

Measurements Can Help Determine Pathology

by Sarah Nickle

Horses that are given proper nutrition, supportive environments, and allowed movement 24/7 for needed blood flow in the hoof will have a better chance of growing and developing a stronger barefoot hoof. However, some horses are not given that opportunity from the start and may never rehabilitate to expected levels. They may always have off/on or chronic soreness. If the components above have been initiated for several years, there may be a genetic factor or possible damage to the sole corium and vascular system of the hoof, caused by shoeing and/or debilitating care during early development stages of the hoof.

There are measurements you can take of your horse's hoof to help determine pathology. Assessing if your horse has enough sole thickness would be a good place to start. Measure at the apex of the frog and the back of the collateral groove to see if your horse has enough protective sole depth. Studies show that hooves with 1/4" or less at the apex and 1/2" or less at back of collateral groove do not have enough protective sole depth and concavity to support comfortable movement over varied terrain.



Photos show 3/16" at apex of frog and 1/2" back of collateral groove. This hoof does not have enough protective sole depth and concavity to travel soundly over diverse terrain, so boot protection is recommended.

Next, measure for 1/3 – 2/3 sole and frog proportion (Dr. Robert Bowker). From the apex of the frog to end of toe wall, ideally, should be 1/3 of the solar surface. If there is more than this, the toe is too long and needs to be shortened over time. Measure from the back of the frog to the apex. This measurement should represent 2/3 of the solar surface. More measurable weight-bearing surface should be behind the apex of the frog than in front, for proper balance.

Examples show 3/16" at apex of frog and 1/2" back of collateral groove. This hoof does not have enough protective sole depth and concavity to travel soundly over diverse terrain. Boot protection is recommended.

Also, measure to evaluate balance and proportion. Turn the hoof over and measure from the toe to the back of the heel buttress, and then across the widest section of the hoof. Generally speaking, these measurements are close in range. If not, some examples of distortion could be flare, excessive toe length, stretched white line, and contracted heels.



All photos courtesy Sarah Nickle

Hoof displaying the desirable 1/3 to 2/3 sole and frog proportions as recommended by Dr. Robert Bowker.

The measurements mentioned are guidelines intended to help horse owners assess pathology and distortion. Each hoof needs to be measured and analyzed individually. Guidance from a natural hoof care professional is recommended, for trimming techniques and approach. 🐾

About the author: Sarah J. Nickle lives in central New York with her husband, son, 2 horses, and 3 cats. Sarah is originally from Vermont and grew up riding in the Green Mountains. She is an advocate for natural hoof care and creator of the Precision Hoof Pick. Sarah has a passion for educating and introducing horse owners to natural hoof care practices. She can be reached at www.precisionhoofpick.com

Heel height should be short. 1/4" down to 1/16" above live sole plane. Measure from the bottom of the collateral groove to heel wall surface. Measure and balance both medial and lateral sides. Recommended height will take time to achieve if the soft tissue in the back of the hoof is not healthy enough to support the weight-bearing load as it should. Do not mistake run under heels for short heels.

Measure toe length to assess overgrowth. An average size horse with a healthy hoof will rarely exceed a 3 1/2" length. Measure from coronet band to end of toe wall.



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