this way. Be extremely careful, do not touch the sole and do not hurt the level of the bars. © E. Kazmina**



**Fig. 8.22. The bars of this beautiful hoof have begun to spread over the sole. They should be trimmed. © F. Ivar**



**Fig. 8.23.** The shape of this hoof is typical for the Friesian horse. The heels and bars are lowered properly. © F. Ivar





**Fig. 8.24 a–f. Hoof #II.** As we know, this hoof has a medio-lateral imbalance. You might leave the bars untrimmed despite the fact that they are protruding and merge into each other in front of the frog apex, although there is a risk of soil getting under the bars, which leads to bruises, rot and breaking of the bars. We trimmed them so that they



wouldn't form a "pocket" under them and won't stand higher than the heels and the walls. © V. Schestakova, A. Oranskaya



**Fig. 8.25 a–b. Flat over trimmed hooves. The sole needs to grow in such hooves, and until then the bars should be a little below than the hoof wall (if possible). © A. Grigorieva**



**Fig. 8.26 a–b. Crooked bars. Don't cut them away. If you are handling the heel height and the toe length carefully, the bars will straighten eventually.**  
 © K. Kotzinyan, O. Shadrina





**Fig. 8.27. The heels and bars should be lowered. © V. Terenina**





**Fig. 8.28. Here is a hoof with many problems, including overgrown, broken and deformed bars© S. Day**



**Fig. 8.29.** This hoof is not bad at all, but it was trimmed to look “clean” without any purpose. There is no need to trim the hoof (including bars) this way! Those fissures along the bar are not an indication for a trim. © K. Kotzinyan





**Fig. 8.30.** The heels and the bars of this hoof should be lowered as soon as possible, the outer walls should be rasped and the frog needs some treatment. © S. Gorovaya



**Fig. 8.31. This hoof has a good protective layer of sole. Its bars are almost at one level with the wall, but there is no need to trim them yet. © E. Sakharova**





**Fig. 8.32.** The heels and the bars haven't been cut for a long time so they have begun to spread over the sole. © E. Kuzina



**Fig. 8.33.** These bars need shortening as well as the heels. Note that they don't lie on the sole but grow with a proper angle. Such bars and heels are not dangerous for the sole. They should be just trimmed down to the correct level. © E. Kuzina



**Fig. 8.34. This unhealthy hoof with a thin sole, contracted heels and rotting frog obviously tries to “replace” some sole using the horn of the bars. I don’t recommend removing it; it doesn’t bulge over the walls and brings no discomfort. The time will come and the hoof will free itself of this horn on its own. The main thing is to follow the rules of management and hygiene, to lower the heels and to shorten the toe. The main problem here is the frog. © T. Batalina**





**Fig. 8.35 a. Hoof #V. The solar horn is scraped with the hoof pick to uncover the bar and to see how much could be trimmed. © T. Batalina**





**Fig. 8.35 b. The close-up of the same hoof. Note the amount of solar horn under the bar that is easily scraped by the hoof pick. © T. Batalina**





**Fig. 8.35 c. The heel is lowered to the optimal level. © T. Batalina**





**Fig. 8.35 d. The close-up of the same area. Note that the bar is not trimmed yet, it stands higher than the sole. © T. Batalina**





**Fig. 8.35 e–f. Now the bar is cut properly so it doesn’t form any “pockets” underneath it. The horn of the heel and the bar stands slightly higher than the sole. © T. Batalina**



**Fig. 8.36 a–b. Hoof #III. You may recall that this hoof had badly overgrown heels and wall on the left side. We’ve removed it and have seen a crack which turned out to be a “fracture” of the bar. It is a “classical” fracture — right at the end of the laminar corium of the bar, in the area where the bars merge into the sole. The “fracture” occurred due to the incorrect load distribution. Don’t cut IT away under any circumstances. © T. Batalina**





**Fig. 8.37.** The overall height of the hoof wall and the heel height are normal, but the toe needs to be brought back. © A. Oranskaya





**Fig. 8.38. The sole of this hoof had been over trimmed in the past. The height of the heels is proper and the bars are crooked and spread over the sole. They can't be cut down now because there is nothing to cut actually, the bars are no higher than the outer hoof walls. © E. Demkovitch**



**Fig. 8.39. Criminal, “surgical” removal of the bars. They were simply cut away completely. It shouldn’t be done UNDER ANY circumstances. © Nevzorov Haute École**





**Fig. 8.40. A hoof badly contracted in the sole and heel area. The heels can't be lowered right now, although left and right bars could be trimmed a little. © T. Kallassi**





**Fig. 8.41** The heels are extremely contracted and high, the bars have started to cover the sole and obviously will need correction after the heels are trimmed. © A. Oranskaya



**Fig. 8.42 a–b. The hoof is really not bad. The frog is tremendous. Nevertheless, the bars are not only overgrown, but form a false sole. © A. Oranskaya**

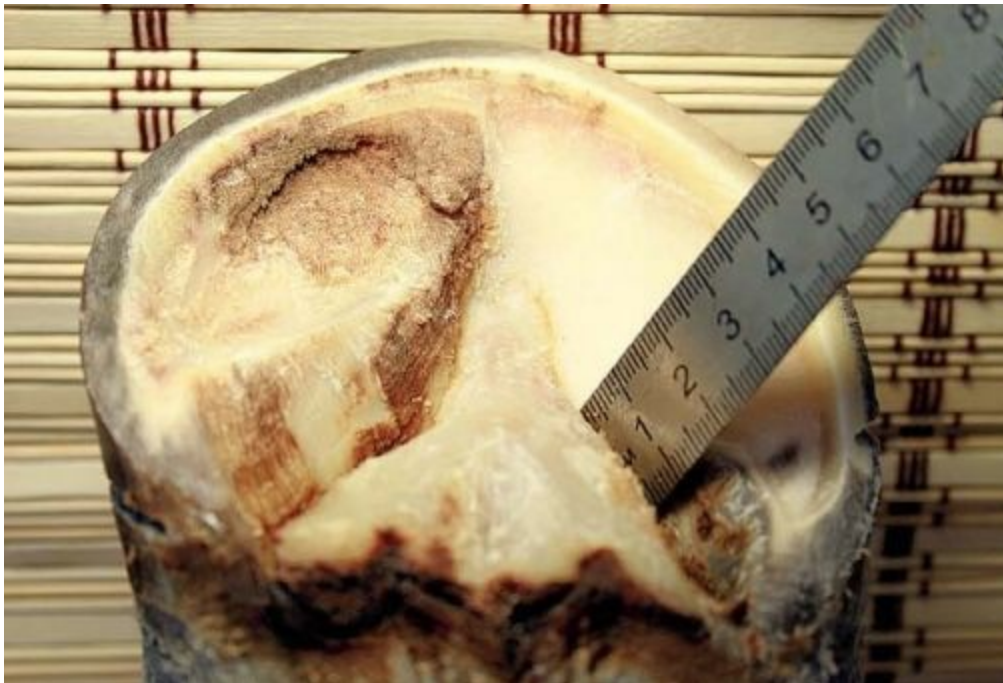
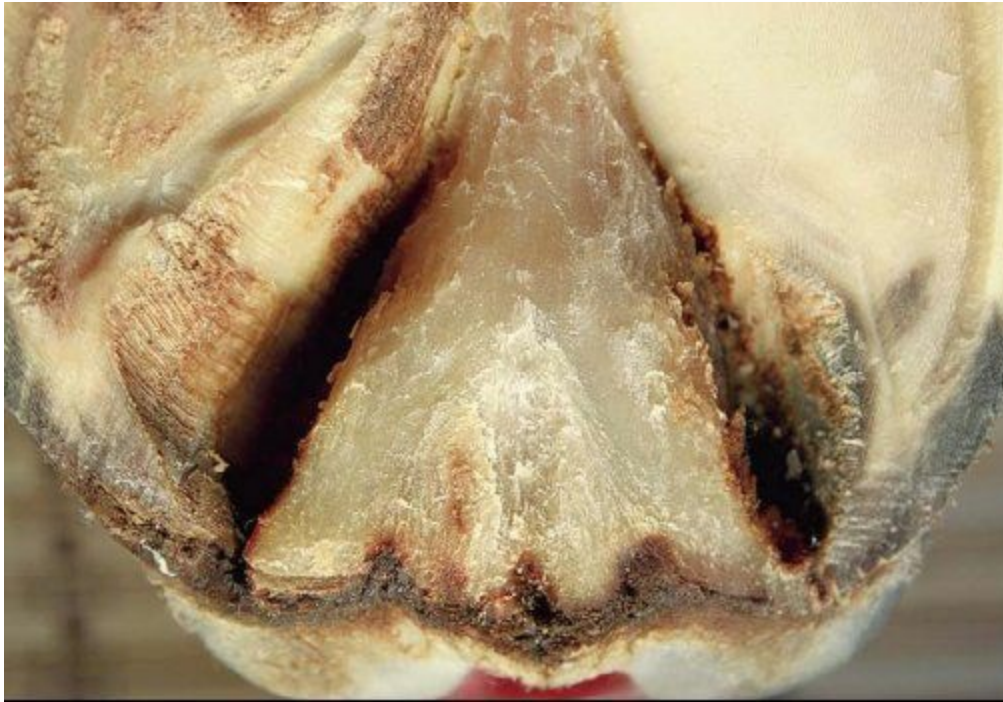




**Fig. 8.43 a–b. An overgrown hoof with a false sole before and after the trim which was, by the way, too radical. A sub-solar inflammation and necrosis of the corium have been discovered. It possibly happened because of the unnatural pressure on the solar corium provided by the bars which were at the level with the outer hoof wall for a long time. Note the black**



spots and the crack at the apex of the frog, they indicate the corium necrosis. © M. Patti



**Fig. 8.44 a–b. Hoof specimen #VI. Note that the sole in the heel area on the top photo has been scraped with the hoof pick. Bottom photo: the heel is cut down with the knife, the depth of the collateral groove is about 1.5 cm. The heels and bars have a pathological shape due to having had extremely high heels spread over the sole for a long time. © N. Bykova**



**Fig. 8.45 a–d. Hoof #IV before and after the lowering of the heels and walls. We’ve defined the level of the sole in step one; the heels were shortened in step four, and we’ve lowered the bars so that they stand just a little higher than the sole level. In the lower photos you can clearly see that the bars recede in the direction of the frog apex. We didn’t touch the heels while lowering the bars. They match the height of the hoof walls. © T. Batalina**





**Fig. 8.46.** This cross-section shows us how the bars look from the inside. ©  
P. Laidely



**Fig. 8.47. In this sagittal section (the section of the side wall) you can see how the heel looks when it's folded under the sole. The line indicates the level to which the heel should be shortened. © P. Laidely**





**Fig. 8.48.** The bar of this hoof was possibly injured or cut away which lead to the overgrowing of the heel and its folding under the hoof. The horn of this heel should be cut to the level of the sole. © P. Laidely





**Fig. 8.49.** The frog is good, but the bars spread over the sole should be trimmed together with the heels. © E. Kuzina



**Fig. 8.50.** The bars of this hoof have merged into each other in front of the frog. Their horn is so tough that it can hardly be cut by a knife. © V. Terenina



**Fig. 8.51. Over grown bars. One of them has started to lie down on the sole. © T. Batalina**



# CHAPTER 9. STEP 7. TRIMMING: THE WALLS

**Aim — to lower the height of the hoof capsule to the optimal level.**

If at this stage the hoof walls don't rise above the sole (and, despite all the instructions, almost all novices end up with it), you obviously don't need to lower the walls anymore. Although, if after the heels have been lowered the walls in the toe and quarters are still above the perimeter of the sole, they need to be lowered.

Look at the plane surface of the heels and compare it to the level of the quarters of the hoof wall and the toe area. Lift the foot as you did it to check the medio-lateral balance.

**Before you start to rasp down the hoof wall — find out if your horse's hoof needs scoops. (See the corresponding step 11). It may influence the whole strategy of the wall handling.**

You need to level the walls of the toe and the quarters with the rasp regarding the heels. You have lowered the heels already so don't touch them anymore when you trim the walls of the toe and the quarters. Heels are your guide now, when you rasp the walls in all the directions you may only slightly sweep the heels, but don't rasp them. Master this movement beforehand.

Work carefully. Don't scrape the sole and its toe area in particular when you rasp the walls. As soon as you get to the half-moon level in the toe area — stop, you mustn't rasp anymore.

The wall in the heel area should be at the level with the sole or a little higher and higher than the bars in any case. In the middle part of the hoof the wall should be a couple of millimeters higher than the sole level (so that you would be able to make scoops) or at its level (if you are not going to do any).

**The toe callus and the outer perimeter of the sole should be at one level**

**with the bearing surface of the hoof wall.**



**Fig. 9.1. This is a well proportioned hoof with no real need for trimming. The right bar could be checked carefully to make sure it does not protrude above the wall. © M. Sotnikova**





**Fig. 9.2. Hoof #III after the lowering of the heels and trimming of the bars. The walls should be leveled to the sole. © T. Batalina**



**Fig. 9.3 a–b. Hoof #IV. Top photo: after the heels and the bars were lowered. Bottom photo: after the hoof wall has been lowered to the level**

**of the heels and sole and the toe was brought back. © T. Batalina**





**Fig. 9.4. Don't scrape the sole when you trim the walls in the toe area. © F. Ivar**



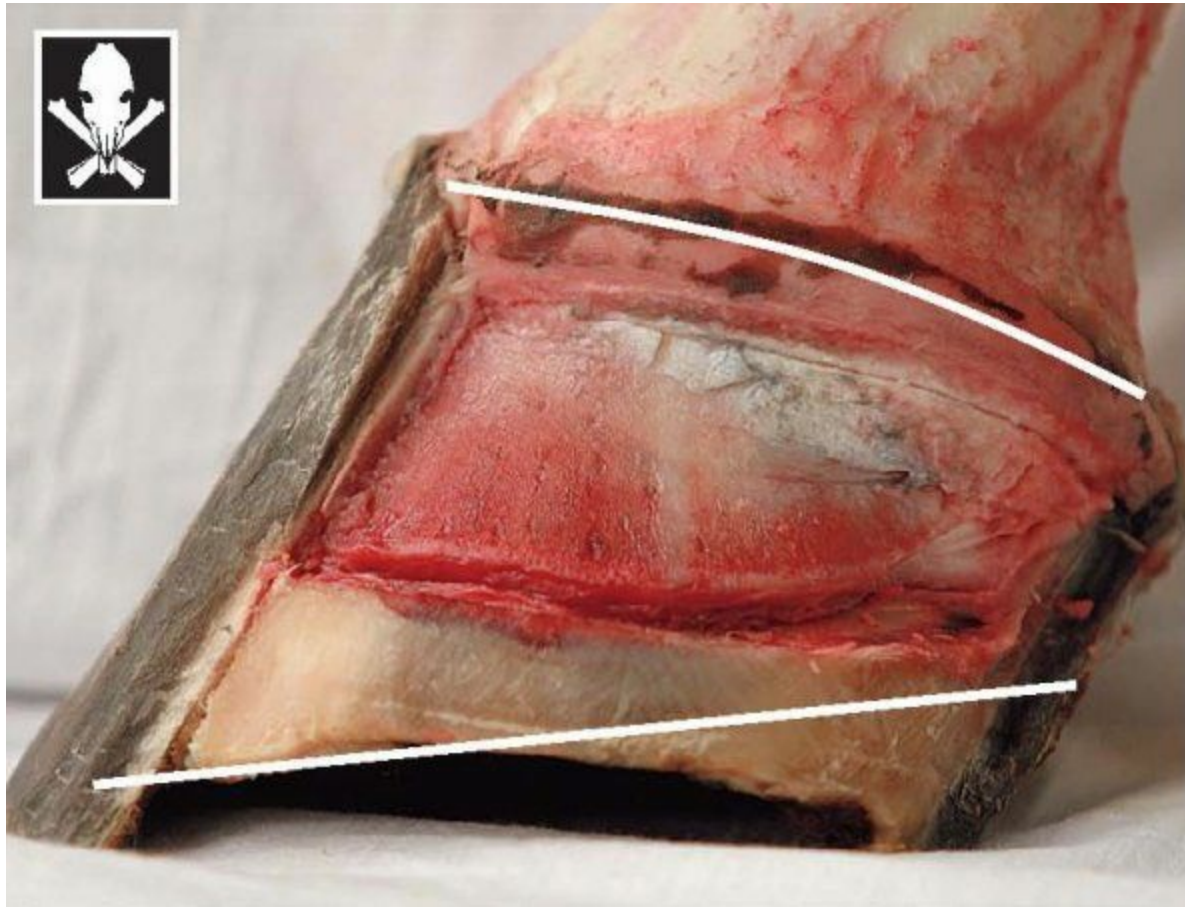
**Fig. 9.5. The correct wall trim. Check if the tip of the frog protrudes above the walls. © K. Kotzinyan**



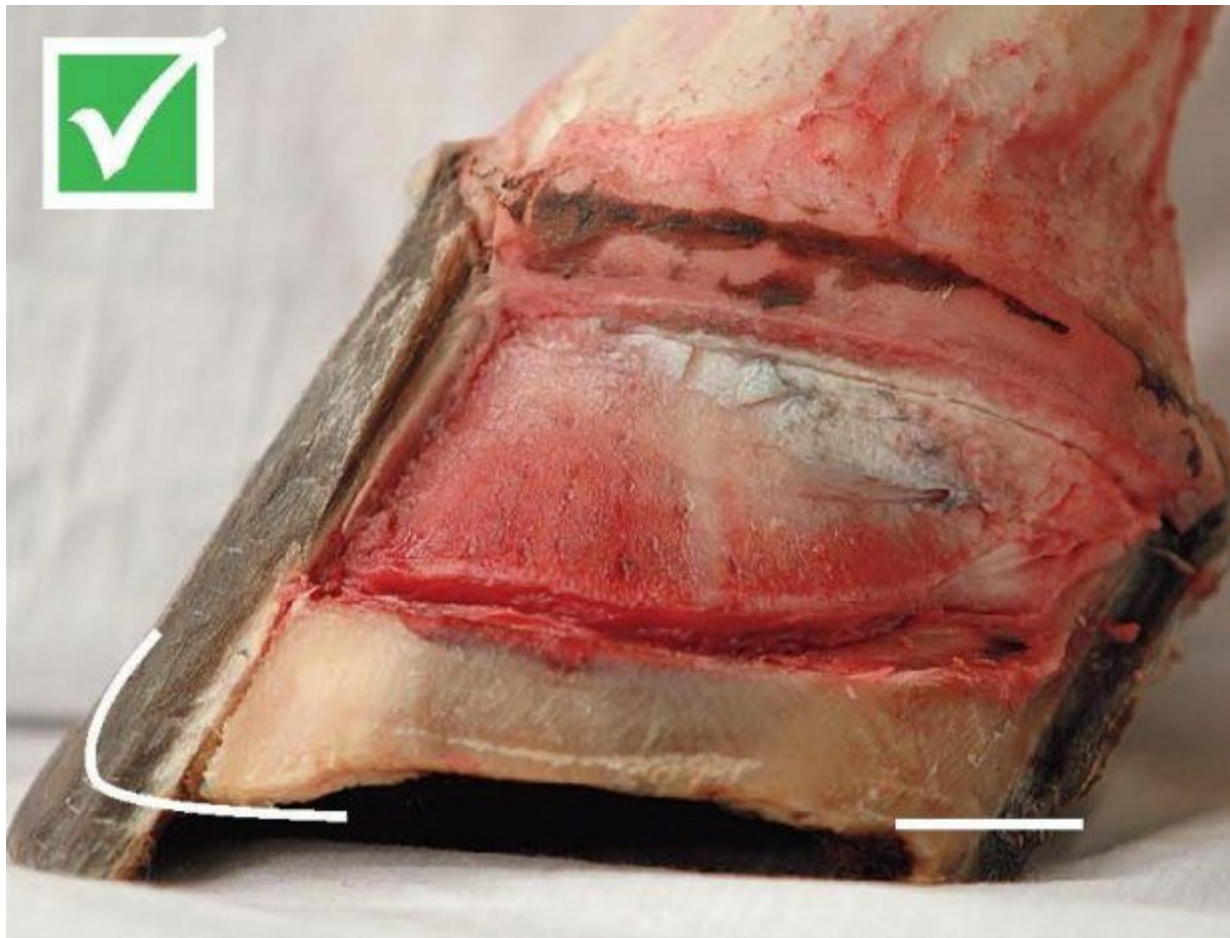


**Fig. 9.6 a–b. Leveling of the surface. The heels are severely lowered and the outer perimeter of the sole is rasped. This is a professional rehab trim, you better not trim like this. © P. Laidely**

