NEW WAYS TO BEAT LAMINITIS

Treating and preventing laminitis can be tough. Here's the latest on some encouraging alternative methods, detailed by natural hoof care practitioner Pete Ramey and veterinarian Joyce Harman.

BY **DEBBIE MOORS**
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This spring, as racehorse Barbaro was recovering from a broken leg, reporters announced he'd developed laminitis in the opposite foot. While many heard an unfamiliar medical term, we horse owners drew a collective breath at news of the dreaded diagnosis. We knew just what was at stake.

Fortunately, reports at the time this article went to press say Barbaro is recovering, but laminitis was a clear threat to his recovery. The disease is a leading killer of horses—second only to colic. And when you've got a horse that suffers occasional or chronic bouts with laminitis, it can be devastating and discouraging.

Laminitis is an inflammation of the "laminae," a fibrous structure within the hoof that extends from the hoof wall outward to attach to the coffin bone. Think of it as the tissue that "laminates" the hoof wall to the coffin bone.

If your horse suffers from acute laminitis—those flare-ups that come, for example, on the heels of a spring eating binge—his laminae are inflamed, becoming very weak.

Horses that have lost proper wall attachment to the coffin bone have "foundered." As natural hoof care practitioner Pete Ramey says, "the laminae and hoof wall have parted ways." This is often readily visible with the naked eye if it appears a smaller hoof is trying to grow in at the top (just below the coronet) and then the wall flares out like a bell-shape as it approaches the ground. The coffin bone rotates down and away from the hoof wall under the horse's weight (in some cases, you'll see it pressing through the sole) and your horse's health and future will be compromised.

The traditional approach to treating and preventing laminitis involves adjusting your horse's diet, limiting movement, alleviating his pain, and adding pads to his shoes for support and comfort.

But new and alternative treatments for laminitis, such as barefoot trims, exercise, supplements, and acupuncture, are proving surprisingly effective.

In this article, we'll lead you through all of the encouraging new remedies, plus give you the latest thinking on eliminating sugar, a potential cause of laminitis, from your horse's diet. We'll also tell you where to go for more information on all these strategies.

"This teenage Quarter Horse foundered severely every spring and fall, then spent the rest of the year teetering back and forth between periods of comfort and discomfort," says Pete. ABOVE LEFT: This photo was taken the night Pete received the call about the horse. LEFT: This is the same foot, 10 weeks later. "At this point," says Pete, "The horse is pasture sound and being comfortably ridden in boots with foam insoles."ABOVE: Fourteen months later. "With a little bit of corrective trimming and a lot of dietary education for the owners, she's grown very nice feet, is very happy and comfortable, and enjoys trail riding in the mountains and on gravel roads in hoof boots. She has made it almost two years (and counting) since her last laminitis episode," Pete says.

STRATEGY: SOLE SUPPORT

What it is: Using a natural-practitioner's barefoot trim plus boots and pads to provide support to the coffin bone through the sole.

How & why it works: By supporting the sole (instead of the hoof wall, as with traditional shoes), boots and pads alleviate pain while a healthy hoof and laminae regrow around the coffin bone. The beveled walls of a barefoot trim place a "squeezing" effect on the laminae, rather than a separational force and distribute much of the weight across the sole, frogs, bars, and heels instead of the hoof wall. This minimizes or eliminates the mechanical stress on the laminae.

By using boots and pads for support and protection during recovery, a natural practitioner is able to keep the sole protected and the coffin bone well supported while the new hoof grows in.

"If you attach the shoe to the hoof wall and provide perfect support, then the coffin bone is supported that day," says Pete. "But the walls are constantly growing, the support is creeping away—and the coffin bone is free to creep away right with it. This is the primary reason founder seems so hopeless to many farriers."

