

Wet feet: the root cause of hoof problems

Poor hoof quality can be the result of multiple factors, including poor nutrition, lack of proper trimming and shoeing, excess moisture, and genetics. One of the more common causes of hoof problems is too much moisture in the hoof. Horses that live in wet, humid environments, those that are bathed repeatedly, and horses that are kept on damp bedding or stand in the mud for long periods of time are at the greatest risk.



Too much of a good thing

To remain healthy, the hoof absorbs nutrients and moisture from the blood stream. If a horse is well-nourished and well-hydrated his hooves will be healthy. Even a hoof that is a little dry and cracked on the outside will have a healthy joint capsule on the inside. In fact, the cracks in a dry hoof are often superficial. However, the hoof is naturally porous and will absorb moisture from the environment. If too much moisture is absorbed it negatively affects hoof quality. Imagine a simple paper plate: you can pour water over it and it runs off, but if you leave it sitting in water for days and days, it starts to deteriorate and break apart. The same thing can happen to your horse's hooves.

The hoof wall is made up of a system of ridged, closely packed horn tubules. The tubules are arranged vertically and parallel to each other. The tubules are made up mainly of a protein called keratin. The keratin molecules are held

together by hydrogen bonds. Hooves are at their strongest when the hoof tubules are dry and the hydrogen bonds are strong. In a hoof exposed to normal moisture levels, the sole is cupped, the hoof wall is sturdy, and it operates as a shock absorber when the horse moves. When the hoof absorbs water from the environment, the water weakens and breaks the hydrogen bonds between the tubules, making the hoof too flexible and reducing the hoof's structural integrity and shock-absorbing capabilities.

A hoof that is constantly exposed to high moisture levels becomes increasingly soft and weak. The sole tends to flatten out and the hoof is no longer capable of properly supporting the weight of horse and rider. Soft feet can lead to lameness, particularly when a horse is asked to work on hard surfaces or is being exercised rigorously. Hooves that are continuously wet are also more porous and therefore more prone to bacterial and fungal infections. Soft hooves tend to develop deep cracks, chipped areas and flat soles where bacteria and fungi set up house-keeping. The sole of the hoof, which is the most porous section of the foot, is particularly susceptible to disease.

Often the outward appearance of the hoof is deceiving. Overly moist feet tend to swell so cracks are not as noticeable. The hoof may look shiny and healthy but problems are brewing. It won't be long before the hoof wall crumbles, clinches pop, and disease sets in.

Six tips on drying out

Reducing the amount of moisture your horse's feet are exposed to can be as simple as making a few management changes.

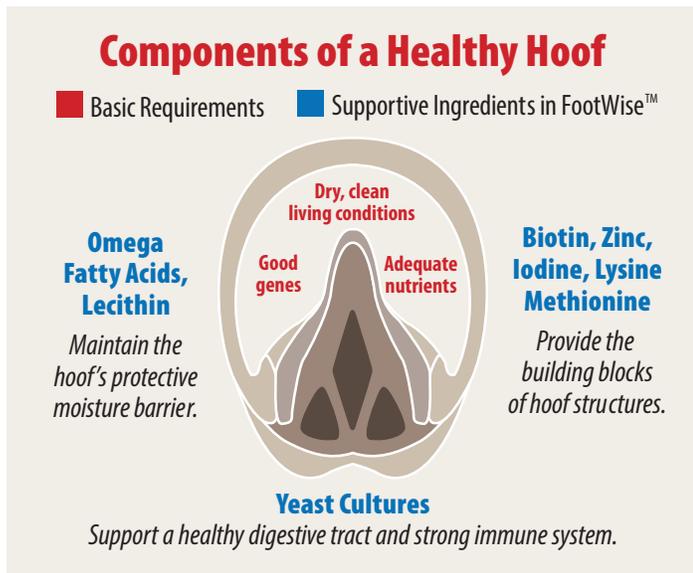
- Keep stalls clean.
- Bed on absorbent wood products.
- Give sponge baths instead of hose baths.
- Make sure your wash area is free of mud and puddles.
- Provide a dry place, such as a well-drained gravel pad or covered shed, for horses to hang out in during wet, muddy weather.
- Turn horses out in a covered arena with dry footing during the wettest season.

Hoof supplements and the role they play

In horses that are rebuilding a new foot or those that live in challenging conditions, providing the right complement of nutrients is essential to optimal hoof growth and quality. In most cases the best way to ensure these nutrients are readily available is to feed a well-formulated hoof supplement.

Ingredients that support strong hooves

High-quality protein that provides both lysine and methionine is essential. The hoof is composed of 93% protein (on a dry matter basis). A total of 11 amino acids have been identified in the structures of the hoof. Supplying adequate amounts of the first limiting amino acid, lysine, is necessary for hoof growth. Methionine's job is to bind keratin fibers within the hoof, giving the hoof wall its strength.



Microminerals such as iodine, copper and zinc are critical to the synthesis of the connective tissues that hold the hoof together. Minerals that have been chelated are more readily available to the horse.

The B vitamin biotin should be provided at a level of at least 20 mg per day. While fortified feeds contain some biotin it is usually not enough to impact hoof quality.

Omega-3 fatty acids found in soybeans and lecithin are utilized to create a moisture barrier in the hoof that repels excess moisture.

Additional prebiotics and yeast cultures added to a supplement support the activity of hindgut microorganisms and increase the digestibility and absorption of essential nutrients.

Recommended supplement:



FootWise™

- Contains a complete complement of the ingredients necessary for high-quality hoof growth
- Maintains healthy hoof tissues
- Sustains a strong, resilient hoof wall
- Supports regrowth of a healthy hoof after injury or surgery

The maintenance dose of FootWise is 1 ounce per day. Individuals that need additional support can receive 2 ounces daily.

Veterinarians frequently recommend FootWise for horses that are:

- Genetically predisposed to bad feet
- Living in wet and/or muddy conditions
- Nutrient-deficient because of diet restrictions
- Recovering from illness, injury or surgery
- Training or competing under a demanding schedule