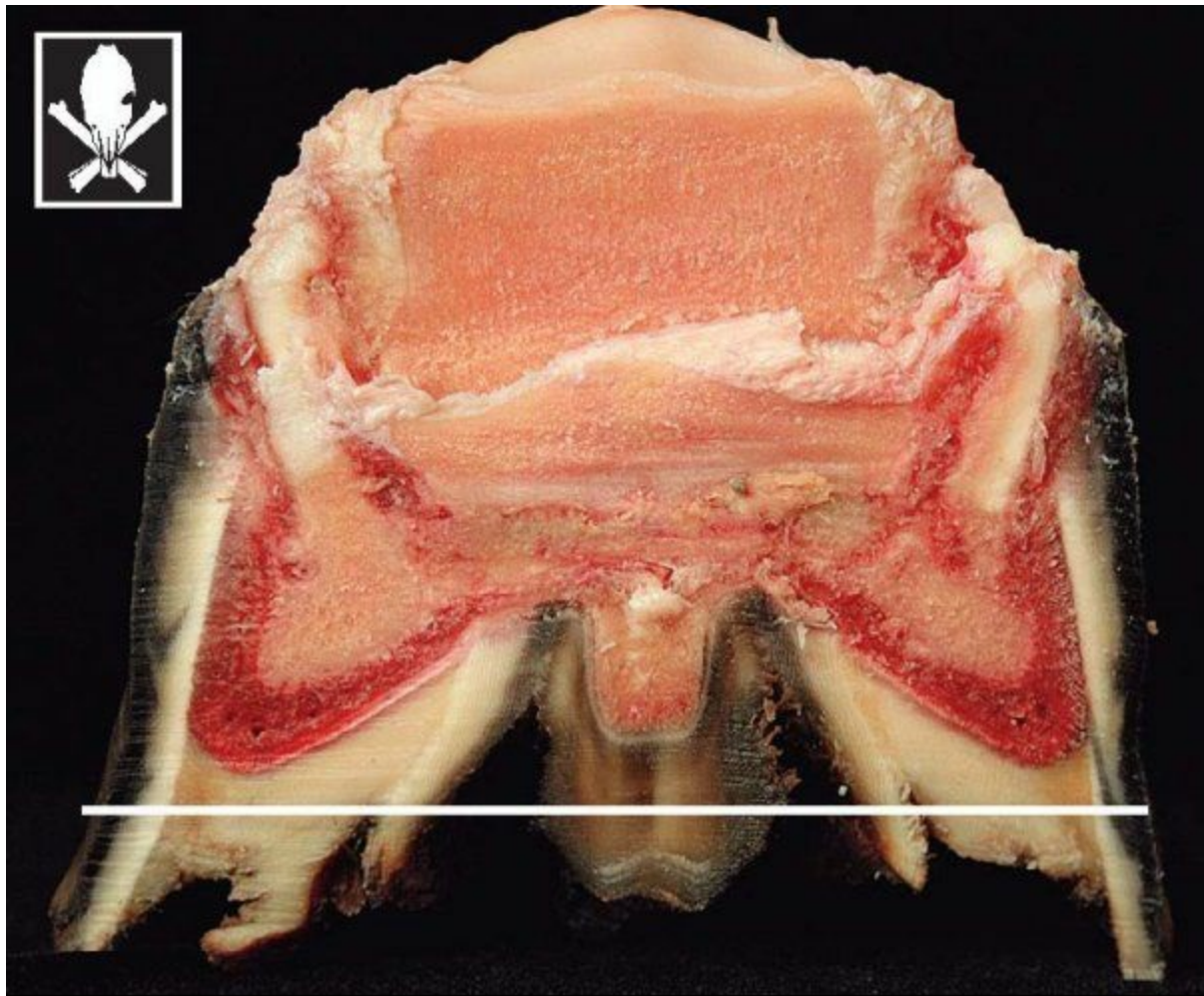




**Fig. 9.7. A thoughtless lowering of the heels when one tries to follow the “angle rules” may lead to the thinning of the sole down to the corium. © N. Bykova**

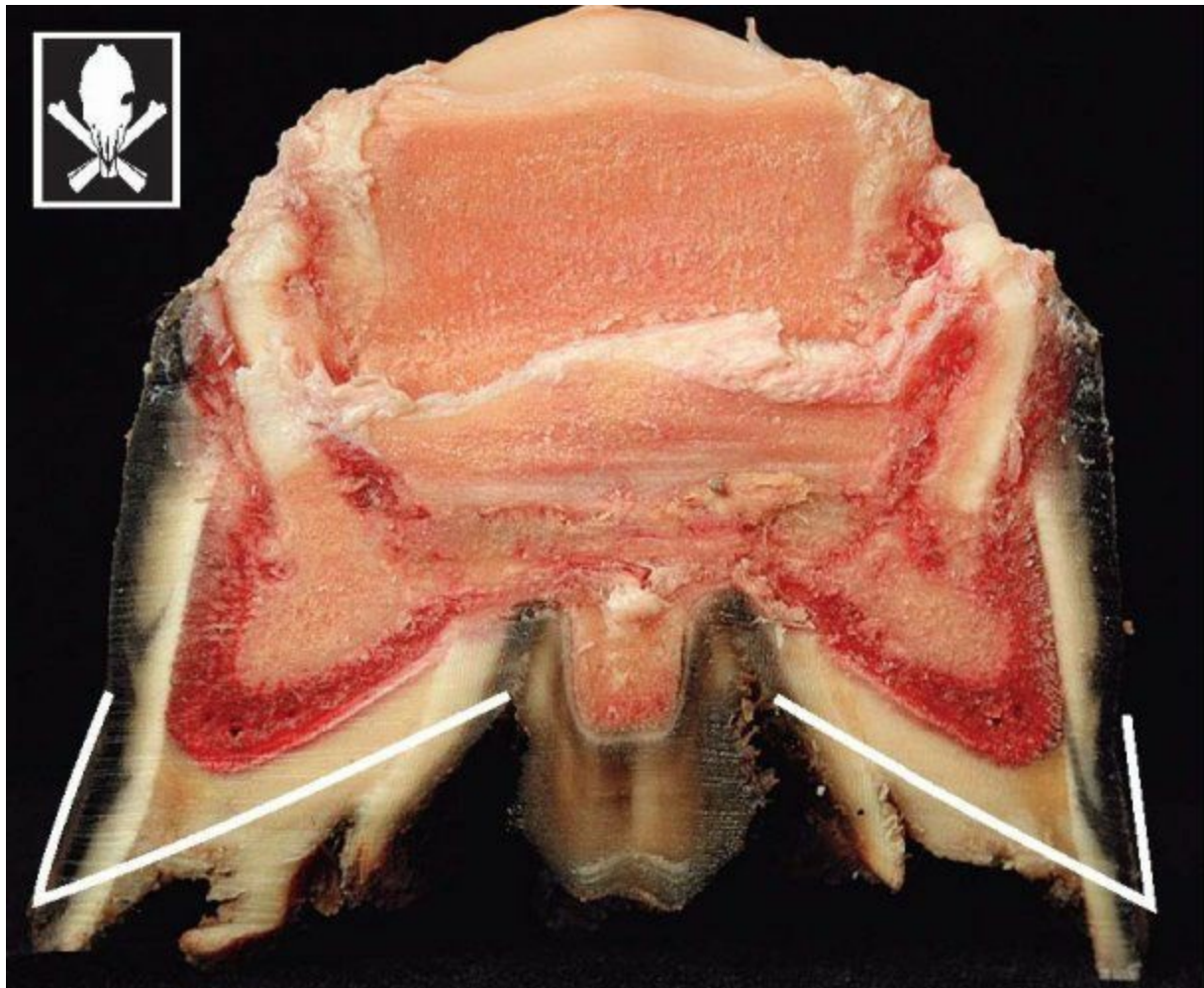


**Fig. 9.8.** The correct trim for this particular hoof. The sole is the guide, so with this hoof the angle of the dorsal wall, the angle of the coronary band and the heel height wouldn't fit the "standard". © N. Bykova

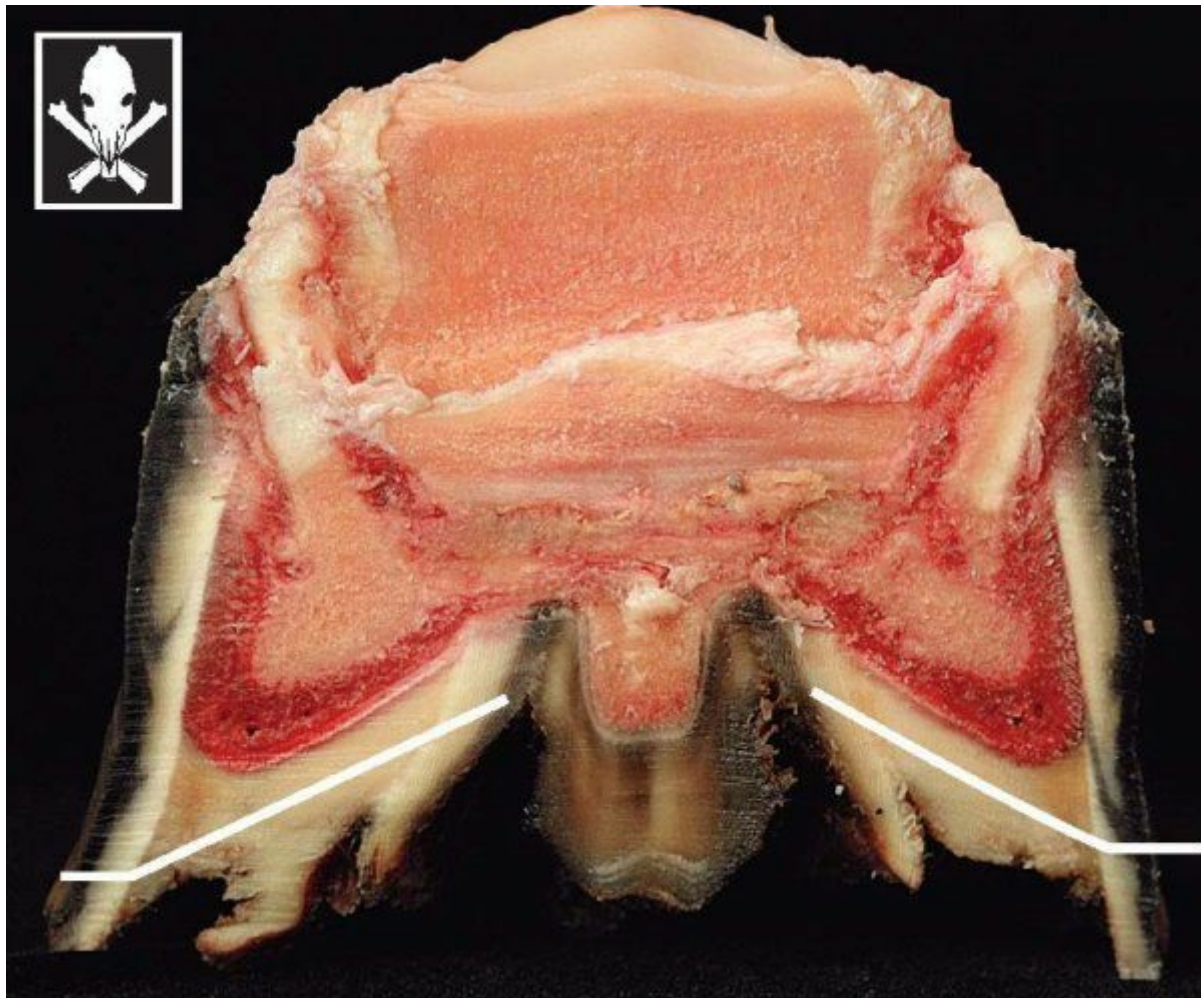


**Fig. 9.9. A typical incorrect lowering of the hoof height. If trimmed like this, the sole would be thinned almost down to the corium. © N. Bykova**

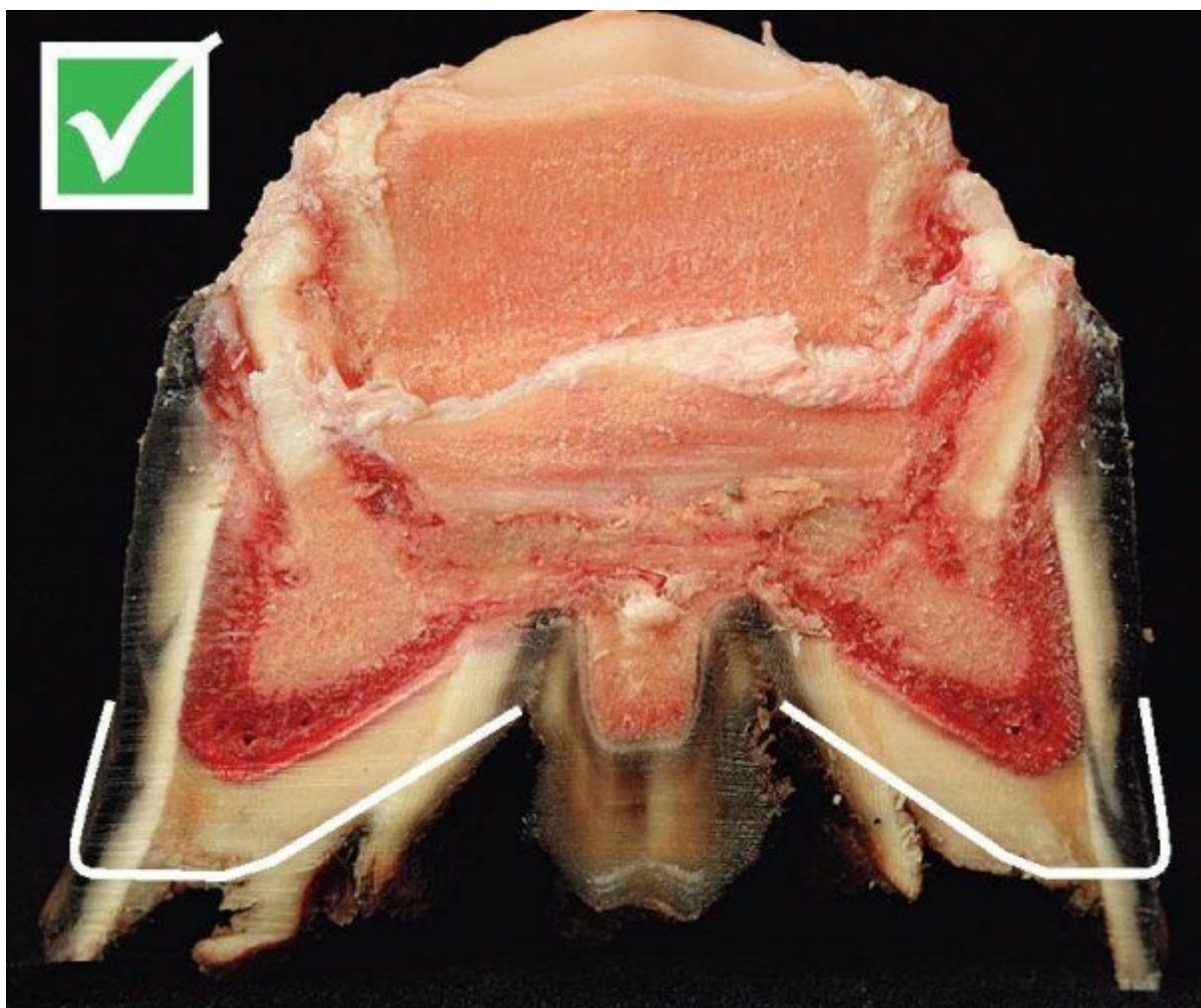




**Fig. 9.10. The illiterate trim: the sole is thinned, the walls are beveled and the load is distributed improperly. © N. Bykova**



**Fig. 9.11. Another incorrect trim. The sole is thinned; only the flatly rasped walls would bear the weight. © N. Bykova**



**Fig. 9.12. The correct trim: the sole stays untouched; the outer perimeter of the sole bears the weight together with the wall. © N. Bykova**



After the walls are rasped in all directions, they should be at one level (even). It's hard to achieve in the first trim so a couple of spare millimeters would do you fine — you'll be able to correct the wry places. If you use the level of the sole as a guide it will be easier to level the walls.

If you want to check if the hoof wall adjoins the flat surface, dab the solar edge of the wall with chalk or charcoal and press a piece of cardboard or Plexiglas to it. Check if the sheet is colored evenly.

Keep in mind that when the horse loads the leg, the hoof horn lowers and touches the ground even if the walls are trimmed unevenly. This is how the medio-lateral imbalance occurs. So if you want to put something flat to the hoof (like the sheet mentioned above) lift the horse's leg to do so.

**Remove the hoof wall very carefully and flat from the sole side. While rasping, go down to the level of the sole on its outline. Never touch the sole itself.**

Remember that the rasp should be put as flat (parallel) to the walls as possible: one wrong movement may ruin all your work.

You must remember that you shouldn't THIN the walls and reduce their bearing surface, so use the rasp in a way that will allow you to preserve the maximum thickness of the walls.

**Q:** What does the concept of the “one level” mean when we are talking of the evening of the hoof wall?

**A:** “One level” means that when you press something flat to the hoof walls, for example a piece of Plexiglas, the hoof wall should adjoin to it with all its perimeter. Your “glass” should touch the outer perimeter of the sole and the toe callus area as well.

If the “glass” or the cardboard doesn't lie flat on the wall, the overall level is not maintained.

At the same time, the surface of the wall and the solar edge should be adjusted to the medio-lateral balance.

**Q:** If the sole couldn't be totally scraped, some part of it with its bulges and flaking parts stays where it is, so it wouldn't be perfectly even all along. How could it be used as a guide to make the even hoof wall in this case?

**A:** Yes, the sole may be not perfectly even, but it mustn't bulge over the solar edge of the wall. The guides are the parts of the sole which don't crumble and flake — like the toe callus area and solar heel-bar triangles.



**Fig. 9.13 a–b. The untrimmed surface of the hoof wall. Now all the wall should be leveled with the sole (the heels and the right bar should be lowered a little). © V. Terenina**



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If the height of the hoof is low, cherish every millimeter of it.

Remember that not only the wall bears the load, but the toe callus and the outer perimeter of the sole as well (in domestic horse's hooves). We know that during the first or maybe several rehab trim sessions we leave the bars a little higher than the level of the sole for its protection and recovery.

Now, when the hoof walls are rasped almost to the level of the sole and the heels are lowered to the optimal height (currently), you may check the medio-lateral and dorso-palmar/plantar balance, gauge the angles, take a photo and have some rest.

If you feel that you're going to lose the last of your strength, leave the trim until tomorrow. Don't work if you're tired — you'll make mistakes... Yet, if you are still resolved, go on, it's not over yet.

While trimming the walls, watch for the dorso-palmar balance. Don't let the hoof "fall" onto the toe while you need to encourage height growth of the toe. This happens when the walls of the toe area are inadvertently lowered too much.



**Fig. 9.14.** While rasping the walls, remember that you should not only maintain the even surface, but not touch the sole as well. Often the aim of the trim is just to shorten the walls, like in this picture. There is nothing else to do here. © K. Kotzinyan



**Fig. 9.15. Perfectly evened walls, properly lowered heels and frog. This hoof has no stretched white line and no need for scoops, so the wall is even with the outer perimeter of the sole all along it. © K. Kotzinyan**





**Fig. 9.16 a–b. Properly lowered walls (the roll is not made yet). The curve in the quarters is made purposely — this is scooping. © O. Shadrina**



**Fig. 9.17 a–b. Part of the wall may be missing — flares, cracks, etc. Pay no attention. In any case, the main part of the wall besides the areas of these defects should be even. In this picture the walls are lowered properly, the**

**toe is not rolled yet. © O. Shadrina**





**Fig. 9.18 a–b. Badly overgrown walls. They should be cut to the level of the sole. The absence of the wall in the quarter doesn't imply further lowering of the walls to this level! In this case only the heels and the dorsal wall should be even and should bear the weight. The walls in the quarters wouldn't be loaded until they grow down. In this case it's perfectly normal.**

© P. Laidely



**Fig. 9.19. The lowering and the perfectly evened surface of the hoof walls in this professional rehab case. © P. Laidely**





**Fig. 9.20. Properly lowered hoof wall height; the hoof edge is not handled yet. © P. Laidely**



**Fig. 9.21 a. Hoof #II. After the heels and the bars are lowered, we are removing all the bulges of the walls making them even with the help of the rasp. © A. Oranskaya**



**Fig. 9.21 b. The walls bulge a little over the sole after being lowered. The right heel is a bit uneven. In this case it could be corrected. © A. Oranskaya**





**Fig. 9.21 c. We know that the sole is the guide and it shouldn't be rasped. Here the hoof walls are already rasped, the hoof is ready for the next step of the trimming. The frog in the heel area is bulging a little over the heel level, but we don't touch it! © V. Schestakova**



**Fig. 9.21 d. The walls are trimmed. Note that we've scraped the sole with the rasp (it has lighter — trimmed — color). It is not dangerous if only a micron-thin flake of the sole is rasped away, but you shouldn't do it on purpose. The area of the dorsal wall is higher than the other parts of the wall so the rasp simply hadn't reached it. We'll handle the dorsal wall later when we make the roll. © V. Schestakova**



**Fig. 9.22 a–b.** This flat hoof is not overgrown, but the hoof walls had shifted sideways dragging the heels along. The sole and the frog are thinned by the previous trims. The only thing that should and could be done now is the lowering of the walls to the level of the sole. © A. Grigorieva





**Fig. 9.23 a–d. Rasp the wall horn to the level of the sole. In the upper right picture the sole is scraped with the rasp (not badly), in the lower pictures everything is perfect. © Nevzorov Haute École, F. Ivar**

# **CHAPTER 10. STEP 8.**

## **EVALUATION OF THE WHITE LINE CONDITION**

**Aim — to learn how to detect white line problems and to choose the strategy for handling the hoof wall.**

There is one important circumstance you may encounter. It's the stretched white line.

The stretched white line is a very uncomfortable and painful condition. The main cause is laminitis — in 70 percent of occasions. The other 30 percent are stretches caused by imbalance or external mechanical stimuli. In any case the stretch may be complicated by infection.

### **The main causes of a stretched white line:**

- Earlier laminitis.
- Mechanical stimuli due to the hoof walls overgrowing the level of the sole (insufficient natural wearing, untimely trimming).
- Weakened or separated white line as a consequence of medio-lateral or dorso-palmar imbalance, i.e. the influence of unnatural forces occurring due to high or uneven heels, long toes, etc.
- Fungal or bacterial infections, unsanitary boarding conditions.
- Slow growing and/or bad quality of the hoof horn of the pathologic hoof (caused by insufficient blood circulation, i.e. — shoes, lack of movement, very soft footing, nail holes in the hoof wall, improper feeding, etc.), weak white line in artificial breeds.
- Unnatural loads, work on the hard ground, equestrian sports.

In any case, all the white line problems may be solved if the cause is removed, the proper shape and balance of the hoof restored and the horse gets normal

life conditions.

So.

