

# Stumbling May Be Sign Of Serious Problem

**Dr. Karen Gellman, Ph.D.**

*Q. Now that the snow has finally melted and the outdoor ring has thawed, I am starting to spend more time in the saddle. But Skippy, my 12-year-old Thoroughbred, seems to be having a hard time getting back into the swing of things. He is dragging his feet and stumbling a lot, even after I warm him up. He didn't have any problems in the fall before the outdoor ring froze. What could be causing this problem?*

A. Foot dragging or stumbling is never normal, such behavior implies a flaw in gait timing: Either he is not getting a foot off the ground fast enough or not putting the next foot down soon enough. The simplest scenario is a problem with the environment. Could his trouble be due to deep or slippery footing in the recently thawed outdoor ring? That is an endemic problem this time of year in the Northeast. His feet could literally be getting stuck in the mud, delaying break-over and disrupting the gait. This is an easy one to rule out. Take him on a dry road or over to an indoor arena with firm footing and see if your problem persists. With luck, you may have an instant cure.

## Brain To Hoof Functions

If the footing is not the culprit, we need to review further possibilities. Gait timing is controlled by central patterning mechanisms in the brain, and is an innate, subconscious function. Locomotion performance is affected by the integrity of the nervous system, in particular by the nerves called mechano-receptors that report to the brain on where the joints are at all times. This process is called *proprioception*. Clearly, he needs to know exactly where his hoof is, so that its contact with the ground does not take him by surprise.

Malfunctions in proprioception can be due to problems in the central nervous system, or problems with the signals from mechano-receptors. While it is still too early in the season to worry about new infections from most insect-borne neurologic diseases (like West Nile virus or Lyme disease), you can always worry about equine protozoal myeloencephalitis (EPM). If your horse has had a history of one of these diseases in the past, early spring is a common time to experience a recrudescence.

From a traditional Chinese medicine perspective, diseases like Lyme or EPM that wax and wane are considered a "wind" pattern, because they come and go like the wind. The spring is the season associated with windy weather, and we see more

wind conditions resurfacing. Another possible trigger is that an animal with latent EPM or Borreliosis (Lyme) is likely to have problems with immune modulation. Most veterinary health maintenance programs include numerous spring vaccinations, which can be an enormous challenge to the immune system. In some horses, this challenge can set off either an auto-immune response or allow latent organisms to flourish. Your general practice vet can do a thorough neurologic examination, and perhaps test for the suspected organism from your horse's past.

## Improper Foot Balance

But, by far, the most common cause of gait problems I see in practice is improper foot balance. When a horse is standing on a long toe and a low heel, the toe of the coffin bone is tipped up compared to the heel. This distorted proprioceptive information is interpreted by the higher functions of the brain that he is standing on a hill, and so he adjusts his posture accordingly.

Look at your horse when he is just standing, relaxed, on a level surface. The normal equine default posture is standing square with cannon bones perpendicular to the ground. I suspect that Skippy's front legs are angling backward and his hind legs are angling forward, to some degree.

This pose, called "goat-on-a-rock," is a typical compensatory posture for long-toe/low-heel syndrome. The hind end bears more than its fair share of weight, eventually resulting in overload injuries to the hock joint cartilages and osteoarthritis. The neck is carried in a distorted position to counterbalance the weight shift, resulting in stress on the cervical thoracic junction, at the base of the neck. This chronic compensation pattern not only can cause stumbling and toe dragging, but is a major source of back and neck pain, sore haunches, and arthritis in the hind limb joints.

## Standing Posture Is Important!

Standing posture is important because most of our horses spend 23 hours a day standing around. While the standing horse is able to compensate for distorted neural information though postural changes, different issues come into play during locomotion. In any step, the heel contacts the ground first, the weight of the body is maximized when centered over the flat hoof, then finally the toe lifts off or "breaks over" as the body moves forward and the leg is retracted in preparation for the next step. When the feet are bal-

anced correctly, with the center of weight-bearing aligned with the center of rotation of the coffin joint, the horse can balance himself more athletically, and direct his energy toward being brilliant, rather than trying not to fall down.

When the toe is too long, it delays breakover, hence the dragging. Delayed breakover delays the weight-bearing phase of the next stride, which leads to stumbling.

A fast and dirty way of assessing your horse's foot balance is to examine each shoe. When the foot is balanced, the shoe wears evenly. Unless you ride exclusively on rubberized footing, you can see tiny scratches on the steel of a shoe in wear. When the farrier sets your horse's breakover too far forward (long toe), you will see many more little scratches on the leading edge of the shoe than elsewhere. This is caused by friction as he drags the toe along the ground while trying to pick up his foot. Next, look at the triangle outlined by the frog. His heel weight-bearing surface should go all the way back to the widest point of that triangle. Last, look at the oval or circle made by the hoof or shoe. The widest part of the foot, from side to side, should be centered between the heel and the toe. That way, his weight is evenly distributed across the hoof.

## Piecing It Together

A doctor once said to me, "You know, you're allowed to have more than one thing wrong with you." Perhaps the foot balance issue has been with Skippy for a while, but he is so athletic, he has compensated perfectly. Along comes a confounding factor...perhaps he went longer than usual between shoeings and has an especially long toe. Perhaps getting older, his tolerance for discomfort has grown smaller, or he has a touch of arthritis now. If he has been experiencing postural aberrations for a long time, after correcting the foot balance, he may benefit from further postural rehabilitation, such as TEAM or chiropractic work. Hopefully you can resolve this problem before you or he gets hurt.

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Horse News: Karen Gellman

**'GOAT-ON-A-ROCK'** — Navigator, a 10-year-old Thoroughbred, demonstrates 'goat-on-a-rock' posture at rest (above), a sign of long-toe, low-heel syndrome. He presented for chronic back pain and has a history of front foot tenderness. Below is Navigator after cervical manipulation and exercises to re-set proprioception. Eventually, he will revert to the compensatory posture if his foot balance is not corrected.