Insights & recommendations: As Pete is quick to point out, the work that he and the vet do to help the horse heal can only go so far—diet and exercise are critical to a horse's recovery. (See "Movement as Medicine," this page, and "Stamp Out Sugar," page 78.) "This is very similar to Type 2 diabetes in humans. The number-one reason diabetic humans are hospitalized is foot pathology; the number-two reason is problems with wound healing. Human doctors combat these problems with diet and exercise as the most important factors and so do we."

Pete also says one of the biggest myths he encounters with laminitis is the belief that it can't be fixed—particularly in cases where the coffin bone has rotated through the sole. But he's seen many cases of full rotation where the horse has recovered and gone on to lead an active, happy life. (See page 78 for X-rays showing one of these cases.)

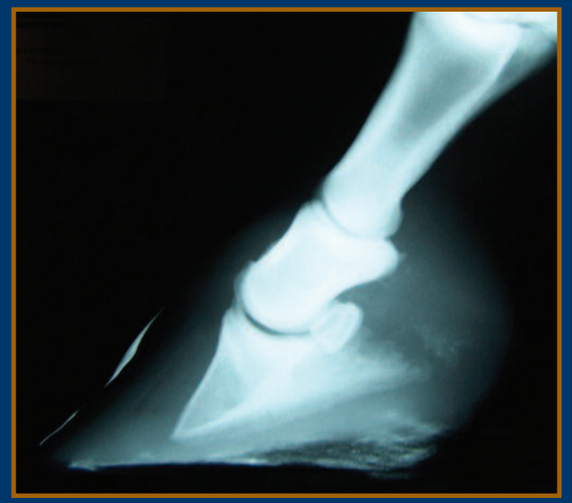
Recovery time depends on the horse. Once Pete has trimmed the hoof and boots and pads are in place, he returns every two to four weeks to provide another trim. The horse is then allowed to go barefoot as soon as comfort and adequate sole thickness is achieved. Full re-growth of the walls can take as long as four months to two years, depending on movement of the horse. Once the horse grows a healthy hoof, Pete recommends a regular four- to six-week trim schedule. (To find a natural hoof care practitioner, see Pete Ramey's Web site, listed in "Resources," page 79.)

STRATEGY: MOVEMENT AS MEDICINE

What it is: Turning out and encouraging your horse to move.

How & why it works: Exercise stimulates circulation and can reduce weight, but perhaps most importantly, exercise makes it easier for the horse's body to process sugar (see "Stamp Out Sugar," page 78). At the same time, horses that get exercise are able to grow a healthy hoof faster than sedentary, stall-bound horses.

Insights & recommendations: If you've ever had a horse in a full-blown case of laminitis, you may feel a little dubious about getting that horse moving. And Pete asserts that you should never force-walk a horse in pain. However, once your horse is outfitted in pads and boots as described in "Sole Support," above, he'll likely feel much more comfortable moving around.



This X-ray shows a 15-year-old Quarter Horse with the coffin bone penetrating the bottom of the foot. "The horse was covered with 'bed sores,' and unable to walk forward," Pete recalls. "He actually shuffled around in reverse trying to graze."

An X-ray of the same foot, six months later shows the coffin bone back in position. "The horse is currently barefoot and working for a living as a lesson horse at a riding school," Pete reports. "He's very happy, comfortable, and enjoying his work."

At first, exercise may simply be hand-walking or putting the horse in a pen where he can move around at will. As his recovery progresses, you'll be able to increase the exercise gradually to "normal."

Pete recalls a situation where he finished a trim on a foundered horse that had been in the stall for several weeks and suggested his customers—two vet students and a vet tech—turn the horse out in a paddock to give him a chance to move around.

His customers said the attending vet wanted them to leave the horse in the stall until it felt better and the temperature and digital pulse were normal. Knowing that he needed to get the horse moving, but not wanting to undermine the vet, Pete tried a different tack.

"I asked them if it would be within their vet's prescription to turn the horse out if I could make her comfortable and make the temperature and digital pulse normal before I left."

When his customers dubiously agreed, he applied boots and full pads, then asked the owner to walk the horse continuously for 15 minutes, telling her to return immediately if the horse showed any lameness.