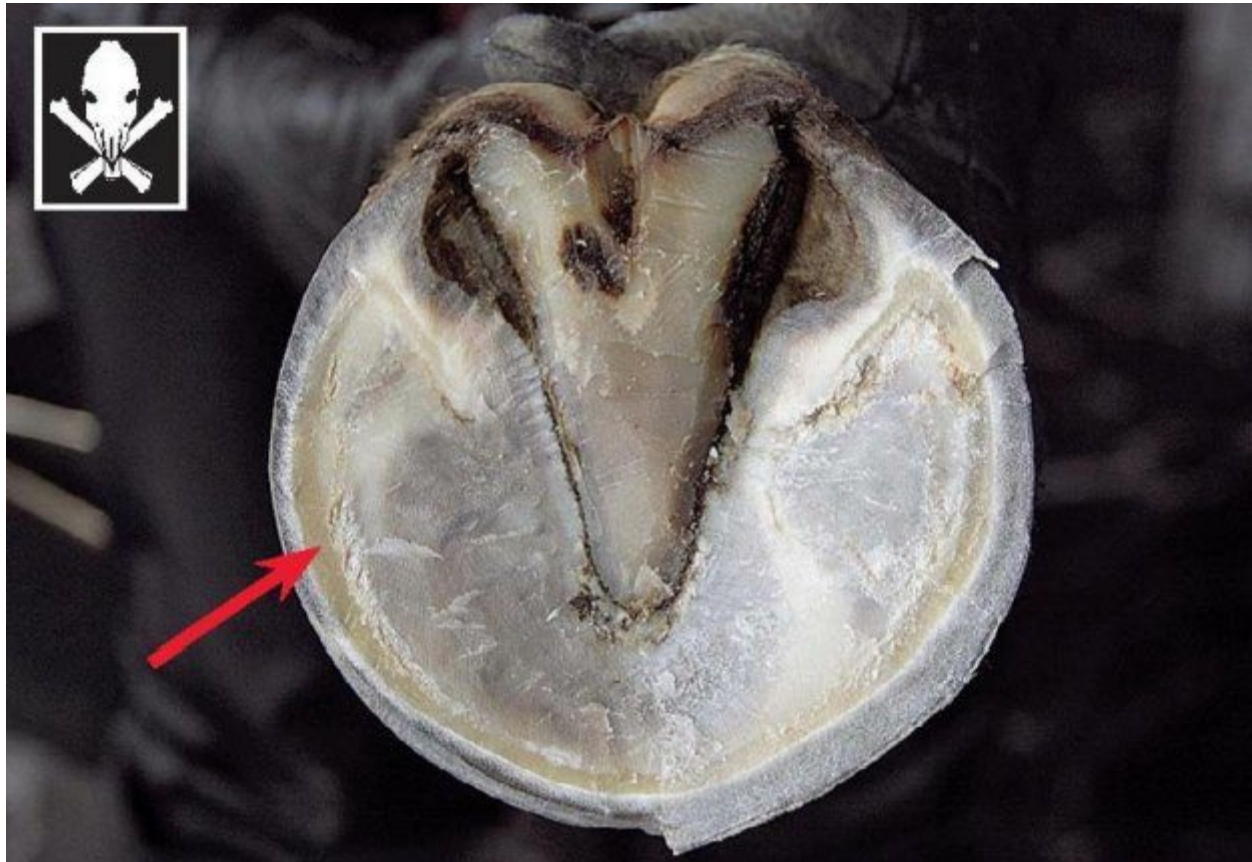
When you've trimmed the hoof and rasped the wall flat, before you roll the toe, look closely at the white line.

Find out if there are any flakes, or if it has a uniform waxy texture all along. The white line should be slightly yellow (gray) and elastic, it mustn't be more than 3–5 mm wide. Note that we are talking of the already trimmed hoof. Photos on page 139 demonstrate the untrimmed and trimmed looks of the white line.

If you find that the white line is loose and stretched, black or crumbling when you scrape it with the hoof pick or if there are rather big cavities between the sole and the wall, there are some problems for sure.

**The healthy white line of the untrimmed hoof may look a bit too wide and dirty due to the contact with an aggressive environment. If the hoof capsule has no notable outer flares descending downwards most likely there is no stretching of the white line or it is marginal. Although in some cases the white line may be of a very bad quality even if there is no obvious stretching.**





**Fig. 10.1. We've seen this Hoof #I before. It was trimmed for educational purposes. This is the way a healthy white line looks (only slight stretching in the quarters is present). On the left the toe wall was rasped correctly to the water line — the inner achromatic horn of the hoof wall. © A. Nos**



**Fig. 10.2. This hoof was notable by its thickened white line in the toe area (this is unusual stretching). © A. Nekrasova**





**Fig. 10.3 a–b.** First of all, learn to understand what the stretched white line is. Top photo: it seems that the white line is badly stretched. Hoof fanatics would trim to the bone if they'd see SUCH a white line — black and



**wide... On the bottom photo there is the same toe piece. It's clear that the white line is strong and tough in the sides and, most likely, only slightly stretched in the toe area. © N. Bykova**



**Fig. 10.4 a–b. Hoof #VII. From the outside the white line looks loose and black. Although, after the hoof wall has been rasped it is evident that the white line is healthy. © P. Laidely**



**Fig. 10.5 a–b.** Often while trimming the white line people forget that there is no straight angle between it and the sole, that, like the dorsal surface of the coffin bone, it has the angle of 45-55 degrees. In this photo (an atypical problem hoof) it's clear how thin the sole may be (just 0.4 cm) and how close the solar corium lies. In this hoof the toe wall should be shortened with the rasp moving perpendicular to the sole from the outside of the hoof



**capsule. The toe area shouldn't be trimmed from the solar side. (Of course, this is a specimen). © T. Batalina**



**Fig. 10.6 a–b. Obvious stretching of the white line in the toe area. This stretching may be very painful as the laminar connection is injured. Note the height at which the wall begins to separate from the laminae. © Nevzorov Haute École, M. Patti**

If you've found stretches and separations, you must find their cause first of all and check in which place the hoof wall separates from the hoof. To do this put the even surface of the triangle to the outer hoof wall. See photograph 2. 11a-f.

The healthy hoof wall should be even, without any dents and flares.

If the hoof has a “bell” shape a bad separation is present and immediate actions should be taken!

If the wall has a convex shape only on one side — it's the sign of medio-lateral imbalance.

Mark the place where the wall begins to separate from the hoof (see fig. 10.7). It's very important.

**Q:** Should I remove the wall until the white line fits the description, i.e. becomes narrow, yellow and tough?

**A:** Not always. The sole is your guide. At the level of the true sole the white line SHOULD NOT crumble and look injured. It must connect the wall and the sole firmly. If the white line is black and stretched and if you are able to take the crumbling horn out of it with the hoof pick, a problem is there for sure. It is difficult to say you should or should not remove the wall in this case. It depends on the depth of the damage, its cause and localization. You should understand that if the sole and the wall are overgrown, even the healthy white line may look lax, dirty and, possibly, a bit stretched due to “aging”. Yet after you remove the outer layer of the horn the normal yellowish and tough horn will appear. Look at the hoof from the outside. If the walls have no declinations from the straight line anywhere, the presence of a bad white line stretching is unlikely. The cleanness of the white line may not serve you as a guide, this is for sure. You mustn't over cut the wall to see the white line “clean and tough”.

If the “bell” shape appears only 1 cm above the hoof edge you can correct the situation easily by rasping the hoof wall horn in the area where the white line is stretched (vertically from top downwards, thus freeing it from the contact with the ground).

If the separation is chronic and begins very high (1 cm below the coronary band, for example) you'll have to fight the problem for several months by

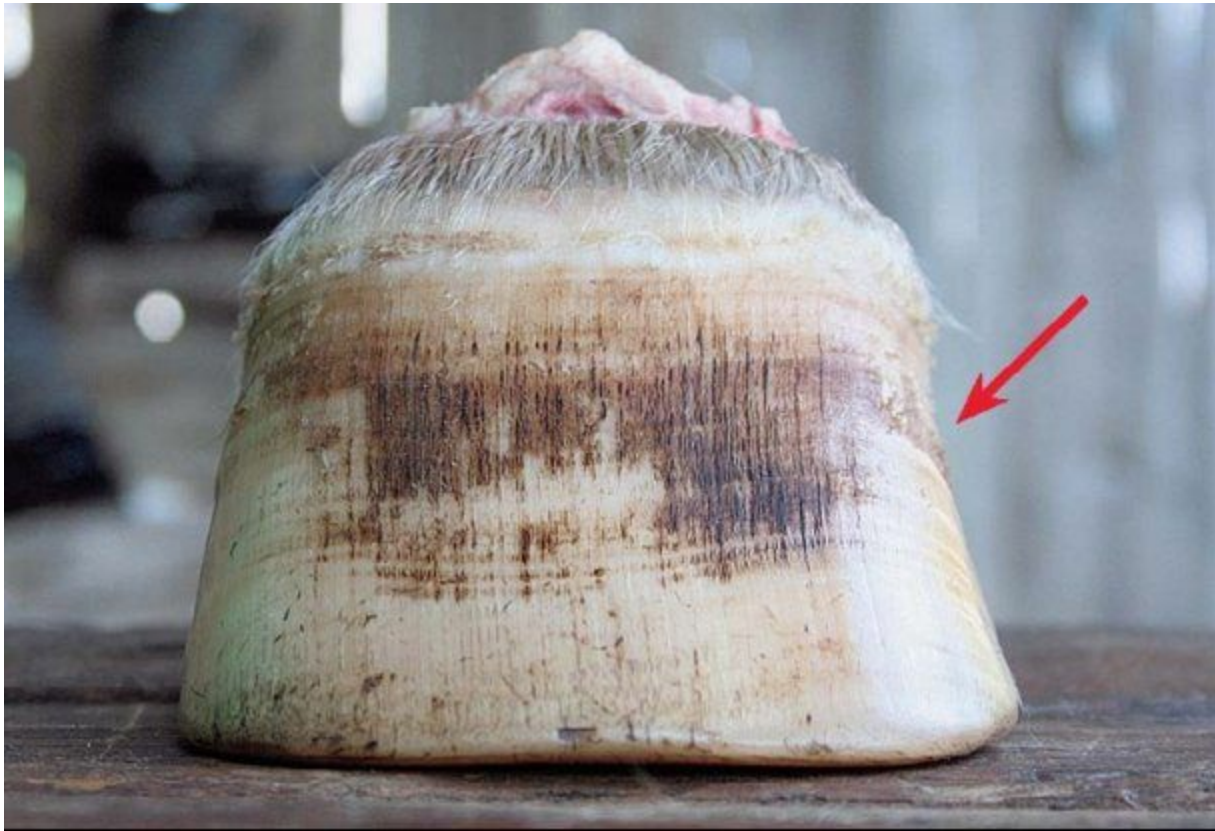


regularly trimming the hoof and following certain rules.

If the wall has completely separated from the sole along the white line and if the terminal corium responsible for the production of the white line horn was damaged, the structures and the horn production will take very long time to restore — a year or so. The proper care is the strict observance of the management and trimming rules.



**Fig. 10.7. “Bell”-shaped extension along the whole perimeter of the hoof.**  
© V. Terenina



**Fig. 10.8. Unilateral stretching indicates that one wall is longer than the other. In this case it's corrected easily. It seems that the medio-lateral balance is distorted marginally, the line of the coronary band is parallel to the ground. © T. Batalina**





**Fig. 10.9. Hoof #II. Unilateral stretching. Note that the line of the coronary band is curved. The hoof, so to say, “shifted” due to the medio-lateral imbalance. © V. Schestakova**



**Fig. 10.10. Imbalance and the stretching of the white line caused a dorsal crack. © S. Gorovaya**

**IMPORTANT!** To let the sole bear the weight of the horse it should be thick and rather strong during the rehab period. It should have a “callus” along the outer edge — a layer of solid compact horn. **You must not rasp away the walls to prevent the white line from stretching if the sole is weak and can’t bear the load.**

**So, you may find out that:**

1. The white line is clean and narrow all along. Its color is pure and clean (there is not stretching of the white line).
2. The white line is stretched only in the toe area (due to previous laminitis, a long period without a trim, fungal infection, dorso-palmar/plantar imbalance, etc.)
3. The white line is stretched only in quarters (it happens very often if a horse has had very high or long heels) or in one quarter, if the medio-lateral imbalance with or without the medio-lateral rotation of the coffin bone is present.
4. The white line is stretched almost all around, from heel to heel. (Evidence of previous laminitis complicated with founder or mechanical white line stretching. You must learn to distinguish these conditions.) In this case you mustn’t do anything without reading the recommendations on neutralizing the consequences of laminitis.
5. The white line may be simply absent; instead of it you may find cavities — deep crevices between the wall and the sole. In some cases when you look into such cavities with a flash light you may see something “alive and red” deep inside. Sometimes, after the destroyed tissues of the white line are removed, you may find a never-ceasing blackness or a stinky thick liquid, bloody issue. These are the necrotized tissues, exudate, etc., appearing due to laminitis complicated with founder. The cavities may be very deep and appear after a major necrosis of the tissues (the so-called empty wall). If you find something like this don’t do anything until you’ve read about laminitis!



6. The white line may be wide BUT dry, loose and consisting of disheveled tatters. When scraped, such a white line sheds chalky horn while the tatters partly stay where they were.

7. The white line may have bruises (may be colored). Bruises often appear in the toe area and are reddish, violet, brownish or yellowish in color. All these bruises are the consequence of laminitis or local inflammation of the corium of any given severity level. They may be found during the trim within a narrow and seemingly healthy white line.

Don't be afraid. It's too late... The bruises in the horn which have reached the outer solar level indicate that the inflammation HAD OCCURRED SOME TIME AGO.



**Fig. 10.11 a–b. Well callused toe callus (top) and sole on its outer perimeter (bottom). © S. Gorovaya, K. Toropova**



**Fig. 10.12. The callused edge of the sole and a normal white line. © A. Grigoryeva**





**Fig. 10.13. A normal hoof and a normal, yet not the tightest, white line. © K. Kotzinyan**



**Fig. 10.14. The toe stretching due to an imbalance (the toe is too long). © O. Akutina**



**Fig. 10.15. A stretched white line with a hemorrhage in the horn. © T. Kallassi**





**Fig. 10.16. The white line stretching in the quarters is connected to the overgrown heels. © E. Kuzina**



**Fig. 10.17. A slight unilateral stretching. © E. Kazmina**



**Fig. 10.18. Mechanical stretching of the white line due to the overgrown walls. © A. Oranskaya**





**Fig. 10.19. Minimal mechanical stretching of a normal hoof. © A. Oranskaya**



**Fig. 10.20. The consequences of founder, the white line is dry and damaged. © P. Laidely**



**Fig. 10.21. The consequences of founder-laminitis. © P. Laidely**





**Fig. 10.22. Black cavities in the place where the white line should be (the consequences of founder). © P. Laidely**



**Fig. 10.23.** The wall separates from the sole only as far as the width of the white line, but the horn of the white line is simply absent at the level of the sole. The hoof is flat; it possibly was damaged by laminitis. © Nevzorov Haute École



**Fig. 10.24 a–b. Such blackness is the sign of a previous corium inflammation, these are the necrotized tissues of the thinned sole. Most likely, an inflamed sore was there. © E. Demkovitch**





**Fig. 10.25 a–b. Previous laminitis. Top photo: a stretched, dry and disheveled white line. Bottom photo: a compact one (a keratinous wedge with traces of a hemorrhage). © P. Laidely**



**Fig. 10.26 a–b. Bruises in the white line. © P. Laidely, T. Kallassi**

Be extremely careful when trimming the toe area. Of course, FIRST OF ALL, ALWAYS MAKE SURE THAT THE HORSE ISN'T LAME AT THE MOMENT and has no other signs of acute inflammation in the hooves.

8. You may find strange distortions of the white line contour as well (see fig. 10.27–10.28) and small black holes, usually in the toe area. These are keratomae or the keraphyllocele (horny pillar). If you find such holes, do nothing about them; just respect the toe area because keratomae form after various injuries.

Horses who have been shod with clipped shoes for many years are at risk. Make a radiograph which will confirm the notch in the toe area of the coffin bone (bone lysis) or the keraphyllocele (don't mistake the normal anatomical notch of the coffin bone edge for any of these).

9. In the case of chronic founder you may find no distinct white line due to the disturbed process of the horn production. You may find a “laminar” or “keratinous” wedge instead (the strongly overgrown compact horn filling the areas damaged by founder-laminitis. The laminar wedge may be several centimeters wide). In the case of the laminar wedge it is difficult for the non-professional to find the precise border of the white line, the wall and the sole.

The trimming of such hooves differs from the usual one so the non-professional shouldn't do it.

A radiograph is obligatory.

So, if you see the signs of laminitis, necrosis, keraphyllocele, etc., make a radiograph and read the special literature, etc.

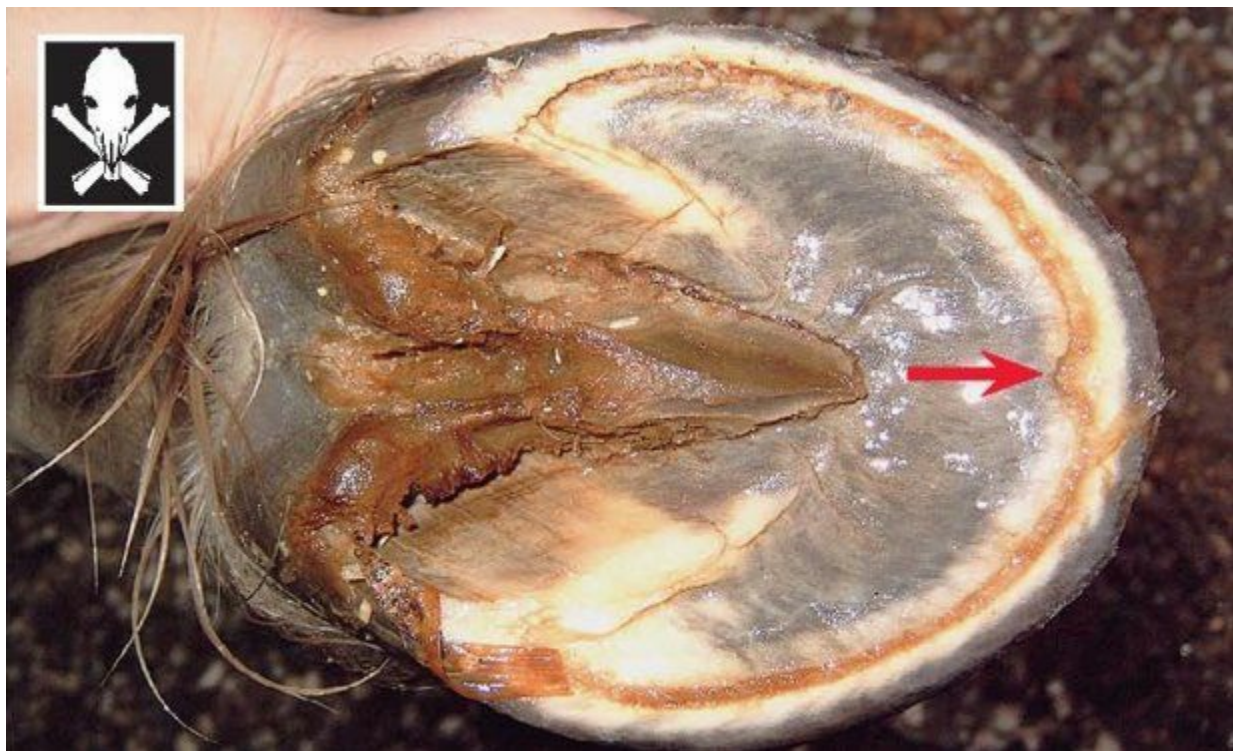
If there are no flares, you are lucky: you may proceed to the steps “Scoops” and “Roll” or just leave the horse be for today and watch his condition.

If there are flares, we must proceed to the next stage.





**Fig. 10.27 a–b. Top photo: a hoof after founder-laminitis with sole perforations; bottom photo: a hoof with traces of inflammation and necrosis of the solar corium. © P. Laidely, I. and Y. Novikov**







**Fig. 10.28 a–d. The keraphyllocele in the toe area (upper row) is easily taken for the different inflammations, necroses and abscesses (lower row), which often appear in the white line and predispose the keraphyllocele. © E. Demkovitch, A. Grigorieva**





**Fig. 10.29 a–b. The laminar wedge may mislead you. © A. Nos, P. Laidely**

**Q:** I've lowered the heels as you've advised, corrected the bars and the frog. Everything looks not bad; it seems that I've managed to maintain the balance. Yet I feel that the toes of the front hooves are too long now. Should I leave them as they are and see how they react and continue to trim in a week or so?

**A:** What do you call the "long toe" (see the hoof measuring parameters scheme)? Do you mean the length of the dorsal wall, the length of the sole from the frog to the toe or the toe height (the vertical line from the coronary band to the ground)?

If you've evened the walls to the level of the sole there is nothing to worry about. Check the balance, make sure that the coronary band line is not slumped, make the roll, i.e. rasp the toe wall from the top down and thus shorten it if you feel that it's necessary.

## **THE PROBLEM OF THE WHITE LINE STRETCHING IN THE QUARTERS**

This issue will be solved quickly if you lower the heels, thus removing the lever forces which make the wall separate from the hoof. This kind of stretching is the lesser of all the problems. The main thing here is to remove the load from the wall in the stretched white line area.

If you lower the heels sufficiently, the abnormal forces will be neutralized and, most likely, the stretching in the quarters will go away by itself in some time. Of course, you'll have to maintain the balance going forward.

You'll only have to wait till the new horn of the white line firmly connected to the wall and the sole grows.

So if after the heels are lowered and the balance is restored you see the stretched white line in the quarters, these areas of the walls should be:

- left alone — if the wall is weak, the sole is thin and the concavity is shallow;
- scooped — if the main points of contact are strong, the sole is firm and the wall is higher than the sole;
- relieved by rasping them from the outside top down at the angle of 90 or 45

degrees — if the wall is strong, the main points of contact are good, the sole is nice and the white line in the toe area is firm.

If you trim for the first time in your life I don't advise you to cut or to rasp the flared or separated wall from the sole side. I'm not sure if you would be able to do it properly — without lowering the priceless total hoof height and without injuring the sole.

It's better to rasp it from the top down (or sideways) from the outside of the hoof to relieve the wall in this area. The depth of rasping depends on numerous things.

If the hoof wall has overgrown the sole all around, you may lower or scoop the walls in the quarters as it's described below.





**Fig. 10.30 a–b.** The coronary band line is parallel to the ground and perpendicular to the metacarpus, yet the lateral wall has shifted causing a bad mechanical separation of the wall along the white line. If you look at this hoof from the sole side, you see the blackness and the cavity. This condition is curable. You just need to lower the heels and the separated wall with one of the methods listed below. © V. Terenina



**Fig. 10.31.** This hoof is not bad, the walls are “sprawled”, but it’s easy to return them to a normal condition. From the look of it, the hoof has been exposed to the aggressive environment of the box stall for a long time. © A. Oranskaya



**Fig. 10.32. Our good acquaintance hoof #II before the trim. There is a slight unilateral stretching (medio-lateral imbalance) which is easy to correct. © A. Oranskaya**





**Fig. 10.33 a–b. An example of stretching (flares) in the quarters. The walls have separated because of the high heels which improperly distribute the load forward and sideways. It would be impossible to remove the stretching of the side walls without lowering the heels. © V. Gridasova**



**Fig. 10.34. A proper yet a bit overdone scoop to remove the load from the stretched white line. © E. Esina**



**Fig. 10.35. A scoop which is “dangerous” to the toe height. Such displacement of the scoop may be approved only by the need of relieving the wall in the case of stretching. © E. Kazmina**





**Fig. 10.36 a. The rasping of the wall from the top down in the case of flares in the quarters. © A. Oranskaya**



**Fig. 10.36 b. A scoop made from the sole side with the knife. © A. Oranskaya**



**Fig. 10.37. A unilateral flare caused by an old imbalance and, possibly, the sideways rotation of the coffin bone. Correction of the balance should assist in solving this problem. © O. Grishko**





**Fig. 10.38. A minor stretching which needs no cardinal wall removal. Yet the wall could be rolled from the outside. © E. Kazmina**



**Fig. 10.39 a–b. Bilateral stretching ONLY in the quarters is rarely dangerous. In this hoof the walls should be lowered to the level of the sole and relieved by rasping the outside edge. After the rasping it turns out that the stretching is not that terrible at all. © A. Grigorieva**

**Q:** While watching the work of many “natural trimmers” I can’t quite get why they sometimes remove the flaking horn from the outside of the hoof. Doesn’t this weaken the protection of the wall horn? Is it caused by the forced rarity of the trims where the new area of stretching grows to the solar level and the mechanism of the forced separation of the horn connections goes on? If I can remove a small amount of horn daily as it grows, maybe I should rasp a little of the horn which reaches the ground without weakening the protection of the hoof wall?

**A:** You are absolutely right. If you can avoid the violation of the integrity of the hoof wall — do it. If you can rasp the growing wall little by little every couple of days — proceed this way. Yet, talking about such professionals as Laidely, keep in mind that he mostly trims severely damaged hooves, often with chronic founder. He deliberately rasps the wall high. Thus he removes the “laminar wedge which prevents the production and growth of the normal healthy hoof wall horn. He removes the horn the way that helps to restore the shape and the proportions of the healthy hoof so it would get the proper load and start to break over where it should. He rasps only the horn which protects nothing. Yet, you shouldn’t do it on a healthy hoof.

## **THE PROBLEM OF THE STRETCHED WHITE LINE IN THE TOE AREA**

If the white line is stretched in the toe area, there is a serious possibility it's the consequences of laminitis, chronic founder with the laminar wedge, etc. Although, it could just be simple stretching, probably complicated by a fungal infection.

This is a very painful condition which is a separate topic, for now I’ll just say briefly what to do if you see such a problem in your horse’s hooves.

There are a few methods. We’ll choose the simplest one.

### **Attention!**

Remember that you can relieve the wall from the ground contact only on a small section. For example, you may lift the wall only in the toe area if the sole is well prepared and callused.



To remove the load from the hoof wall and thus preventing it from separating further you have to rasp it so it won't touch the ground. This will relieve the load which leads to the mechanical stretching of the wall.

Rasp the wall horn from the top downwards, try to remove it back to the stretched white line. Work extremely carefully, don't touch the sole, in the toe area in particular!

To provide the horse with comfort, you'll have to decrease the load carried by the wall and the white line to prevent further stretching. Although a horse would have to walk on the toe callus, it's less painful and less harmful than the walking on the stretched white line.

Your aim is to prevent the wall from separating further and to let the horn (which forms the white line) become strong again. Put the hoof edge into a healthy rounded shape if possible.



**Fig. 10.40 a–b. Make some preparatory markings: how much should you rasp away and to which area. Remember that it's ill-advised to bevel the wall from the widest part of the hoof backwards to the heels. © P. Laidely, A. Oranskaya**



**Fig. 10.41. Hoof #II. Rasp the toe from the top downwards. The arrow indicates the place where the hoof wall is relieved. © A. Oranskaya**





**Fig. 10.42. Typical lesser stretching. Although when the toe area is stretched one must consider the possibility of previous laminitis and its consequences. This hoof should be trimmed extremely carefully. © O. Andreeva**



**Fig. 10.43. Imbalance.** The walls of this weak hoof are a bit overgrown; this is unacceptable. There is a stretching, but it can be corrected if the balance is set properly. © E. Kazmina





**Fig. 10.44.** The narrow white line of this hoof looks healthy, but note the proportions of the hoof. There is a possibility that the white line is just covered with a thin layer of the sole. The toe should be scraped to find out the white line's width. The balance should be corrected with the roll. © A. Oranskaya





**Fig. 10.45. This stretching is corrected easily. It was caused by the overgrown walls and the distorted balance. © E. Kuzina**











**Fig. 10.46 a–c. If a horse doesn't let you lift his leg for you to rasp do it this way, right on the floor. © F. Ivar**



**Fig. 10.47. Does this hoof have a stretched white line? Yes. And the consequences of laminitis with coffin bone rotation. The first centimeter below the coronet tells us that the coffin bone is turned vertically. The dorsal wall is not parallel to the coffin bone and the toes are too long! They should be rasped (shortened) from the outside. © F. Ivar**





**Fig. 10.48. We'll shorten the toes this way, right on the floor as the horse has a problem with standing on the three legs due to the previous laminitis.**



© F. Ivar



**Fig. 10.49. Look at the length of the toe after it was shortened. In this photo you can clearly see the angle of the dorsal wall. This hoof will take tens of rehab trims to become healthy again. © F. Ivar**



**Fig. 10.50. The dorsal view of the hoof after the toe wall was rasped. © F.**



**Ivar**

# CHAPTER 11. STEP 9. TRIMMING: THE HOOF EDGE

**Aim — to give the hoof the shape of natural wearing and to prevent possible chips, flares, splits and white line stretching.**

I hope that at this stage you are aware of how much of the hoof wall horn you should have removed in the toe area, so just place the hoof on the hoof stand and start to create the roll carefully from top downwards.

Roll the outer edge of the wall at the angle of 45 degrees to the hoof wall, don't touch the glazing higher than 1 cm above the edge and don't try to round the walls from the sole side. Make careful movements while rolling the wall to the unpigmented layer of the horn wall (NOT TO the white line).

Although, if you have no hoof stand you can make the roll from the sole side. Hold the rasp the way it's shown in figs. 11.3 and 11.12. You may hold the rasp horizontally or vertically, but move it from down topwards, from the hoof wall surface to the sole, and NEVER MOVE THE RASP FROM TOP DOWNWARDS (I have to remind you here that here we are speaking on the hoof "facing" you with its sole).

Work with the fine side of the rasp to take away only what you need to. Put the triangle to the toe wall to see it is at 45 degrees.

After the rasp you may use a sterile sandpaper on a cloth base. Buy it at the local tool shop. Fasten it to the special base and work ALL the hoof edge until you feel the soft, gentle roll without any burrs. Burrs lead to small chips. Yet, you can manage with the fine side of the rasp.



**Fig. 11.1. Hoof #II. Applying the roll. Try to rasp the horn from top downwards, but not “simply” straight. Imagine that you follow the shape you are trying to create, i.e. make smooth movements and direct your rasp downwards and under the hoof. It’s perfect to make the roll on the hoof stand, or you can use your own knee. Thus you won’t touch the sole. © A. Oranskaya**





**Fig. 11.2. Hoof #II. The very edge can be rasped this way (sidewise) with the rasp held horizontally along the solar surface with the angle of 45 degrees to the wall. © A. Oranskaya**



**Fig. 11.3. Hoof #II. If there is no hoof stand and if you are afraid of rasping too deep, work the dorsal wall from the sole side. Hold the rasp at the angle of 45 degrees to the sole. Don't touch the sole. © A. Oranskaya**



**Fig. 11.4. Hoof #II. This is how the trimmed toe wall should look if the white line is stretched. The wall is rasped away so that it would make no ground contact, i.e. the toe callus would bear the load instead of the wall.**  
© A. Oranskaya





**Fig. 11.5.** In this perspective the dorsal wall is almost invisible. The white line stays untouched. © A. Oranskaya



**Fig. 11.6. The toe wall is rasped at the angle of 45 degrees no more than one centimeter higher than the hoof edge © V. Schestakova**



**Fig. 11.7. Another perspective of the properly trimmed dorsal wall. © V. Schestakova**





**Fig. 11.8. The hoof should look something like this after the hoof edge is trimmed. © V. Schestakova**

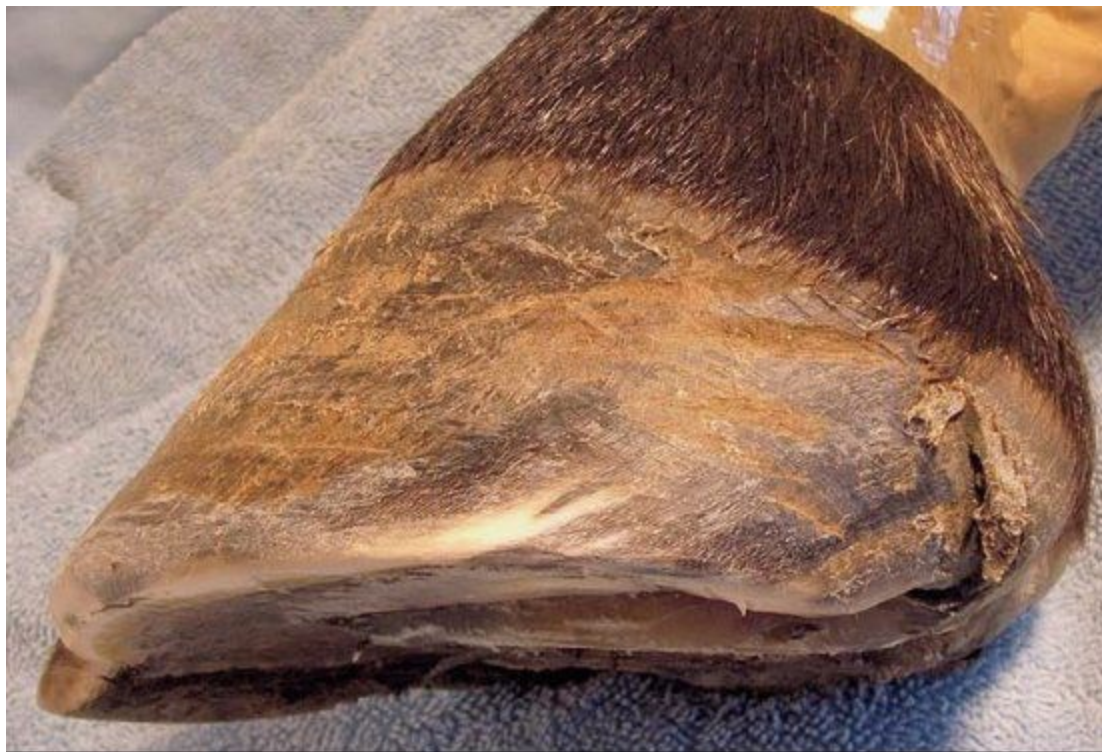
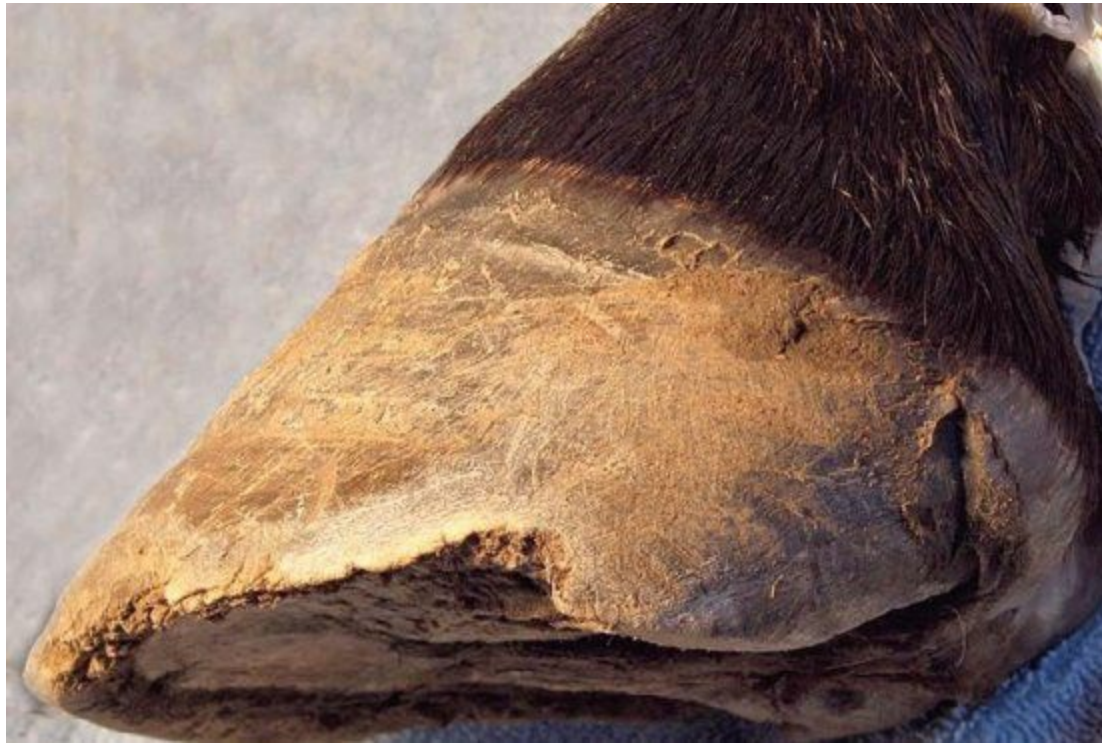


**Fig. 11.9 a–b. Hoof #II. The wall in the heel area is separated and can chip at any moment. We are beveling the edge to relieve the wall to alleviate this problem (it's better to hold the rasp with its blunt end to the toe and to use the fine side). © V. Schestakova**



**Fig. 11.10 a–b. Hoof #II. Trimming the wall from the top down. Working the edge from the outside to create a bevel in the flared area, thus mitigating the lever force by relieving contact with the ground, not unlike bringing back and rolling the toe. See Fig. 11.29. © V. Schestakova**





**Fig. 11.11 a–b. Hoof #VIII. Minor chipping; these walls are badly overgrown. In the bottom photo the wall is trimmed properly (the far half of the hoof is not trimmed). © P. Laidely**



**Fig. 11.12.** Here the white line is sound; the photo demonstrates the way of making the roll on such a hoof. © T. Batalina





**Fig. 11.13.** Always keep this picture in mind. Remember that when you are rasping the solar edge of the hoof wall at the angle of 45 degrees, there is a risk of reaching the corium. Always turn the hoof and look at it from the sole side, make sure that the sole stays untouched. © A. Nekrasova



**It is considered that a sound horse walks on the water line of the hoof, yet such a trim is contradicted to a domestic horse with shallow concavity, weak sole and stretched white line. Our aim is to preserve as much of the hoof's bearing surface as possible, of course, not arguing with the rules of physiology.**

A narrow hard hoof does not give enough shock absorption.

**ATTENTION!** If a hoof is comparatively healthy without obvious pathologies, bevel only the forward part of the walls.

**Never roll the walls in the heel area. Roll them only in the toe area of the hoof.**

The area of the hoof edge in the “heel half” of a sound hoof **SHOULD NOT** be rolled to the water line.

The exceptions are: beveling when the white line is stretched, missing part of the wall horn in the side areas.

In these cases **ONLY** the side walls are relieved, not the whole hoof wall.

If the hooves are balanced, step heel first, without white line stretches and chips, the “roll” can be made minimal in its width.

Yet, if the white line is badly stretched along the whole perimeter, you may have to trim the greater part of the wall. **You can do it only if you are sure that the sole can bear the weight of the horse.** It should be prepared for this! The toe area and the outer perimeter of the sole should be callused; otherwise the weak sole won't endure the load which will lead to bruises, corium necroses, abscesses, etc. In such cases the parts of the wall should be relieved gradually, **in turns**.

For example, at first you relieve only the toe area, then, after the sole in the toe area is naturally callused, you may relieve the side walls, but very gradually. I remind you that we are speaking of extreme cases when we have to trim the

hoof with a completely ruined white line. Such trimming may be used only in abnormal cases.

If the horse mostly walks on soft footing and has a stretched white line, the simple bevel of the wall at 45 degrees may help to improve the white line condition sufficiently, as with every step — dipping the hoof into the soil — the hoof walls would be pressed to the hoof with the soil instead of being separated from it.

So, during the first trims rasp only the toe edge of the wall or the part where the stretching is most severe.

When the sole in the toe callus area is callused well, you may address the edge of the walls further in the heel direction (if there would be the need).

Remember that the stretched white line can't be removed in one trim — don't expect an instant result.

Yet, if the approach to the problem solving is correct, you'll see the improvement very soon.

If you are dealing with severe stretching don't try to solve the problem in one day: rasp away little by little every other day, do everything gradually.

**Don't lower the wall with the rasp if you are dealing with the consequences of the recent laminitis — or, if you must, use a very sharp and quality rasp and make a small amount of sure and productive movements.** The rasp causes a vibration which may injure the sensitive tissues, so it might be better to use the knife instead of the rasp.

In horses who have suffered laminitis or in horses with chronic founder often the total removal of the bearing surface of the wall in the toe area is done instead of rasping. The wall horn is cut away with a knife or with nippers so it won't bear any load.

In the case when you are fighting the stretching of the white line it is important to shape the hoof the way it could look if it would be sound.

If the coffin bone is unstable in the hoof capsule, the process of rasping may lead to another laminitis attack.

For faster rehab calculate where the rolled area should be if the hoof was

sound and make the roll in this area if possible, but don't force anything. Still, you shouldn't rasp the sole! We are talking of trimming the wall only.

In the hind hooves the roll is made to correct the balance — usually minimally.

Healthy hind hooves always step heel first and the roll quickly forms there on its own.





**Fig. 11.14. This is how the wall should be trimmed if the white line is stretched -to the very white line and the sole, but WITHOUT TOUCHING it. This is a specimen, there is no stretching in this hoof and the sole is not ready to bear the load. © A. Nos**



**Fig. 11.15. The over-trimmed hoof. Note how the wall is rasped. First of all, there is no sense in rasping the wall like this with the white line so tight, second, the sole has been touched which is completely inappropriate.**  
© O. Grishko



**Fig. 11.16. A weak hoof. The toe wall is rasped conservatively so it would have no ground contact. After the toe area of the sole and its outer perimeter are callused, the wall in the toe area could be rasped more. © T. Batalina**





**Fig. 11.17. A flat hoof, likely post-laminitic. Note the curve of the dorsal wall — it indicates the stretching of the white line. The toe wall should be rasped to the white line. The heels, probably, could be lowered, possibly, to the level of the frog which is not bad at all. © S. Ponomaryova**



**Fig. 11.18. The walls of the right hoof are almost trimmed. © V. Terenina**





**Fig. 11.19. The walls of this normal hoof are over-rasped. (Too far back with no obvious reason). © K. Toropova**





**Fig. 11.20. The properly trimmed walls in the case of a stretched white line. The flares are rasped, the walls are relieved to prevent further stretching. The hoof is shaped like a sound one which is absolutely correct in this case as the sound shape will help the proper biomechanics thus quickening the rehabilitation. © L. Nillson**



**Fig. 11.21. Note how much the dorsal wall length is reduced when it's rasped to the water line. © E. Zharova**





**Fig. 11.22 a–b.** In this case of chronic founder the outer walls are rasped almost to the coronary band on purpose. This is a way to deal with the laminar wedge. Note how the damaged white line looks. The toe wall is relieved, rasped the way that the sole bears the load in the toe area. The



**side and the heel walls are UNTOUCHED. © P. Laidely**



**Fig. 11.23. The stretched white line as a consequence of laminitis. The wall in the toe area is rasped so it would bear no load at all. In the side areas of the hoof the wall bears the load together with the sole! © P. Laidely**



**Fig. 11.24. Professionals often nipper the wall instead of rasping it. It's faster and less traumatizing for a horse who has suffered laminitis. ONLY the wall and the stretched white line itself should be nipped at the angle of 90 degrees to the sole, and it should be done very carefully. It's important not to touch the sole! © P. Laidely**





**Fig. 11.25. The exfoliating wall (not along the white line) is properly rasped. © O. Grishko**



**Fig. 11.26. A proper trim of the hoof wall, the roll is well done. © P. Laidely**

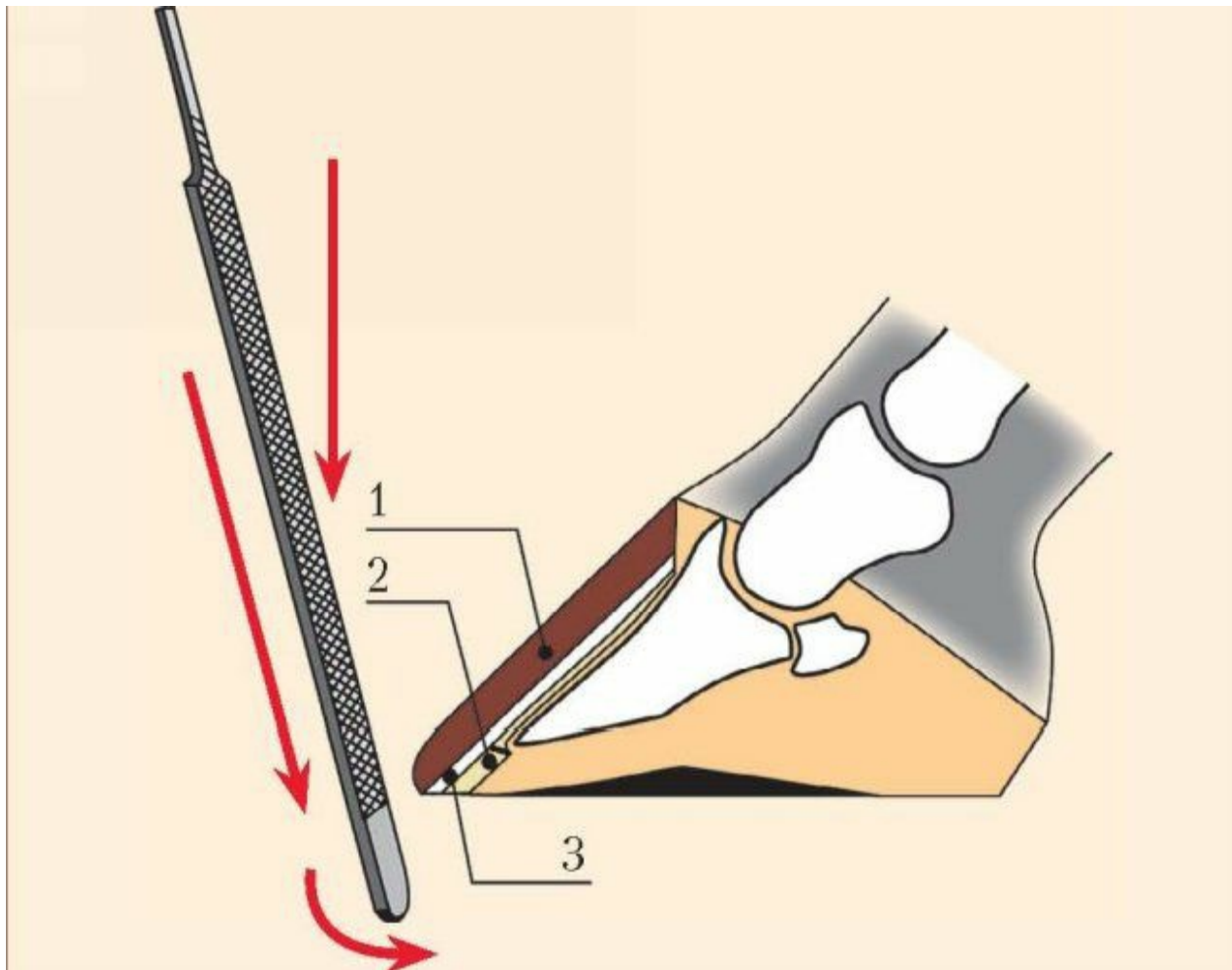


**Fig. 11.27.** This hoof hadn't been trimmed for some time, but now the walls are trimmed. The white line is tight, yet the small dark stripe in the area of the toe callus might indicate a problem. Medio-lateral imbalance (the left wall was longer than the right one) was eliminated during this trim, but the stretching in the side area is still there. In this case the white line should be cleaned of the dirt to see how damaged it is. If the damage is deep, the wall in this area could be relieved with rasping it very carefully at the angle of 45 degrees to the sole or with scooping it. It is important to maintain the balance and not allow further separation. © D. McCormick