"The horse strode out of there perfectly comfortable, and then came back 15 minutes later with a normal digital pulse and no elevated heat."

STRATEGY: STAMP OUT SUGAR

What it is: Decreasing your horse's sugar intake by careful diet management.

How & why it works: Many hays and grains available to horsemen contain sugars and starches that weren't normally present in a horse's natural diet. Your hay may contain more than 20 percent sugar and starch. When these sugars pass undigested into the gut, they undergo rapid fermentation to create lactic acid, which causes certain bad bacteria to increase. Some research has shown that if these bacteria reach the laminae, they trigger enzyme production that can cause the laminae to fail. By decreasing sugar intake you'll be more likely to ward off future attacks.

Insights & recommendations: Sugar isn't just found in sweet feeds—hay and grass contain varying amounts, as well. Veterinarian Joyce Harman points out that some horses can tolerate more than others, but when a horse is in the early stages of an acute attack, grass and grains should be held until the horse is doing well in recovery. She offers these tips for decreasing the sugar in your horse's diet.

• *Find hay that's low in sugars called fructans.* "In general, late-cut hay that's starting to go to seed may have a lower sugar content," she says, adding that you can't tell sugar content by looking at the hay. The only way to know for sure is to have your hay tested (see "Resources," page 79, for more information).

• *Cut grain.* If your horse is overweight, Joyce advises that ½-cup of grain may be all he really needs (just enough to help him take in supplements—more on that below). Oats or barley are preferable—they tend to be lower in rapidly soluble carbohydrates.

• *Check labels.* While some feed companies are starting to market low-carbohydrate feeds, Joyce says it's important to check labels to see if any straight sugar has been added to the mix. Avoid any feeds that have molasses or corn syrup in them. These sugars are rapidly absorbed by the digestive tract. The more heavily processed the grain is, the more likely it is to overload the small intestine and dump sugars into the large intestine.

• *Try a muzzle or dry lot.* Limiting access to grass is key, but in some cases, it's easier said than done. Muzzles can help keep a horse from overeating, but still gives him a chance to be out where he can exercise and socialize. For some horses, dry lots may be necessary. "There are horses who won't wear muzzles—they remove them, or have buddies who remove them," Joyce admits. (Joyce offers a muzzle on her Web site, www.harmanyequine.com, that she says more horses seem to tolerate.)

• *Limit sweet treats.* Try to find horse treats that don't have sugar in them. Also, carrots are relatively high in glucose. "A better alternative would be apples, which don't trigger as much insulin response as glucose," Joyce explains.

• *Soak your hay.* If your horse is extremely sensitive to sugars in hay, Harman says soaking the hay during laminitic attacks (or until his recovery is going well) might be helpful. Kathryn Watts, research director for Rocky Mountain Research & Consulting, in Center, Colorado, has conducted studies and found that soaking hay just before feeding for at least 60 minutes in clean, cold water, or 30 minutes in hot water, then draining, can reduce the amount of sugar in hay. "The average reduction in sugar over 15 samples of a variety of hays was 31 percent," she reports.

STRATEGY: SUPPLEMENT THERAPY

What it is: Providing nutritional support that can stimulate circulation and help with blood sugar levels.

How & why it works: By improving insulin transport to the cells, flax (omega 3 fats), magnesium, chromium, and vanadium can improve insulin sensitivity and translate sugar into usable energy at the cellular level. Additional supplements help improve blood flow and overall health.

Insights & recommendations: In the September '06 issue of *Horse & Rider*, Joyce talked about 10 supplements for a healthy horse. Four of those supplements (flax, Coenzyme Q-10, Vitamin C, and free-choice minerals) are considered beneficial for horses prone to laminitis. In addition, magnesium, chromium, and vanadium have been used for humans (particularly for diabetes), and Joyce reports that her clients have seen good results with their laminitic horses.