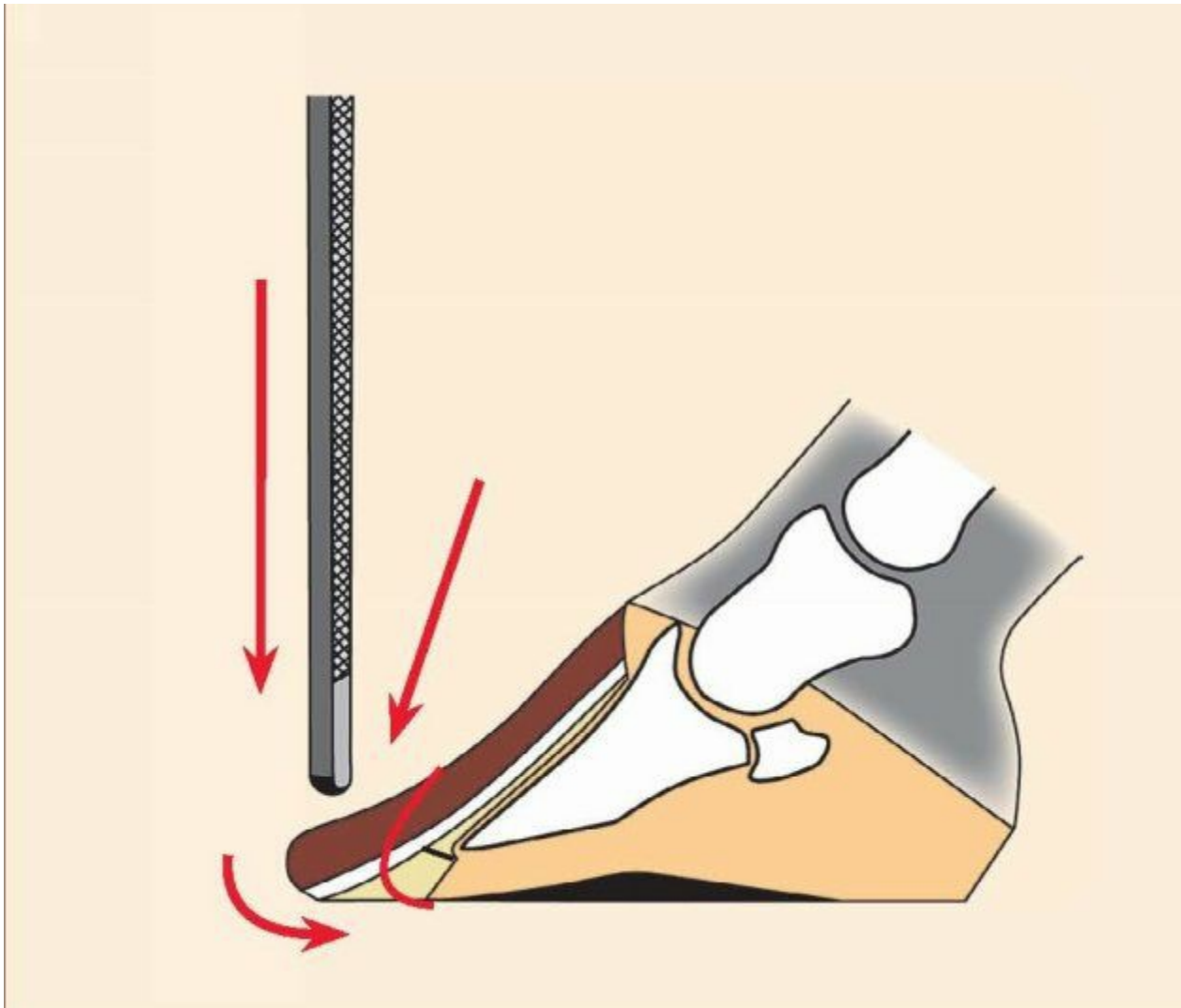




**Fig. 11.28 a–d. Post-laminitic stretching of the white line. A weak over trimmed hoof before and after the walls have been trimmed. The wall shouldn't be rasped all along the stretched white line. Only the wall in the toe area should be relieved to prevent ground contact. © Nevzorov Haute École**

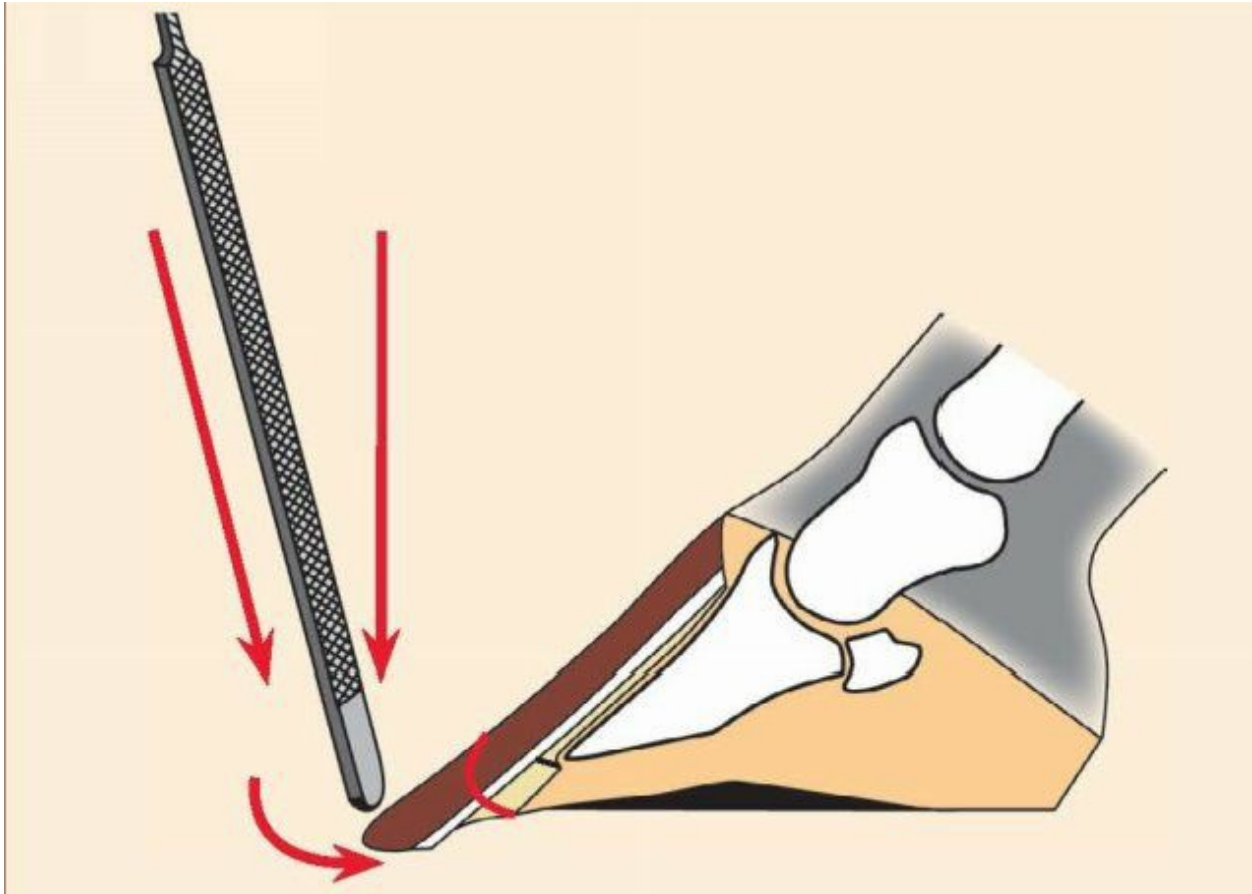


**Fig. 11.29.** If the white line is healthy, i.e. tight or just a little bit stretched (the outer wall has no declinations from the ruler put to it) work with the rasp at the angle of 45 degrees to the wall until you see the edge of the inner layer of the wall horn — the water line (the white-colored horn wall). From there roll the wall leaving the water line of the wall at the level with the sole. Don't confuse the white line with the water line: the water line is the unpigmented layer of the hoof wall. **In the illustration:** 1 — the outer hoof wall; 2 — the white line; 3 — the water line. © Nevzorov Haute École



**Fig. 11.30.** If the white line is stretched or even separated from the hoof wall (there is a visible curve of the outer wall), rasp the horn from the top downwards removing the entire stretched wall (only in the toe area) so that you stop at the edge of the sole without touching it! If you are not sure, you may rasp away only the wall itself, without the horn of the stretched white line. The main thing is that the separated hoof wall shouldn't bear the load and separate further. **Remember that it is expressly prohibited to remove the wall all along the hoof. The wall may be rasped away only in the toe area (see the clarifications in the text of the book).**





**Fig. 11.31. Overgrown walls tend to exfoliate and “shift” — that is separate along the white line thus causing its stretching and exfoliating. They should be rasped from the top down. It is better to place the hoof on the hoof stand. If the overgrown walls are hard to remove with the rasp when the leg is lifted, it might be better to use nippers. The arrows indicate the directions of the rasp movements. If the wall is badly overgrown, move the rasp vertically and a little under the wall in order to create the roll in the direction of the white line.**



**Fig. 11.32 a–f. The properly trimmed hoof. The balance is corrected, the wall is rounded. © E. Shishova**

# CHAPTER 12. STEP 10. BACK TO THE FROG

**Aim — to assure comfort to the frog with the new wall height.**

Now, as you've put the walls in order, come back to the frog once again and check if it protrudes over the hoof capsule. If it is much higher than the new level of the walls (more than 3 mm), you'll have to trim it to the level of the trimmed hoof walls.

Remember that the frog in the heel area should be at the level of the heels or stand a couple of millimeters higher (if you are looking at the lifted hoof).

The second part of the frog (the apex area) should be deeper or, better to say, lie lower than the hoof wall level (if you are looking at the hoof from the sole side).

It all can be checked with the rasp put across the hoof on the sole side.

**Q:** Sometimes something like ragged flaps of the periople grow in the heel area. Should I cut them? I've seen a case when a horse with such flaps walked in a forested paddock strewn with branches and fallen tree trunk parts. I suppose, this horse got caught with these flaps in that stuff and flayed the skin in the heels so they bled (as it happens when a hangnail is torn away).

**A:** Yes, such flaps should be simply cut with scissors. If you cut them with a knife you may injure the tender living tissues.





**Fig. 12.1. The frog of this hoof (which is a bit flat) is trimmed so it doesn't stand over the level of the walls at its apex and middle areas. © K. Kotzinyan**

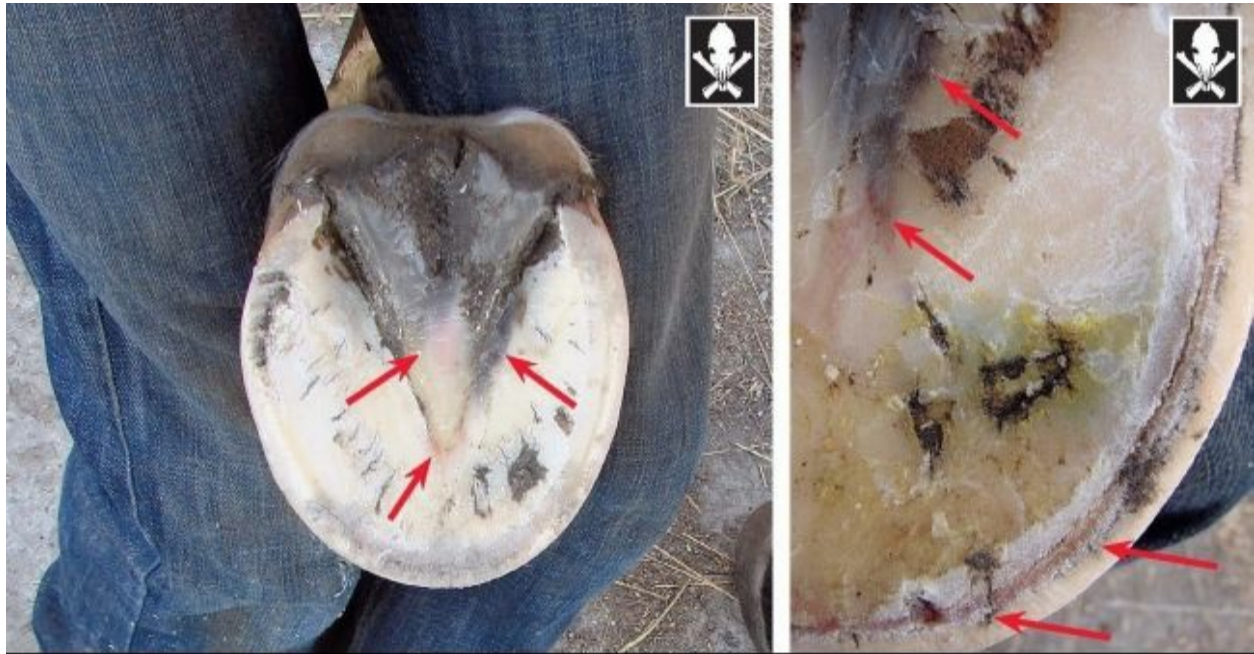


**Fig. 12.2. The rasp touches the middle part of the frog when the frog is measured. In many hooves such frog position is not only nonproblematic, but is necessary to stimulate the weak, dystrophic tissues of the digital cushion. © A. Oranskaya**



**Fig. 12.3 a–b. The apex of the frog should be slightly below the outer perimeter of the sole and the walls. In the photo the level of the frog apex is correct. © A. Oranskaya**





**Fig. 12.4 a–b. This hoof has an extremely attenuated sole and frog. Surely, it was damaged that way due to frequent and unnecessary trimmings. But the hoof is still wide, with correct proportions. You can see a hemorrhage at the central part of the frog, in the top area and along the white line, and the blackness which is the sign of necrosis of the frog and sole coriums. Such a hoof requires a careful prolonged rehabilitation, lasting a year or more. © E. Kazmina**



**Fig. 12.5. The proper frog height for this hoof. The heel area is a bit higher than the heels. © E. Kuzina**





**Fig. 12.6. A bruise on the frog. It could've happened because of the improper trim. © K. Kotzinyan**



## CHAPTER 13. STEP 11. WALL ARCH — THE SCOOP

**Aim — to remove the excess tension in the quarters (side walls) of the hoof.**

Look at the coronary band. If it's completely or almost straight (when you look at it from the side), leave the hooves alone for today.

**Yet if the line of the coronary band is badly curved (arches somewhere), you should take some measures — i. e. make scoops. (The scoops are also used to relieve the wall if the white line is stretched — see above).**

I'd like to mention that the curved coronet is mostly the problem of unhealthy hooves — hooves with contracted heels, overgrown bars, etc. Sound hooves rarely need scoops as their proper function provides sufficient wearing of the walls. It is necessary to create the scoops artificially in order to facilitate healing the hooves in the case when their functions were depressed for some reason.

If you follow the rule of the “sole level trim” the possibility that you'll need to make the scoop is very small.

Also, the healthier the hoof and the deeper the solar concavity, the less that the scoop will be necessary.

The hoof widens during the stance phase, and the side walls shift downwards. Normally the walls in these areas should have the hollows (arches) in the places corresponding to the areas of the widening and lowering of the walls. It happens almost in all free, sound horses. In domestic horses the natural scoops are very rare.

Usually, the domestic horses who live on soft ground with their “low-seated”

coffin bones and weak frogs and soles do well without scoops. The most important thing here is the maximum bearing surface. Yet some horses can't do without scoops. To define whether you need to make the scoop or not you simply have to glance at the line of the coronary band. It's easy to correct as well.

### **ATTENTION!**

**Always try to evaluate the situation correctly. A hoof with thin vulnerable walls, a stretched white line in the toe area and a flat weak sole doesn't need the scoops as badly as the increase of the bearing surface, i.e. load distribution across the whole solar surface of the walls (even if the coronet is arched). Try to attach the priorities accordingly.**

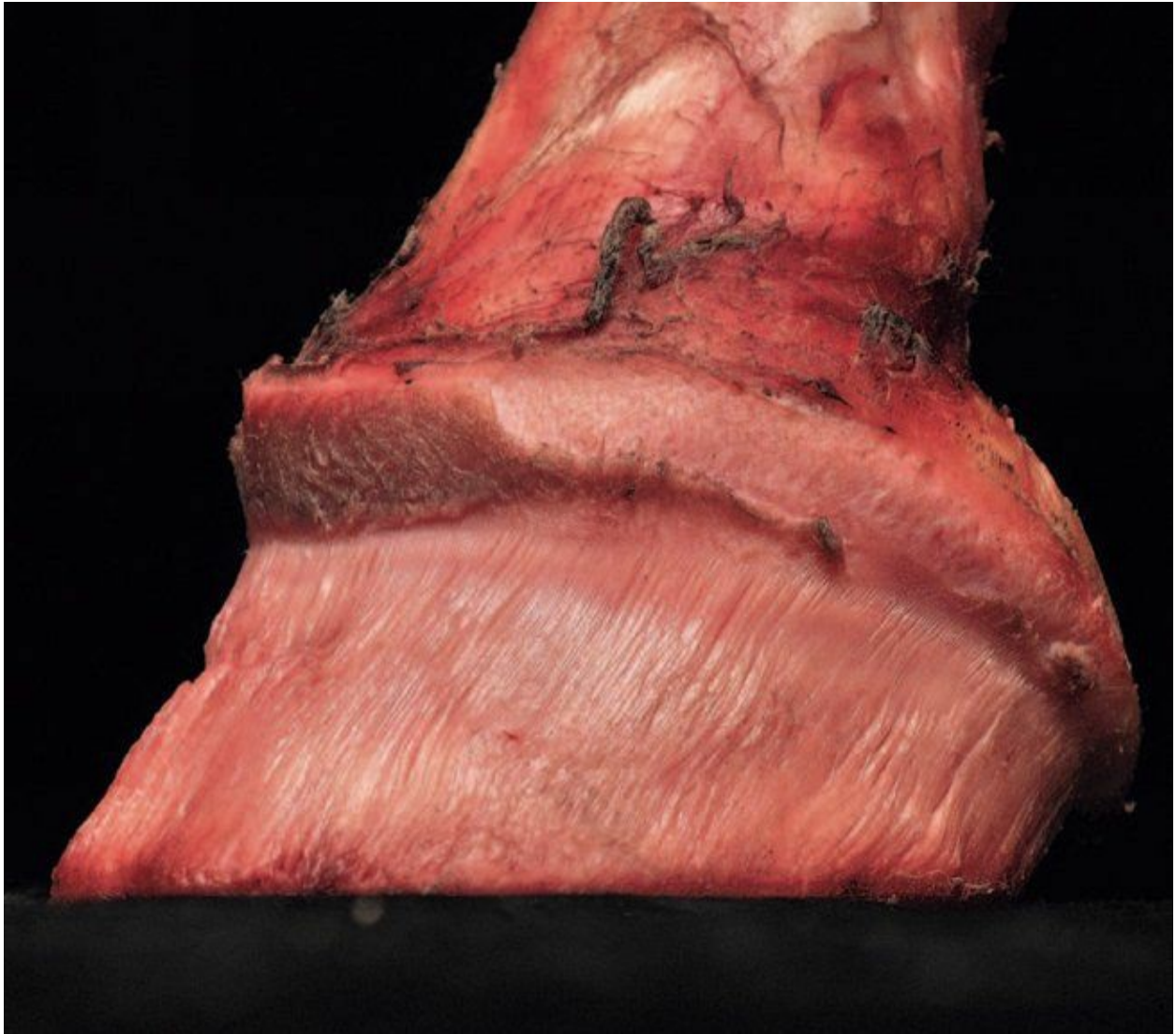


**Fig. 13.1. This is the hoof #II after the trim and the wall dissection. As you already know, we hadn't touched the sole which had no good concavity. Note that the hoof bases itself on the toe area and the heels. If the walls would've been trimmed to the level of the sole, the scoop would form on its own. © A. Oranskaya**





**Fig. 13.2. This is a brumby hoof. Note that the walls have a small natural scoop. © P. Laidely**



**Fig. 13.3. The horn wall is removed (the tissues of the coronary band are partially damaged). When this hoof was alive, it had a curved coronary band line and obviously needed scoops. © T. Batalina**



**Fig. 13.4.** In this photo an assistant (a slim girl) pushes slightly on the coronary corium to demonstrate its flexibility. There's no question, the tissues are very tender and flexible. © A. Nos



How to define where to begin and to end the scoop? Look at the coronet and mark the points between which its line is curved upwards. Have you?

Now lower the marker downwards, along the horn tubules, it's easy. As soon as your marker reaches the solar edge of the wall — mark the corresponding points.

Now you are able to see that the scoop is needed between the points 1 and 2 (see fig. 13.5).

First, make the marks on the solar edge of the hoof wall according to the conformation of the hoof. (These will be the beginning and the ending points of the scoop).

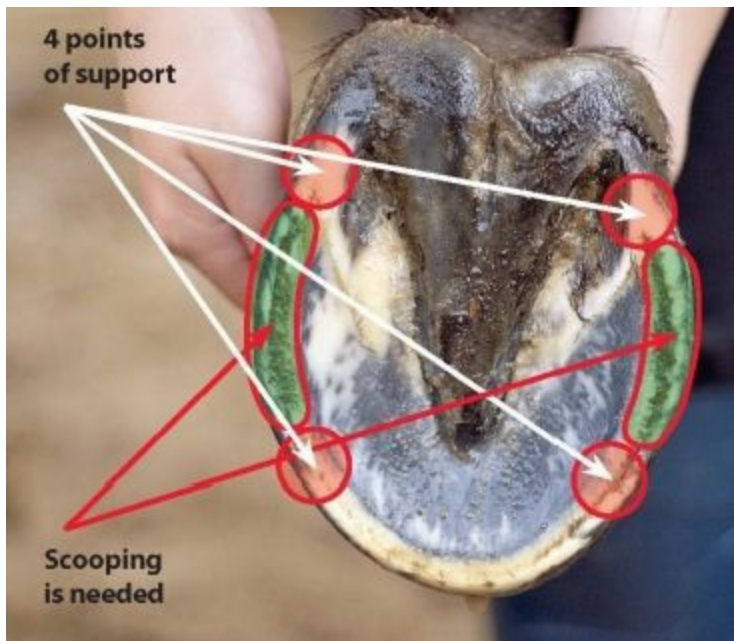
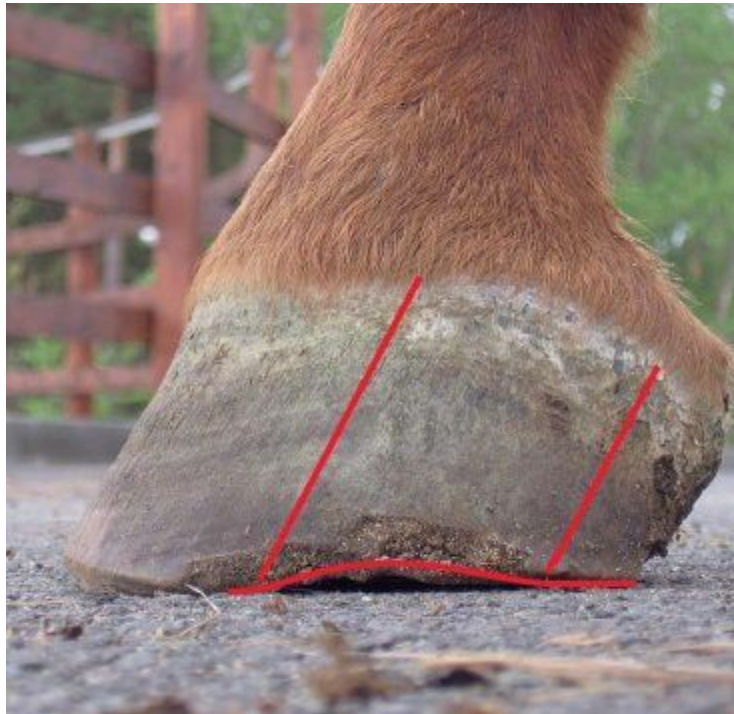
Now transfer the points from the outer wall to the solar side of the wall and see if your marks on the wall fit the zone of the physiological scoop. Those four points shouldn't "trespass" the territory of the support points of the hooves. You shouldn't make scoops beyond the borders of the scoop zone!

If you've changed the heel height and, possibly, have had to rasp the wall in the toe area, it is likely that you won't be able to make the needed scoop, as there is a risk that the hoof may "fall" onto the toe.

If you see that you can't scoop without harming the toe and the heel supports — put the idea of the scoops aside until the next trim.

The scoops are almost incompatible with the stretching of the white line when the walls are rasped to the sole and it would be impossible to make any scoops at all. Yet, if the white line is stretched ONLY in the quarters, the scooping may be the best decision.

**If you see no possibility of making the scoop — don't make it or make it only in the hind part of the hoof.**



**Fig. 13.5 a–b.** This hoof needs balance correction, of course. Yet now we are speaking of scoops, and this hoof, after it chipped itself right where the scoops are needed, shows us where they should be made. The red arrows indicate the areas where the wall should be scooped. © S. Gorovaya, V. Lyubovnaya

**When you make the scoop, always watch closely to see if you are violating the previously adjusted toe height.**

**Carefully follow your guides and marks. There is a risk that you'll spoil your whole trim by lowering of the heels with your inattention, and get the hoof with the same angles it had, just trimmed. So never shift the scoop forwards, to the toe.**

Scoops should be made between the supporting points, i.e. between the seat of corn and the toe supports which are situated approximately at the sides of the toe callus. Never make scoops closer to the toe or the heels.

So.

If there is a necessity and a possibility to create the scoop, use the rasp (or better and handier — the knife) to make small sloping arches at the sides of the hoof wall between the supporting points of the hoof.

The arches should only be as deep as the level of the sole.

While making the scoops, hold the knife almost fl at, parallel to the bearing surface of the walls. The depth of the arch directly corresponds to the arching of the coronary band above. Yet, the scoop arch should always have sloping edges. Cut only as much as the sole allows. If the coronet is arched 5 mm upwards, don't try to cut away 5 mm of the wall from the sole side at a time. Do it gradually, a millimeter at a time.

If at the time of scooping you've already rasped the walls to the level of the sole — **DON'T MAKE THE SCOOPS!** Wait till the walls grow a couple of millimeters! **It isn't recommended to make the scoops higher than the sole.** (We mean the scoops which are made in the case of the curved coronary band line. In the case of the white line stretching and cracks at the quarters, the wall can be scooped or rasped at an angle of 45 degrees or more angle so that the sole will bear the load instead of the wall.)

Usually the shape of the scoop reveals itself with the proper hoof work and sufficient movement for the horse.

**VERY IMPORTANT!**



**Don't cut the sole when you make the scoop of the wall. It is not the sole which should correspond to the shape of the scoop, but the scoop should go along the curves of the sole. The sole should be at the level of the scooped wall.**

It is appropriate to make the scoop only if the walls are higher than the sole! If during the trim you've already rasped the walls to the sole level while you've been leveling them again and again, you have nothing to do but leave everything as it is. Make the scoop in a couple of days, when the walls grow a bit longer. You'll have to scoop the wall on the regular basis until the coronary band line is completely straightened.



**Fig. 13.6 a–b. Proper scooping: top photo — a minimal one, corresponding the natural concavity of the sole; bottom photo — an exaggerated one, made to prevent the white line from stretching. The wall is rasped not only from the solar side, but from the outside as well. © P. Laidely, Nevzorov Haute École**



**Fig. 13.7. A hoof in need of scooping. © E. Shishova**





**Fig. 13.8. A hoof with a minimal scoop which is still noticeable in the standing horse. © S. Kharyushina**



**Fig. 13.9. Scooping is contradicted for these hooves. Note that the coronary band line not only arches upwards in one spot, but has a very slight tendency to fall down in the quarters. © T. Batalina**



**Fig. 13.10. Note the coronary band line. It seems to fall down in the quarter and the wall in the sole part is obviously and logically separated along the white line and there are some small chips. © V. Schestakova**





**Fig. 13.11. A radical, exaggerated scoop which is shifted forwards to the toe area. Its meaning is unclear — we should see the hoof from the sole side to find out the cause. Probably, there was an upwards bulging of the coronary band line or the white line stretching in the quarters. Now the coronary band line of this horse is perfect, it doesn't need any scooping. © E. Kazmina**



**Fig. 13.12. Note the crack of the side wall which runs from the coronary band. The scooping or the thinning of the horn in the cracked area is necessary to relieve the wall from excess bearing pressure. Maximum preservation of the remaining wall will assist a quick recovery. © S. Ponomaryova**





**Fig. 13.13 a–b. Note that the scoop arch is properly shifted backwards. The toe of the hoof (bottom photo) is quite short and its height should be preserved and grown. © S. Dziluma, A. Grigorieva**





**Fig. 13.14 a. This hoof had solved the scooping problem on its own — it just chipped. © V. Terenina**



**Fig. 13.14 b. The same hoof after a couple of trims and balance restored.**  
© V. Terenina



**Fig. 13.15. The walls are leveled, the sole is flat, there is nowhere to make scoops and, most likely, there is no need for them. © K. Kotzinyan**





**Fig. 13.16. If at a time you are planning to make scoops you find something like this, with the lopsided walls rasped to the level of the sole and distorted balance, forget about scooping. It's better to restore the bearing surface of the walls in balance and then level the walls carefully when they grow a bit. © S. Kharyushina**



**Fig. 13.17. A natural scoop which formed as a result of chipping. Probably, there were some problems with stretching and infection of the white line. Note the scar from an abscess on the coronet. © O. Grishko**



**Fig. 13.18.** It's hard to tell why this hoof has been scooped, yet the placement of a bit exaggerated scoop is proper. © E. Demkovitch





**Fig. 13.19.** A shadow from the side wall of the hoof gives an idea of the scoop depth. The scoop is natural; this horse had never been trimmed. © P. Laidely



**Fig. 13.20. This is how a scoop shouldn't ever be made — the wall and the toe supports are rasped way higher than the sole level. © K. Toropova**





**Fig. 13.21. In this case a scoop was necessary to relieve the load from the crack running all the way from the coronet. © A. Grigorieva**





**Fig. 13.22. A proper scoop. In this case it was made because of the white line stretching, not because of a coronary band line “distortion”. © P. Laidely**



**Fig. 13.23. This is how the hoof self-scoops with the help of chipping. © S. Gorovaya**





**Fig. 13.24. Chips in the area which needs to be scooped. © S. Gorovaya**





**Fig. 13.25.** Looking at the hoof from the sole side we see that the wall has not only separated a bit, but is almost going to fall off any time. © V. Schestakova



**Fig. 13.26. We are rasping the hoof at an angle of 45 degrees and removing the “burr”. Here the rasp is placed incorrectly — with its rough side to the hoof and with the pointy end facing the toe. © V. Schestakova**





**Fig. 13.27 a–b. We are making scoops between the marks on the wall. We put the knife flat so the sole is the guide which shows the level. We keep in mind that we cut only the wall, not the sole! © A. Oranskaya**





**Fig. 13.28. A properly trimmed hoof edge with an exaggerated scoop. © E. Kazmina**



**Fig. 13.29. This scoop lacks smoothness. © K. Kotzinyan**

# TRIMMING: SOLE, FALSE-SOLE AND NON-LAMINAR BARS

**Aim — to lower the height of the hoof capsule at the expense of the solar horn as well (in the case when the hoof was recently unshod or the walls hadn't been trimmed for a very long time), i.e. to relieve the sole of the spare horn if it doesn't crumble away on its own due to dysfunctional hoof mechanism or during the restoration of balance and rehab trim.**

Only a person with sufficient experience should do such a trim. She should have trimming experience of at least three years and should have dissected no fewer than 20 hooves on her own.

## **ATTENTION!**

**Try to avoid this step of the instructions if you can. Trim the sole only in extreme circumstances. The risk of exaggerating a problem of a hoof or injuring it is great.**

**Trim the solar horn with the knife only if the hoof capsule height is more than any known standards and is higher than 12 cm and if the sole has at least 1.8 cm concavity depth with the collateral grooves deeper than 2 cm.**

**If the heels are unusually high, if the hoof is steep, the coronary band has a reversed angle, the horse has suffered from laminitis, etc., don't trim before you make a radiograph of the hooves and before you have enough experience with the rehabilitating trim.**

If you don't need to lower the hoof capsule height, be sure to skip this step.

\*\*\*

So. Suppose that a few days have passed since the first trim.

If during the first time you trimmed the hoof to the sole level, tried to soak the



hooves, walked the horse on different ground types, the hooves are still unbalanced, the hoof capsules are unusually high and the soles don't crumble, then:

1. You are probably wrong in your evaluation of the balance and the hoof condition. Check everything once more; show the hooves or pictures of them to a professional.
2. The horn of the sole really doesn't crumble for some reason (see below).

If you are absolutely sure that you have the second option, you may try to work with the non-crumbling sole.

\*\*\*

Even when the walls grow very long, the sole usually stays within normal limits as it grows at a much slower rate.

**Trimming of the sole is needed in one occasion in a hundred. The standard for the sole is — the thicker the better. One centimeter is the minimal thickness of the sound sole.**

As we've mentioned before, you **MUST NOT** trim the sole by cutting it out.

Yet there are some exceptions:

- after deshoeing or if the walls of the neglected hoof have grown so high that the hoof stopped “working” and the sole is not able to crumble;
- if a horse is not trimmed and isn't allowed to move — i.e., kept in a box;
- after laminitis or in the case of chronic founder, when the coffin bone needs to be returned to its normal position (to do it, the heels need to be lowered radically in some cases);
- if there are pathologies like contraction, club foot, etc., when the sole needs to be cut with knife (BUT extremely carefully, only in the heel area if there are certain indications to do it and if the collateral grooves are deep!). Never touch the toe callus area in the case of a club foot, laminitis, chronic founder;
- if the bar horn has covered the sole completely.

The thick layer of the sole protects the sensitive tissues and doesn't prevent the mechanisms of the sound hoof from working properly. When the hoof expands the "spare", old and inelastic solar horn usually cracks, exfoliates from the elastic horn and crumbles naturally. The walls either wear on their own or chip to the level of the sole.

Yet if a horse is shod or moves little, has no access to wet ground, lives in a box on a wood shavings covered floor, the elasticity of the hoof horn dwindles and the dead horn doesn't crumble and wear as it should do naturally. Does it cause some discomfort in this case? No one has a precise answer. The opinions vary. The only thing known for sure: the overgrown walls can distort the balance badly, they encourage the appearance of cracks, chips, white line stretching and in some extreme cases can cause laminitis. This is why we shorten the walls, and excess solar horn will be present only if the walls are overgrown which causes problems.

**Conclusion:** if the walls are of a proper height, the sole is of a needed thickness. So, the sole could be and need to be trimmed only if the walls are badly overgrown. **If the walls are of a proper height, DON'T TOUCH THE SOLE (the exceptions are the cases of pathology, rehabilitation after founder, club feet and other diseases which require the highly professional care).**

**Q:** How can I understand if the sole is still protecting the hoof or it has begun to suppress the underlying tissues and to bring discomfort? Are there any precise visual criteria?

**A:** If you don't have proper knowledge, no criteria can help.

If you have the knowledge and the experience you'll have your personal opinion on the subject of the "comfort-discomfort".

It's terrible, but that's the way it is. There are plenty of opinions on the subject. You may start to explore this issue on your own and make your own conclusion or join the Strasserian or Rameyan camp.

My vote is for the common sense. I think that the solar horn can't bring discomfort anyway. The thicker the sole the stronger the protection it

gives. That's why I find the "carving" of the solar horn a whim which is devastating for a horse's health.

If a horse shows any discomfort, I "blame" the solar horn as the last resort. Try to avoid touching the sole with the knife.

The best criteria for what to trim is the level of the non-crumbling sole.

I have to say that most of the horses who haven't been trimmed properly before and have no sufficient movement have a thin (tender) and too sensitive soles and frogs. One of the aims of our trim is to strengthen the sole and the frog, to restore their thickness and elasticity. The more the horse moves on different types of ground, the quicker the sole will restore, the thicker, the stronger and the more elastic it will become.

If you leave the horn of the sole and the frog untouched, you may comparatively quickly heal many diseases and lift the coffin bone in the capsule.

So, if the hoof is badly overgrown, you'll have to uncover the true sole, i.e. — to create the solar concavity with your own hands.

If you see that the hoof walls are very high, the frog apex lies 2 cm deep or more, the frog doesn't touch the ground, the collateral grooves look like the bottomless crevasses, yet you aren't able to crumble the solar horn with the hoof pick to lower the walls more, you'll have to lower the sole with the knife.

Think again why might the solar horn not be able to crumble. The likely reasons are:

- The horn is over-dried and very hard. In this case soak the hooves thoroughly and try to scrape the sole with the hoof pick again. See Step 1. The hoof pick does nothing? Take a dull knife and scrape with its rounded tip. No effect?
- Maybe the sole is covered with the hard horn of the bars and the so-called false-sole has formed. In this case, trim, but very carefully. The easiest way is to take the rasp and trim the whole hoof — the walls and the outer edge of the sole. Thus you'll be able to lower the level of the hoof capsule equally to the desired height. Check the concavity depth. As soon as you lower the walls to where there is a concavity depth of 1.7 cm in the apex area — stop. If the problem was caused by a false-sole, after such rasping it'll begin to fall away



in layers baring the true sole. The heels, the walls, the toe callus area and the outline of the sole should be at one level. Between them you'll see either normal solar concavity which is no lower than 1.5 cm, or the frog will be “drowning” in a layer of non-laminar bar horn which would be at one level with the new wall height. In the first case do nothing more. In the second one, if the **whole** “sole” is at the level with the outer walls and frog sinks in it as deep as 1.5–1.7 cm, you may take the knife and scrape the area around the frog. You can trim the area around the frog only once — during the first trim! After that you won't touch it. **The trimming of the sole around the frog of a sound hoof has no anatomical or physiological sense, you may only need to at first to define the trimming strategy. If we trim the sole with a knife, we often bring serious or even criminal injury to a horse's hoof.**

In Step 1 you've defined the depth of the concavity, now begin to trim the sole around the frog with the knife to define where you'll start to make the concavity.

You'll see the dirt line along the frog. You shouldn't cut into it and clean it until you reach the living tissues! Just let it guide you.

**Pete Ramey:**

Once an adequately thick layer of callused sole covers P3, the resulting shape of the sole mirrors the inner structures and the collateral grooves will be lifted 5/8 to 3/4 inch off the ground, even with a very short overall hoof capsule length. The result is incredible traction, performance and hoof function.

The deepest point is defined — it's the junction of the frog and the sole. Now you know how much of the horn you can safely remove in the direction of the hoof wall in the quarters. Note that you CAN do it, but you don't always NEED to.

Now remove the horn in the direction from the frog to the outer perimeter of the sole. **Note that you should trim not in the direction of the wall, but in the direction of the solar edge.** This edge may be from 5 mm up to 1 cm wide! Trim the area around the frog this way until you reach the place where the laminar bars end (i.e. about 3 cm backwards from the frog apex in the

direction of the heel). Hold the knife so that you'll create the concavity in the direction of the walls and the outer perimeter of the sole. Remember — it's better to undercut than to overcut.

In the case when the whole hoof, including the sole, is higher than the standard by 1 centimeter or even more, it is easier to reach the balance in one trim. You'll be able to lower the heels while leaving the horn in the toe area which you can't do if the hoof was low in the toe

Many professionals recommend trimming the horn around the frog with the knife to the very junction of the frog and the sole to define the sole depth. My own observations show that it's not worth doing. It's difficult for the unskilled person to stop in time. The skilled one doesn't need this whole business at all as she knows the depth of the solar concavity without it.

It's easy to understand from where the frog grows, one need look at the specimen section only once. It's easy as well to understand that it's time to stop, if one would look at the specimen again.

It's strictly forbidden to cut deeper.

The sole "should" be concave, be relatively smooth and have a slope from the inner part of the hoof wall and the outer perimeter of the sole towards the collateral grooves and the junction of the sole and the frog.

**Q:** What are the tough round bulging growths in the toe callus area? Should I touch them?

**A:** These growths indicate that the hoof has some problems, and it is likely possible it's trying to protect the weakened sole in the toe area this way, by "growing" the specific lumps of horn. It may be the solar horn, but usually it's bar horn. You shouldn't cut these growths, they are protecting the weak sole and heighten the toe. In time they'll disappear on their own. Of course, you shouldn't keep the growths at the expense of balance or evening the solar edge. If after you've shortened the hoof wall but growths of 0.5 cm height are bulging over it, the horse can get a bruise under the growth due to the unequal weight distribution (the weight concentrated in the very small area). If you encounter such situation, don't remove the growth completely, just level it to the new

wall height with the rasp so it won't bulge over the edge of the hoof capsule.

Any protruding parts of the sole could be (not necessarily should be) carefully removed in the direction to the solar edge and quarter walls without a great risk of thinning the sole.

Try to trim only the heel part of the hoof, i.e. the area of the widest part of the sole towards the heels.

Of course, you can do this only if the collateral grooves are deeper than two centimeters or even more.

If you have no need to correct the balance — don't touch the toe half, i.e. everything which lies in the front of the frog. Always remember that you mustn't thin the toe callus area and deprive the hoof of the support of the outer perimeter of the solar horn. Remember that the outer perimeter of the sole should bear the load and be at one level with the hoof wall.

After you've trimmed the side areas of the hoof and created some "concavity", make sure that the bars are not at the level with the hoof walls. If they are — you should lower them. Create a smooth transition between the sole and the bars. Constantly check the balance.

Now, if you've lowered the overall hoof height with the help of the method described above, you'll see the clean heels and bars with the perfectly visible white line. The sole in the seat of corn would be at the level of the heels or, better, a bit deeper. If you've already rasped the heels to the level of the sole, you shouldn't lower the sole so that the heels stand a little higher than the seat of corn. Leave everything as it is and let the horse walk on soft ground.

Yet if you want to make everything "as it was" before the trim, you'll have to let the horse walk on different types of ground and move as much as possible. To prevent recurrences, in a couple of days after the first trim if the horse doesn't probe the ground or hesitate to step, start walking him on abrasive ground a couple of times a day for 10 minutes. Watch for the wall height. I hope, in this case you'll never need to trim the sole with the knife again.

The necessity to trim the toe area may occur only in the case of a hoof badly overgrown in the toe. If you trim only the heel side of such a hoof, it will distort the dorso-palmar/plantar balance (the angle of the coronary band will



be more than 30 degrees). I can say that such a necessity occurs extremely rarely.

Yet sometimes it happens after a so called “professional” trim when the heels are lowered thoroughly and thoughtlessly.

**Q:** What if I can't clear the dirt line even if the hoof has a normal height? The dirt line runs too deep. At which level should I stop?