Insulin is a hormone that helps take glucose into the cell so that it can be burned as fuel. Horses that have insulin resistance (and are at risk for laminitis, as a result) have less ability to get sugars into the muscle cells for energy—so they store the sugar as fat.

"Magnesium, chromium, and vanadium work to increase insulin sensitivity and transport glucose into the cells. Each works on different transport pathways into the cell. Some horses respond beautifully to just one (usually magnesium), but some horses will end up needing all three," Joyce says.

For an average-size horse, she recommends daily doses of 100 milligrams of vanadium, 2 to 4 milligrams of chromium, and 1 to 5 grams of magnesium. She uses these supplements for the horse's lifetime, not just during a flare-up.

(*Note:* Some forms are more absorbable than others. Five grams of magnesium sulfate may be equal to 1 gram of magnesium citrate, which is more easily absorbed.)

STRATEGY: ACUPUNCTURE THERAPY

What it is: An ancient Chinese art and science that uses hair-thin needles inserted through specific acupuncture points to stimulate healing.

How & why it works: Acupuncture operates on the concept that there are energy pathways along the body. Along these pathways, called meridians, are acupuncture points. "It's easiest to understand the acupuncture system if it's compared to an electrical system," Joyce explains. "The points are like dimmer switches, so, if the flow of energy gets blocked, it is like turning a dimmer switch down and not allowing much electricity to get through. If a point is treated with acupuncture, it is like turning the dimmer switch back on and allowing the energy to flow again."

Insights & recommendations: A veterinarian trained in Chinese medicine will assess your horse based on various characteristics, including the time of year he most often suffers from acute attacks of laminitis. Based on those characteristics, she may try acupuncture in combination with Chinese herbal remedies. (For more information on Chinese medicine, log on to www.HorseandRider.com. To find a veterinarian trained in Chinese medicine, see "Resources," above.)

STRATEGY: HOMEOPATHIC HEALING

What it is: A natural medicine approach that uses very dilute substances to trigger a healing response in the body.

How & why it works: Homeopathic remedies are substances that, in large quantities, might cause the problem you're trying to prevent, but in small, very dilute doses, are thought to actually trigger the body to respond with healing.

Insights & recommendations: Joyce explains that there are two treatments horse owners can try during the early stages of laminitis (or if you suspect your horse has overeaten). If your horse has overeaten or is sore after overindulging in spring grass, she suggests a remedy called "nux vomica,"—a remedy used for humans who overindulge—for three to five days. If your horse is just starting to get sore, she says another remedy to try is "aconite," which you'd use for about two to three days.

Homeopathic remedies are found at most health food stores. The small, white pills come in strengths of 6, 12, or 30. For either of the two remedies above, Joyce recommends using the strongest (30) in a dosage of six to eight pellets once or twice a day.

If you don't see a change with the remedies above, find a veterinarian who practices homeopathy (see "Resources," above).

Joyce says she's seen homeopathy work in literally hundreds of cases, and she feels it's one of the keys to bringing laminitic horses as close to a cure as possible.

"One client had a horse who'd become so sensitive to grass that he couldn't have even a few bites without coming up sore. Nux vomica is his remedy. It's been about two years now, and he's been out on grass this entire year without needing a single dose of nux vomica," she reports. ■

RESOURCES

- www.hoofrehab.com: Pete Ramey's Web site on natural hoof care, with a link for finding help in your area. (Check out his articles, along with photos of case studies.)
- www.harmanyequine.com: Dr. Joyce Harman's Web site, with links to her article, "Natural Treatment for Laminitis." She also offers a grazing muzzle for purchase on the site.
- www.safergrass.org: Dr. Kathryn Watt's Web site with volumes of information on diet, forage research, and sugar and laminitis.
- www.dairyone.com: Information on how to have your hay tested for sugar content.
- Ahvma.org or theavh.org: To locate a veterinarian who practices homeopathic medicine.
- Aava.org or ivas.org: To find a veterinarian who practices acupuncture and/or Chinese medicine.