**A:** If you can't cut clear the dirt line, you are dealing with a pathology, possibly with sub-solar inflammation, cracks, disturbed circulation, solar contraction, navicular disease, pinched corium and necrosis, etc.

In these cases it's very dangerous to clear the dirt line around the frog, don't touch it with a knife, don't cut it away, don't try to clear all the blackness. You shouldn't pick the horn even with the hoof pick in this case.

As we've mentioned above, if before the trim the balance was ideal and the sole concavity was acceptable (no less than 1 cm), you should lower the walls in the toe and the heel areas evenly. Yet, usually you need to lower the hoof only in the heel area; the toe usually needs to be grown or kept the same it was before trim.



**Fig. 14.1 a–b. Brumby hoof. A perfect illustration of the forming, the looks of and the falling off of the healthy “false sole”. In the upper photograph: the horn of the bars had completely covered the sole and is ready to fall off in the favorable conditions. In the lower photo: the bared true sole. We**

**should stress that this condition IS NOT a pathology. © P. Laidely**



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And now let's go back to the hoof #III once again.

We've been trimming it thoroughly following all the rules, but after all we've got a bad, yet properly trimmed hoof with an imbalance. Even after it got the new heel height, it still wasn't able to step heel-first because the proportions of the hoof (it's clearly seen from the sole side) are badly distorted.

So, after looking at such a hoof one should sigh and leave it be, because the hoof horn can't be removed with the hoof pick.

Our hoof is a cadaver one, so we took the liberty to demonstrate to you what can be done to improve the balance.

Look closely at the photographs on the page 181, at the toe callus area in particular. The sole was trimmed with the tip of the hoof knife, it was scraped, not cut (if the hoof was alive the spare horn probably could've been crumbled with the hoof pick).

As you already know, the white line of this hoof looked thin and sound, but the hoof capsule was still abnormally high, the toe was too long and the collateral grooves too deep.

Now look what we've found after we had removed the outer layer of the sole.

Under the thinnest outer layer of the solar horn there is a Grand Canyon-wide white line. In this case it is no threat for the health of the horse, because the horn can be simply cut away, and this is what we've done thus lowering the overall hoof height. Of course, the depth of the concavity was measured. After the lowering of the walls it was 1.6 cm, which is not bad at all. The collateral grooves after such a trim also had the depth of 1.6 cm. The frog now reaches the ground.

Compare the hoof before and after the trim. The proportions of the hoof capsule from the outside as well as from the sole have changed to match almost perfect ones.

Of course, such a trim doesn't suit live horses. We would have left more of the solar and bar horn.

A professional, after seeing the problem, wouldn't touch the sole at all. She would just lower the walls (the hoof capsule height) with a rasp and would have shortened the toe length by rasping at 90 degrees to the sole plane.

I understand that the trimming of such hooves shouldn't be done by novices; it's way out of their league.

Not just the trimming itself, but the ability to diagnose the problem correctly.

Yet the skill will come with time... I'm sure that if you study the nature of the hoof carefully and thoughtfully, soon, in a mere 10 years, you'll be able to understand and to trim problem hooves.

Now I can only say that without a radiograph and proper education one can't correct the serious problems. Correction of a club foot is a really complicated thing, not every professional can do it. The thing is that one can't remove the horn from the heel area thus thinning the sole. The club foot should be corrected not only by lowering the heels "onto the frog", but by growing the horn in the toe area simultaneously. To return the coffin bone back into its proper physiological position, one should constantly watch for the dorso-palmar balance and correct the angles of the hoof capsule if not daily then weekly at the very least. It's not that simple.

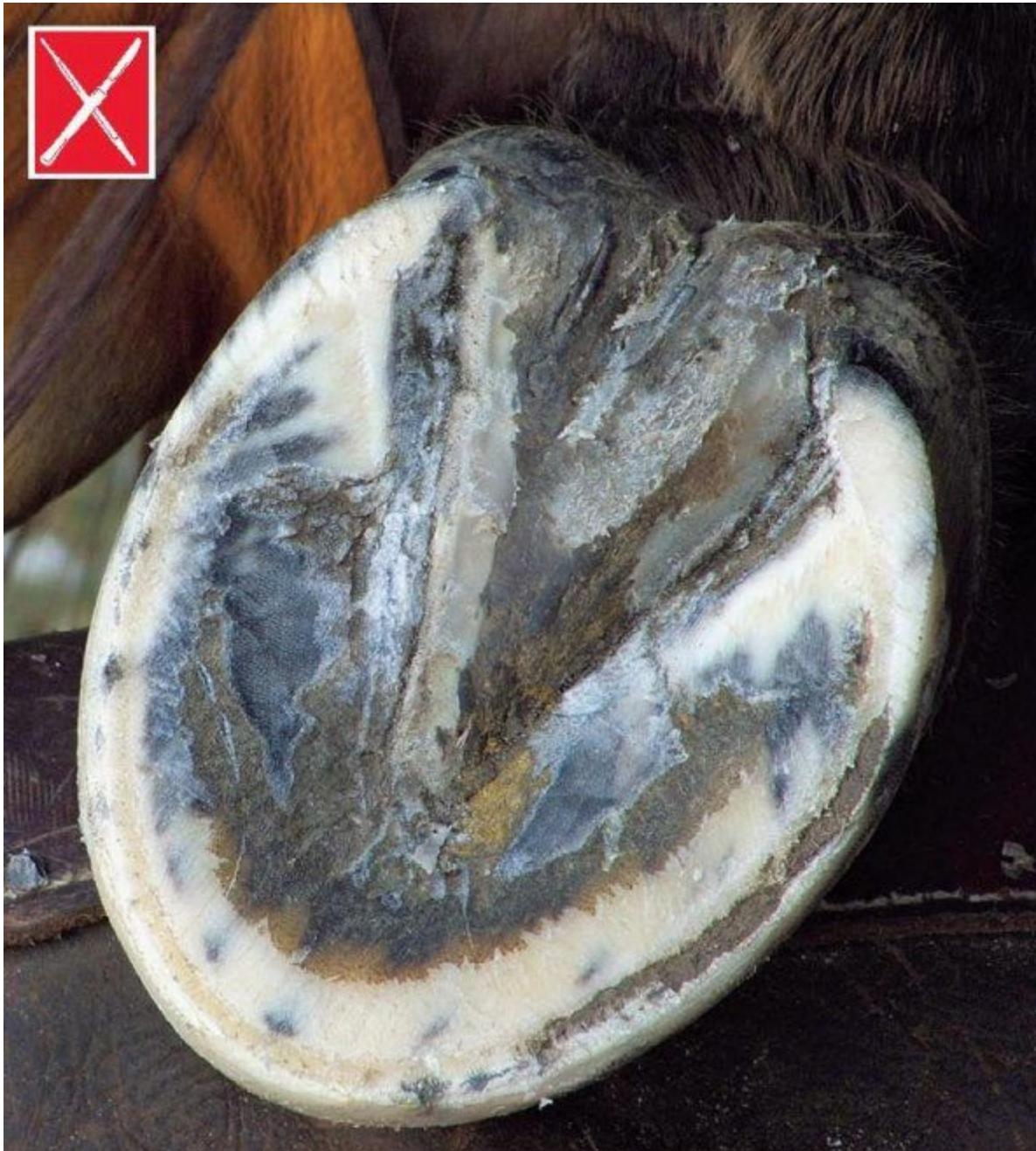
The trim in the case of chronic founder (in its essence) depends on the position of the coffin bone in the hoof capsule. You should make a radiograph and lower the heels so that the coffin bone would be restored to its proper position. The toe area shouldn't be touched. The toe walls are rasped from the outside.



**Fig. 14.2.** I have to say that this hoof has **NO** false-sole. The height of the hoof capsule had been lowered quite a lot. The depth of the concavity and the collateral grooves had been checked. Note that the edge — the outer perimeter of the sole — is at the level with the hoof wall. The bars should be cut smoothly in the direction of the frog apex so that they lie deeper than the walls and the heels and couldn't chip if the piece of the protruding horn would be caught with something. The sole and the frog shouldn't be



**touched. © P. Laidely**



**Fig. 14.3. A professional rehab trim. The overall hoof height is lowered, the sole is touched with the knife in the bar area and rasped in the toe area. © P. Laidely**







**Fig. 14.4 a–c. Two hooves of the same horse. In the first photo you see how the horn of the bars crawls over the sole. In the second and the third one you see a hoof in which the sole is completely covered with the nonlaminar horn of the bars. In this case the solar horn can hardly be crumbled with soaking and scraping it with the hoof pick. Yet, after a slight trim of the area around the frog such a false-sole can simply fall off in one piece. © V. Terenina**



**Fig. 14.5. Hoof # III. This is how it looked before the trim. © T. Batalina**





**Fig. 14.6. The same hoof trimmed to the level of the sole. The toe is untouched, the walls are lowered to the sole level, the sole itself is scraped with the hoof pick. © T. Batalina**





**Fig. 14.7. The imbalance was obvious. We decided to scrape the toe area with the rounded tip of the knife and have discovered the extremely wide white line. © T. Batalina**



**Fig. 14.8.** The height of the hoof capsule was lowered with the rasp until we've found the normal yet a bit stretched white line. The proportions of the hoof became almost proper. © T. Batalina





**Fig. 14.9 a. The coronary band line has the proper angle. It's obvious that there is no need of changing the dorso-palmar balance, so the badly overgrown hoof capsule should be lowered equally along the perimeter of all the walls. © T. Batalina**





**Fig. 14.9 b. The hoof after the trim. The walls are lowered to the level of the sole. The proportions of the hoof are better now, yet the hoof still is a bit high, the toe is too long. © T. Batalina**



**Fig. 14.9 c. The balance has been restored after the hoof capsule was lowered at the expense of the solar horn in the toe area as well as the walls. © T. Batalina**



**Fig. 14.10.** This is what the laminar wedge looked like after we've scraped the sole with the rounded tip of the knife. The coloring of the white line horn indicates the previous inflammation and horn hemorrhage. © T. Batalina





**Fig. 14.11 a. During the trim we constantly check the depth of the collateral grooves. After the heels and bar have been lowered, their depth is 1.6 cm. © T. Batalina**



**Fig. 14.11 b . While lowering the height of the hoof capsule, watch closely that you don't lower the hoof too much. This photo shows the measurement of the concavity depth after the walls have been lowered. The slightly stretched white line is perfectly visible. © T. Batalina**

## **PECULIARITIES OF THE HIND HOOVES**

The hind hooves should be steeper than the front ones, their concavity is deeper, as we've discussed before.

Besides that there are no specifics to the trimming of the hind hooves compared to the fronts.

If you look at the sole of the hind hoof, imagine that you divide it in two halves. You'll notice that the hoof is not symmetrical. The outer (lateral) half is usually wider. The inner (medial) wall of the hind hoof is usually higher and steeper. This is clearly noticeable in domestic horses who spend a long time standing on one hind leg while balancing the other on the toe. Of course, the efforts of one who tries to remove this flaw are vain. Yet you should remember that a severe imbalance undermines all the joints. Watch for the medio-lateral balance of the hind hooves as well as you watch for the front ones. Trim only the inside wall of the hoof if you need to. The outer wall usually doesn't need any trim at all. Let the sole level guide you.

Thanks to the lesser weight put on the hind hooves, they are rarely exposed to various tribulations like laminitis. They almost never have navicular disease, white line stretching occurs a few times rarer than in the front hooves, etc.

Another peculiarity of the hind hooves is that they don't need such a roll as the front ones do. It's determined by their anatomy. The hind hooves always step heel-first which gives them comparatively proper biomechanics even if there is some dorso-plantar imbalance and incorrect trim.





**Fig. 14.12 a–b. A hind hoof before and after the trim. The medial wall and heel needed lowering, the lateral ones were almost fine. © P. Laidely**

# AFTERWORD

Well, this is it.

How do you know if you did everything right?

The main indicator is the position of the carpal and tarsal bones. If they are perpendicular to the ground, then the horse stands squarely and feels no pain in the heel area.

Of course, a horse does not always take the proper posture right after the first trim. The changes in the posture may come in a couple of days, weeks or months — the horse may need to get used to the new balance.

Lead the horse to an even surface after the trim and check the balance. Note whether the heels are of even heights, if the coronary band line is parallel to the ground (frontal view), if the tubules of the hoof horn are in line with the digital axis. All of these are of great importance.

Never mind the angle of the dorsal hoof wall, it may not correlate to the angle of the pastern. The dorsal wall may be tilted upwards. At first the hooves may look like a platypus nose — depending on the frequency and the quality of your trim. Such a configuration of the toe can bounce back rather quickly (in a couple of months).

The angle of the coronet should be **approximately** 25–30 degrees (not necessarily after the first trim), the frog should reach the ground (not always possible to gain in the first trim, as well).

Often the toe remains hanging in the air after the lowering of the heels.

Don't be afraid, it's absolutely normal. It's even good! The toe grows comparatively fast, and while it does, the white line stretching will disappear, the concavity will get deeper, the sole under the coffin bone will become thicker, the frog and the digital cushion will get stronger, the heels will widen, the proper solar concavity will appear and the hoof will start to work with maximum performance.

If the hoof had white line stretching before, now, with a correct trim, you can

clearly see the line between the new horn and the old one, which is tilted upwards at an unnatural angle. You'll just gradually rasp this old horn vertically, from the outside of the capsule.

Now we should see how the horse moves.

Walk the horse on hard ground, look to see if painful sensation in his hooves has appeared. If the horse steps carefully, you've removed too much horn. A tender footed horse should be provided with soft footing for the next week or two. Don't trim him meanwhile by any means.

If the horse (heaven forbid!) became lame after the trim, you've made a grave mistake. Find out right now what it was, provide the horse with soft footing. Usually, lameness after the trim is a consequence of excessive cutting of the frog and sole tissues.

If you hadn't touched the sole, yet lameness still appears, probably you've taken too much off the heels for one trim thus distorting the balance to which the horse had been accustomed. In this case an inflammation of joints, ligaments and cartilages, abscesses, laminitis and, of course, serious lameness may occur.

Usually, horses "probe" the ground right after the trim, testing the new sensations, but don't show any discomfort the next day.

**You should trim so that the horse will feel better after the trim than before it. Not the other way around.**

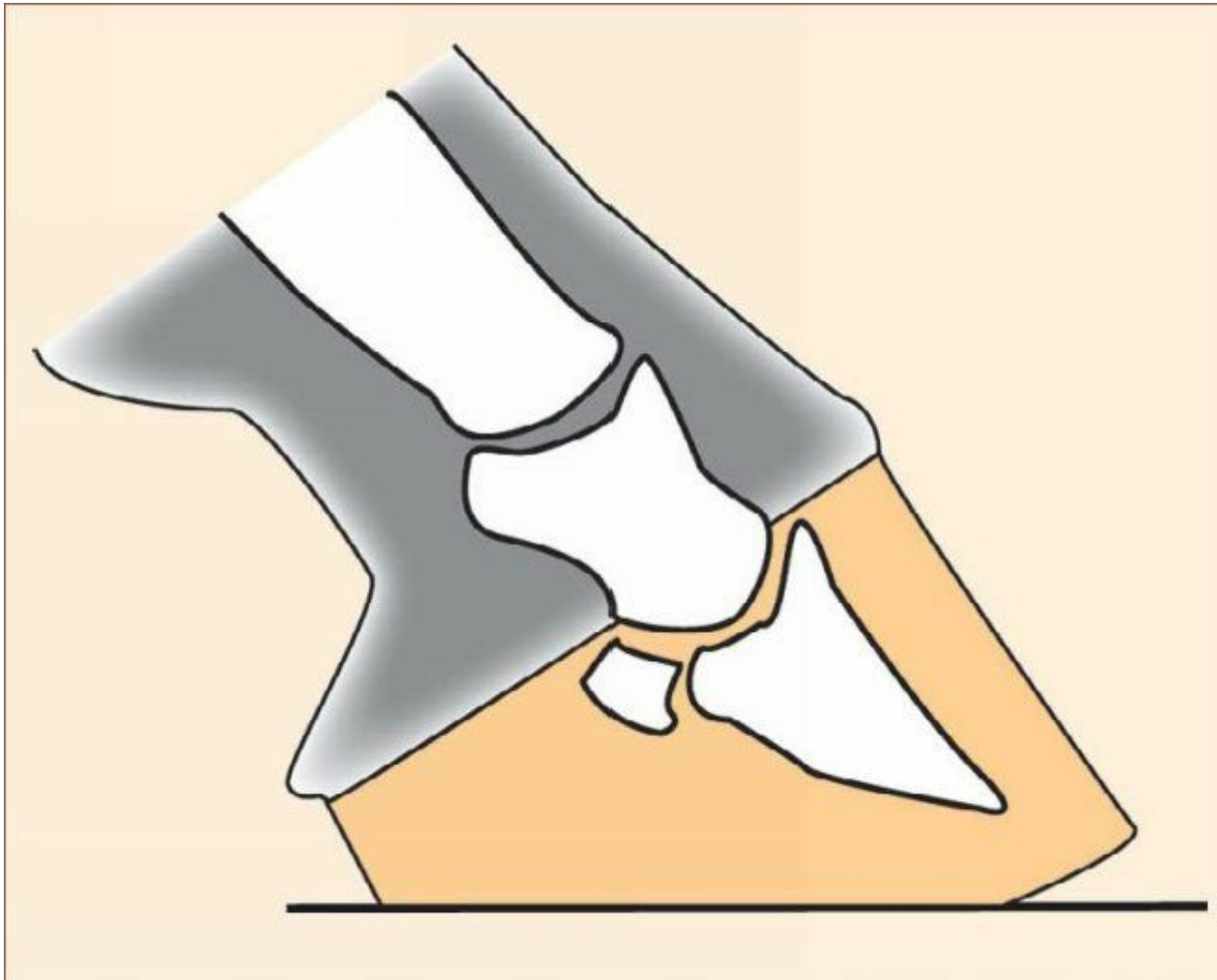
It is widely thought that boots are a good thing during the rehab time. They ease the transition stage for sure and aid the regeneration of the tissues as they can help alleviate discomfort in the hooves after some drastic changes. There are special pads that stimulate the dystrophic frog and digital cushion. If the horse feels pain or just some discomfort, he would limit his movement to minimum, while any rehab is possible only if the horse moves! If a horse moves unwillingly after the trim, you may put the boots on, but I don't advise overusing them. Put them on for 15–20 minutes to walk the horse on hard footing, no longer. Better provide a horse with comfortable, moderately soft footing, but lead him for a walk on the hard surface from time to time so the hooves may "get used to it" — adapt for the new conditions and the hoof horn



may callus faster. **You may walk the horse on hard ground only if there are NO signs of lameness, i.e., if the hooves are relatively sound.** If there is lameness of any kind, the horse should walk only on soft ground until the symptoms disappear. Anyway, remember, if you haven't removed the causes of poor hoof quality and bad balance, any trim is useless.



**Fig. 15.1 a. This hoof was “seated” on the heels which were lowered by some 6 mm. The toe is hanging. It’s perfectly normal. © Nevzorov Haute École**



**Fig. 15.1b. After the heels of the steep or club hoof are lowered, the shortness of the toe height becomes obvious. © V. Lyubovnaya**





**Fig. 15.2 a–f. The lowering of the club or steep hoof always means a most difficult rehab job to correct the balance and the white line stretching which occurs almost in every such case. The success of the manipulations depends on many factors, mainly on the professional qualities of the hoof care practitioner, and the living conditions and presence of concurrent conditions for the horse. In the photos: a hoof in the process of the correction of the club foot. It could take months or even years to**

**completely recover its balance and integrity. © B. Udiljak**

## **HOW OFTEN SHOULD I TRIM?**

There is no precise answer as the hooves in different conditions wear down at different rates.

The frequency of the trims depends mainly on the boarding conditions, ground quality and humidity.

If the trim and the keeping are properly organized and the horse lives on soft, wet ground, you'll possibly have to simply rasp the hooves once a week to prevent the white line stretching. If the horse moves across hard and dry grounds the trim may be necessary only monthly or even rarer. You won't need to trim frogs and sole at all. The hoof care would be a pure delight!

If in the very first trim you've gained all of your aims, you'll have only to keep up the result by rasping the walls monthly.

If you have to lower the heels by 2 cm, you need to trim very often so that the heels would have no chance of growing a spare millimeter. To do it, rasp the walls every other day or once a week, removing a "tiny bit" of horn.

### **Remember that a hoof will try to regain its previous shape at first.**

If you abandon the trim for a couple of weeks and don't change the keeping conditions, you'll be surprised to find out that your work was in vain, that the hoof has regained its incorrect shape and looks like it looked for many years.

It's advisable to let the horse stand in a puddle once a day. For 5 minutes at the very least. In the wild a horse goes to the water every day and puts his hooves in the water or in the mud which helps the hooves to function correctly. So don't forget to soak the hooves daily. Of course, if it is wet and the mud and puddles are all around, you don't need to additionally soak the hooves. The walks on the morning dew are very effective and can replace the soaking.

And I ask you, don't anoint the hooves with any creams and oils, they are totally useless.

In wet areas (or during the wet seasons) when the ground is soft and wet and a horse is confined in the muddy field or paddock, the waterlogged white line becomes very vulnerable. The horn doesn't wear down in these circumstances and a few days of delay in trimming may lead to bad stretching — and the loss



of a few weeks of your work.

If there are white line problems, trim as soon as the wall becomes just a little bit higher than the sole to prevent new stretching of the yet weak white line. A horse who has no white line stretching and good solar concavity can be trimmed when the wall is 3 mm higher than the sole.

Some horses wear the heels and toe well on their own, they need trimming rarely. In this case, trim such a horse when the side walls require it to prevent flares and chips.

If the toe wall tends to “shift” forwards and white line stretching occurs, trim frequently and keep an eye on the roll. The hooves won’t be good until the white line is sound.

I want to remind you once more that there is a risk of laminitis during the rehab stage.

I also find it necessary to remind you that one of the greatest rivals of hooves and overall horse health is frost. You are risking greatly if you are leaving your horse out in the cold. Keep the hooves warm as you do with your own feet.

At the end of the trim take another set of photographs of all the hooves and put your thoughts on the trim in your hoof diary.

Keep an eye on the horse for the next 24 hours. Check the hoof conditions every day, feel if they are hot.

Forgive yourself the mistakes you’ve made, analyze them and thoroughly prepare for the next trim.

Good luck and may your horses be healthy!

# TESTS

Here we would like to offer you the opportunity to check your ungulological knowledge. The first level of these tests accords the basic ideas of the theory and practice of the School trim. The second level contains questions that imply the knowledge of some nuances and a deeper understanding of the subject. Please, remember that even a perfect score in both levels won't constitute the grounds for considering yourself a specialist, while a great number of incorrect answers surely shows the lack of sufficient theoretical foundation. The tests are considered completed if all the correct answers are marked (there are some questions with several correct answers).

Good luck.

## LEVEL I

### **1. What is the hoof capsule?**

- a) A structure similar to a bird of prey claw or a human fingernail in its structure and functions.
- b) A special organ consisting of hard tissues.
- c) A strongly keratinized and altered skin.

### **2. The work of the hoof mechanism is:**

- a) Usually seen with the naked eye.
- b) Minimal in foals and fully activated when a horse is 3–4 years old.
- c) Directly connected to the work of the cardio-vascular system of a horse.

### **3. The coffin bone:**

- a) Makes the hoof joint together with the navicular bone; its palmar/plantar processes transition into the lateral cartilages.
- b) Touches the digital cushion with its dorsal surface and “hugs” the flexor

tendon with its branches.

- c) Has the extensor processes to which the digital profundus tendon is attached.

#### **4. The hoof frog is:**

- a) A separate structure of the hoof.
- b) Lies underneath the digital cushion.
- c) Has no corium.

#### **5. The coronary band:**

- a) Provides the growth of the hoof wall, protects the extensor tendon.
- b) Is a flexible skin fold which lets the hoof joint flex freely.
- c) Acts like the main hoof blood pump.

#### **6. The white line is:**

- a) The area of white horn which is visible from the solar view of the hoof, between the outer wall horn and the yellowish line which connects the wall and the sole.
- b) A thin stripe of the horn covering the upper 1–3 cm of the hoof wall from the inside.
- c) Horn which grows from the terminal corium and connects the wall and the sole.

#### **7. What is the scoop?**

- a) A shallow solar concavity.
- b) The area of the wall horn “lifted” above the ground which appears if the toe is overgrown.
- c) A natural or artificial sloping arch of the hoof wall in the quarters which corresponds to the zone of the horn lowering during the stance phase.

#### **8. The coffin bone:**

- a) Rests on the firm corium of the sole.
- b) Is attached to the wall with the sensitive laminae of the corium and with the horn wall with the non-sensitive laminae.
- c) Is connected to the walls with the white line.



**9. Lateral cartilages:**

- a) Are attached to the branches of the coffin bone.
- b) Are the part of the hoof joint and act as the shock-absorbers.
- c) Are in the area of the profundus tendon attachment.

**10. What changes happen in the hoof capsule when it's loaded?**

- a) The upper point of the dorsal hoof wall shifts down and backwards, the side walls move apart.
- b) The hoof horn shrinks under the load, mostly in the dorso-palmar/plantar direction.
- c) Dorsal and side walls shift outwards and the heels run under the hoof.

**11. The hooves:**

- a) Are the special blood depot, which is why they are called “the additional liver”.
- b) Helm the venous blood outflow up along the limbs, which is why they are called “the additional heart”.
- c) Have their own separate blood circulatory system.

**12. Choose the correct statement:**

- a) Within the limits of normal one of the front legs of a horse has a steeper hoof and the other is flatter due to the grazing process.
- b) Within the limits of normal the hind hooves are steeper than the front ones, their concavity is deeper and medial and lateral walls have a different angle.

**13. A sound front hoof:**

- a) Steps heel first while walking and with all the sole while trotting and cantering.
- b) Steps heel first while cantering and with all the sole or toe first while walking and trotting.
- c) Steps heel first while trotting and cantering and heel first or with the whole sole while walking.

**14. The weight of the standing horse with proper leg posture is distributed this way:**

- a) Approximately 60 percent of the weight rests on the front legs and 40

percent on the hind ones.

b) Twenty-five percent of the weight rests on the front legs, with 75 percent of it on the hind ones.

**15. Normally the bones of the carpus and tarsus of the standing horse are:**

a) Perpendicular to the ground.

b) Corresponding to the angle of the pasterns.

c) Tilted forwards or backwards according the natural posture.

**16. The temperature of the hoof capsule:**

a) Depends on the intensity of the blood flow.

b) Is uneven due to the peculiarities of the horse's lymphatic system.

c) Is even across the whole hoof capsule.

**17. A sound frog should:**

a) Take two-thirds of the sole length.

b) End at the beginning of the widest part of the hoof, have a firm horn on the upper side and the soft one on the sides.

c) Consist of flexible cartilage tissue.

**18. The shape of the central sulcus or groove of the frog:**

a) Corresponds to the shape of the frog corium.

b) Normally looks like a rather narrow, deep crevasse which allows the frog to widen properly when the hoof mechanism works.

c) Is the guide for estimating the level to which the heel may be lowered.

**19. From the choices below what are the symptoms of the white line stretching?**

a) The hoof has a shape of a "bell", from the sole view the white line is wider than 3 mm; there are cavities between the sole and the wall.

b) The white line is wider than 2 mm and looks dirty, the length of the dorsal wall is more than 10 cm.

c) The white line is wide, looks like the flabby tresses; the chalk-like horn is crumbling out of it when it's picked with the hoof pick while the tresses stay where they are.

**20. Choose the correct statement:**

- a) The sole of the horse's hoof has approximately the same thickness across the whole surface and corresponds to the shape of the corium with its concavity.
- b) The thickness of the sole is maximum in the frog and heel area.
- c) The thickness of the sole grows from heel to toe.

**21. For a horse receiving proper hoof rehabilitation it's necessary:**

- a) To be provided with the possibility to walk actively 24 hours a day on ground that suits the present state of the hooves.
- b) To canter and trot no less than 10 kilometers a day.
- c) To have a personal shelter with an asphalt floor and very soft ground in the paddock.

**22. A horse should be turned out:**

- a) On hard ground in summer and on a softer one in winter.
- b) On any type of ground, because sound hooves adapt to almost every type of ground, including asphalt.
- c) On varied terrain.

**23. The aims of the trim are:**

- a) To obtain a 30 degree angle of the coronet, a 45 degree angle of the dorsal wall of the front hooves, and an angle of 55 degrees of the hind ones.
- b) To balance the hooves in the medio-lateral and dorso-palmar/plantar ratio.
- c) To make the hind hoof pair and the front hoof pair similar in all the main measurements.

**24. On what does the frequency of the trims depend?**

- a) The trim should be done no less than two times a week within the established schedule.
- b) The frequency of the trims depends on the present state of the hooves, the season and the ground type.
- c) The trim should be done every 1.5–2 months.

**25. With the trim we:**

- a) Imitate the natural wearing of sound hooves.
- b) Replace or amplify the daily turnout.



c) Adjust the hooves to the common normal standard.

**26. During the trim:**

- a) A horse should stand on even firm footing. During the trim he may have hay from the floor level.
- b) A horse should stand on even firm or soft footing, in some cases you may trim a recumbent horse.
- c) It is handy to tie a horse with a short rope near the hay net (so that he wouldn't be bored). The trimmer should pick up the legs only from the proper farrier's position (using the variations specific for the front and the hind legs).

**27. To find out if the trim is necessary you should:**

- a) Measure the angles of the hoof.
- b) Remove the spare horn of the sole and the bars with the hoof knife.
- c) Clean the hooves, scrape the old and crumbling horn with a hoof pick, especially in the area of the solar angles and the frog apex.

**28. Choose the correct statement.**

- a) Always hold the hoof knife (of any type) firmly in your fist with the blade facing to your little finger.
- b) Novices should use rather dull knives to prevent harming themselves or the horse.
- c) To control the process better, buy long knives which could be held far from the blade.

**29. While lowering the bars:**

- a) Use the fine side of the rasp.
- b) Cut them with the knife in the toe direction.
- c) Cut them with the knife in the heel direction.

**30. While working with the rasp from the sole side you should try to:**

- a) Make maximally flat long movements.
- b) Make short abrupt movements with the rasp tilted slightly inside the hoof.
- c) Make long movements in both directions ("pushing" and "pulling").

**31. What on the list below is an indication for a trim?**

- a) The sole is crumbling and falling away in layers, the heels have grown higher than the frog and fold under the hoof or “shift” underneath it.
- b) The heels are higher than the sole by 1.5 mm.
- c) The periople horn is crumbling, the solar horn has some flakes and small cracks.

**32. How should you determine the depth of the solar concavity?**

- a) Clean the “dirt line” in the junction of the frog and the sole with the hoof pick and measure the depth.
- b) Trim the area around the frog to 1.5 cm deep with the hoof knife. That would be the true depth of the solar concavity.

**33. You’ve got different data after measuring the heel height with the different methods. What parameter will you choose as the main guide for building your trimming strategy?**

- a) The height of the hooves from the lateral cartilages to the ground.
- b) The angle of the coronet and the angle of the dorsal wall of the hoof.
- c) The level of the sole in the heel-bar triangles and the depth of the collateral grooves.

**34. How much is it reasonable to lower the heels in one trim (if you need to):**

- a) No less than 1 cm.
- b) No more than 5–7 mm.
- c) Less than 2 cm.

**35. What should guide you when you determine the border of the bars and the sole in the heel-bar triangles?**

- a) The horn of the bar is darker and harder.
- b) The horn of the bar always grows from the heels parallel to the frog.
- c) The sole is separated from the bar by the white line although it can be hidden by the horn of an overgrown bar.

**36. The main rule of bar trimming is:**

- a) They need to be removed — cut to the level of the sole and even deeper in the apex area so that the hoof could expand properly.

- b) They need to be left long to lessen the load in the heel area.
- c) They should lie deeper than the wall horn but should be a bit higher than the sole level.

**37. The deep and narrow central sulcus of the frog:**

- a) Could be easily corrected and widened with the help of the knife.
- b) Indicates that the frog started to “work” at last.
- c) Indicates hoof contraction or disease.

**38. After the trim the frog should:**

- a) Be at the level of the hoof walls from heels to apex.
- b) Be at the level of the bars.
- c) Should be at the level of the hoof wall or a bit higher in the heel area (if possible) and be a little lower of that level in the apex area.

**39. The outer edge of the sound hoof should be rolled:**

- a) Along the whole wall perimeter at an angle of 45 degrees — to prevent chips.
- b) In the toe area at an angle of 90 degrees. The same may be done in the quarters if needed.
- c) Only in the toe area of the hoof wall at an angle of 45 degrees to the wall (the rasp should be worked from the outside of the hoof).



## **LEVEL II**

### **1. What helps the blood to go back to the heart?**

- a) Heart and lymph vessels.
- b) Hoof function.
- c) Hoof function and skeletal muscles.

### **2. The hooves get information of the quality of the ground by:**

- a) Mostly from the coronary band sensors and less of it from the frog sensors.
- b) Mostly from the frog sensors and partly from the coronary band sensors.
- c) Equally from the frog and coronary band sensors and from the sensors of the toe callus area as well.

### **3. The excessive frog horn is normally removed:**

- a) By the mechanical wearing of the frog when the hoof walks on the ground or during the trim.
- b) By the natural physiological rotting and tissue rejection.
- c) By the help of the trim and the bacterial decay.

### **4. The hooves in the winter and in the summer:**

- a) Look the same.
- b) In the summer they are more “crumbly”, the sole could have small cracks, the walls grow faster.
- c) In the winter the walls grow faster, but the solar horn is smoother.
- d) The hooves can change depending on the humidity and the roughness of the ground, due to frosts or thaws, droughts or, on the contrary, heavy rains.

### **5. The gradual change of the ground type on which a sound horse lives from the softer one to the rougher one leads to:**

- a) The process of the remodeling of the bone tissue, the digital cushion and the sole.
- b) The growing of the coronary corium thickness.
- c) Laminitis, sole flattening, more fragile horn.

**6. After deshoeing a horse had concavity of 3 cm and was trimmed according this guide so that the concavity has become 1.5 cm high. The next day the horse became lame. It happened because:**

- a) A badly contracted hoof shouldn't be trimmed immediately after the deshoeing.
- b) Apparently, too much of the solar horn was removed in the toe callus area.

**7. The hooves of the wild horses:**

- a) Show how the perfect hoof should look, they are the model and the guide for the trim.
- b) Usually work well and illustrate the common statements of the functions of the different hoof structures.
- c) Make the wild horses suffer and shorten their life span as they are badly deformed without human care. These hooves are the collections of the various diseases and abnormalities.

**8. Which part of the hoof wall indicates the real angle of the coffin bone in the hoof capsule?**

- a) The first centimeter below the coronary band.
- b) The lower third of the hoof capsule.
- c) The two upper thirds of the hoof capsule.

**9. When it is timely to do a blood test if you are going to shift to physiological trimming?**

- a) No later than a month before the trim.
- b) No more than a few days before the trim.
- c) Immediately after the first trim.

**10. When choosing the trimming strategy you should be guided by:**

- a) The length of the dorsal wall, the shape of the wall angle and the depth of the collateral grooves.
- b) The angle of the coronary band, the angle of the dorsal wall and the heel height.
- c) The wideness of the hoof in the coronary area, the angle of the dorsal wall, the depth of the collateral grooves and the depth of the solar concavity.

**11. What in the list below does not indicate the proper position of P3 in the hoof capsule?**

- a) The depth of the collateral grooves is twice deeper than the solar concavity.
- b) A radiograph shows that the extensor process of the coffin bone is at the level of the hairline.
- c) The angle of the first centimeter of the dorsal wall below the coronet is about 45 degrees in the front hooves and about 55 degrees in the hinds, the angle of the coronary band is about 30 degrees.

**12. The angle of the coronary band:**

- a) Is normally equal to the angle of the dorsal wall of the hoof.
- b) Should be about 30 degrees which would guarantee the proper position of the P3 in the hoof capsule.
- c) Shouldn't be considered a clear trimming guide.

**13. The depth of the solar concavity is estimated:**

- a) By the depth of the collateral grooves.
- b) By the difference of the wall height and the sole.
- c) By the measurements in the frog apex area.

**14. Under the frog tissues there are:**

- a) The navicular bone, the coffin bone, the digital extensor tendon, the digital cushion.
- b) The frog corium, the digital cushion, the proximal sesamoid ligament, the navicular bone and bursa.
- c) The deep digital flexor tendon, the digital cushion, the navicular bone.

**15. If the horse is still wearing the shoes, you should:**

- a) Deshoe him immediately to activate the hoof mechanism.
- b) Do a clinical blood test and shift the horse to plastic shoes.
- c) Deshoe the horse gradually, starting with the hinds, constantly monitoring the horse's condition (including radiographs, if needed).

**16. How do you determine which ground type suits a horse in the rehab stage?**

- a) Any type suits a horse as his hooves have no reaction to the change of the



surface they are walking on.

b) During the rehab stage a horse may need soft footing, maybe a rubber one, but later he will need to have access to different types of ground, including an abrasive one.

c) During the rehab stage a horse mostly needs rough ground like asphalt or concrete.

**17. Choose the correct statement:**

a) During the first trim it is important to lower the heels to their physiological standard to restore the dorso-palmar/plantar balance. The other parameters shouldn't bother you at this stage.

b) The freshly deshod hoof and the hoof with a weakened sole should temporarily have the heels higher than the sole.

**18. What of the list below should be removed?**

a) The frog tissues infected by the fungi and bacteria.

b) The soft “seam” between the heel angles and the frog peduncles.

c) The “hooks” of the bars which squeeze the frog.

**19. With which methods can we overcome the white line stretching in the toe?**

a) With the regular rolling of the wall to the water line in the stretched areas.

b) By removing the whole wall edge to the sole in the stretched area.

c) With trimming the hoof walls to the level of the sole.

**20. A horse suffers from the white line stretching. The frontal view shows that the hoof has a “bell” shape. You should:**

a) Carefully rasp the wall horn from the outside to the proper height to remove the flaring and put the hoof into the proper shape.

b) Restore the balance and relieve the walls in the flaring areas.

**21. Should you do the roll on the hind hooves?**

a) The roll is necessary to restore the dorso-plantar balance and if the white line is stretched.

b) It is necessary as well as in the front hooves — to ease the breakover and to let the hoof step heel first.

c) It is done with the toe rasped more than in the front hooves as the hind ones have more oval shape.

**22. To find out if you should trim the hooves you should:**

- a) Cut the excessive horn of the sole around the frog with the knife following the concavity of the live sole.
- b) Soak the hoof and scrape the sole with the rounded tip of the knife.
- c) Scrape the sole with the hoof pick.

**23. What in the list below is the indication for scooping?**

- a) The white line stretching in the quarters if the supports are strong, the sole is thick and there is some “spare” wall height.
- b) The low seat of P3 in the hoof capsule of a horse who lives on soft ground.
- c) The coronary band line arching upwards in the quarters area.

**24. The preparatory examination of the hoof showed that the horn of the bars has overgrown and covered the sole. You should:**

- a) Cut it off with the knife across the whole surface of the hoof, trim the dirt line. You should weaken the bars and keep them that way until the balance is totally restored and the hooves have a strong elastic solar horn which can make a stand against the bars.
- b) Carefully lower the walls with the rasp to the optimal height, remove the bar horn which protrudes over the walls and provide the horse with the movement on the most abrasive ground available.
- c) Grow the hoof walls a little, put the boots on the horse and place him on soft ground. In some time move the horse to rougher ground letting him naturally wear down the bars.

**25. Can you change the dorso-palmar balance of the hoof in Fig. 16.1 in one trim?**

- a) Yes.
- b) No.
- c) There is no need to change the balance.



**Fig. 16.1. © N. Bykova**



**26. Is it possible to lower the heels of these hooves?**

- a) Yes.
- b) No.
- c) I don't know.



**Fig. 16.2. © E. Kuzina**

**27. This hoof:**

- a) Is unhealthy and improperly trimmed.
- b) Has some serious pathologies.
- c) Is healthy but needs the trim of the contracted frog.



**Fig. 16.3. © A. Grigorieva**



**28. You can safely say that the horse in this photograph has:**

- a) An imbalance, the toe is too long.
- b) Navicular disease.
- c) Laminitis with P3 rotation.
- d) Bruises in the hoof wall horn due to some previous disease or injury.



**Fig. 16.4. © O. Shadrina**



**29. What is the main problem you see in this view of the hoof?**

- a) Toe contraction due to imbalance.
- b) Medio-lateral imbalance.
- c) Hypertrophy of the frog and the bars lying down on the sole.
- d) A thinned sole.



**Fig. 16.5. © E. Kuzina**

**30. What are the problems of this hoof?**

- a) Medio-lateral imbalance.
- b) Dorso-palmar imbalance.
- c) Contraction.
- d) Sole thinning.
- e) Fungal infection.
- f) White line stretching.



**Fig. 16.6. © E. Kuzina**

**31. What should be trimmed in this hoof?**

- a) The central groove of the frog should be cut.
- b) The rotten pieces on the sides of the frog should be removed.
- c) The curved bars which squeeze the frog should be cut.
- d) It is not a hoof which should be trimmed, but a rotting frog which should be treated.



**Fig. 16.7. © Zh. Dorokhina**



# ANSWERS TO THE TEST

## LEVEL I

1 — C, 2 — C, 3 — A, 4 — B, 5 — A, 6 — C, 7 — C, 8 — B, 9 — A, 10 — A, 11 — B, 12 — B, 13 — C, 14 — A, 15 — A, 16 — A, 17 — A, 18 — A, 19 — B, 20 — A, 21 — A, 22 — C, 23 — B, 24 — B, 25 — A, 26 — B, 27 — C, 28 — A, 29 — A, 30 — A, 31 — A, 32 — A, 33 — C, 34 — B, 35 — C, 36 — C, 37 — C, 38 — C, 39 — C.

## Your Score

### Less than 20 correct answers.

It's most likely that you've decided to take this test without having any ungulology knowledge, before you've read this book. The result is obvious and miserable.

### 21 to 35 correct answers.

You've made your first steps towards understanding the nature of the horse's hooves and how they should be handled. This amount of knowledge is obviously insufficient for a successful practice, but it is a good start, go on with your studies!

### 36 to 39 correct answers.

You know the ropes pretty well within the limits of this test (it accords the general idea of hooves and trimming). You may use these basics to go deeper into the understanding of hoof, study some peculiarities and continue your preparation for an ungulological practice.

## LEVEL II

1 — C, 2 — B, 3 — A, 4 — A, 5 — A, 6 — A, 7 — B, 8 — A, 9 — B, 10 — A, 11 — A, 12 — C, 13 — C, 14 — C, 15 — C, 16 — B, 17 — B, 18 — A, 19 — B, 20 — B, 21 — A, 22 — C, 23 — B, 24 — B, 25 — C. The dorso-palmar balance of this hoof is not distorted, the walls in the heel and quarters

have overgrown the level of the sole in the bar/heel triangles, they would chip or fold under the heels if they are not trimmed. There is no need to LOWER the heels yet; 26 — C. Despite the fact that the hoof has bad dorso-palmar imbalance, the abrupt lowering of the heels may cause severe problems for the whole locomotor apparatus. The possibility of the lowering depends on many factors, we should see the solar view of the hoof to use the sole level as a guide; 27 — A. This narrow hoof is obviously over trimmed. The sole is thinned, the bars are cut too much, the surface of the heels is not even, the bearing surface area is reduced with the walls beveled inside which leads to the further contraction of the heels; 28 — D. The bruising indicates a pathological process going on inside the hoof, it's hard to tell more precisely with only this photograph; 29 — B, D. The sole of this hoof was thinned earlier, it should be restored, the bars should be lowered; 30 — A, C, E. Contracted heels, fungal infection of the frog; 31 — D. The frog shouldn't be touched or cut, it should be treated with antibacterial and anti-fungal remedies.

## **Your Score**

### **Fewer than 19 correct answers.**

Possibly you've tried to pass this test too early. Your theoretical knowledge is obviously insufficient and an attempt to solve the problems of the living horse may end up with tragedy. Study the theory.

### **20 to 28 correct answers.**

Although the basic statements of the theory and the practice of ungulology are known to you, you still have no comprehensive understanding of the horse's hooves to begin your own practice. If you are forced to trim, be extremely careful and attentive. And continue to study the theory. At this stage you may start to do dissections, they'll make many things clear.

### **29 to 31 correct answers.**

You've competently solved the test tasks, and it means that you've learned or understood the general statements about trimming. Yet, don't forget that the main principles are the individual approach to any case, the ability to understand the consequential result of your actions and the constant urge to deepen the knowledge. A real trimming practice would ask you far more

questions than these short tests. Only knowledge, experience and responsibility may help you find the answers which would benefit the horse.



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