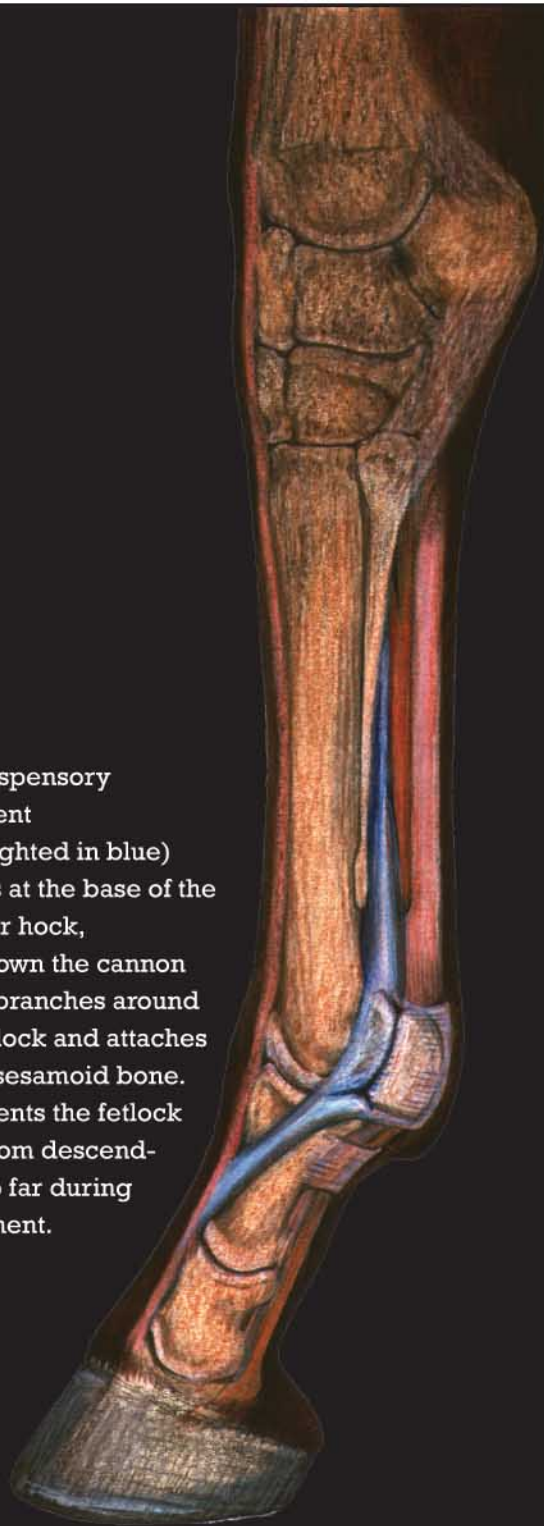


IN SUSPENSE

A suspensory injury doesn't have to cramp your horse's style.

By ABIGAIL BOATWRIGHT

The suspensory ligament (highlighted in blue) begins at the base of the knee or hock, runs down the cannon bone, branches around the fetlock and attaches to the sesamoid bone. It prevents the fetlock joint from descending too far during movement.



ROBIN PETERSON

When one thinks of events where suspensory ligament injuries occur, high-octane sports like reining and jumping come to mind. Deep impact and hard stops in those events can set horses up for such an injury. But you might be surprised to learn that even seemingly sedate performers, like Western pleasure horses, can also succumb to suspensory-related lameness. Read on as two lameness specialists explain how to recognize, treat and avoid suspensory injuries.

WHAT IS A SUSPENSORY LIGAMENT INJURY?

The suspensory is a ligament that begins at the base of the knee on the front leg and at the hock on the back leg. It runs down the back of the cannon bone, branching to the inside and outside of the fetlock where it attaches to the sesamoid bone. This important ligament prevents the fetlock joint from descending too far while in motion.

When a suspensory ligament is injured, the condition is known as desmitis. Desmitis can range from inflammation of the suspensory to tearing of the fibers. When trauma occurs to the ligament fibers, it appears as lesions visible on an ultrasound or MRI machine.

In an event like Western pleasure, front leg suspensory injuries are more common in younger horses while hind suspensory injuries are more frequently diagnosed in seasoned performers, says David Dutton, D.V.M., a veterinarian from Boerne, Texas.

"When we ask horses that are really upright in their fetlocks to move out more in their front end while that suspensory is still adapting early on in their training, that's where we see suspensory injuries in the front legs," Dutton said. "As those older horses move off their hind ends with more collection and repetitive movement, that is where I tend to see hind-end suspensory problems."

WHY ARE ALL-AROUND AND WESTERN PLEASURE PERFORMERS SUSCEPTIBLE?

Suspensory ligament injuries are common in equine sports that demand a high degree of impact, such as barrel racing and cutting. It would seem at first glance that pleasure horses compete in a low-impact setting. But both Dutton and Terrell, Texas, veterinarian Kenton Arnold, D.V.M., says conformation problems combined with repetitive movement and a highly specific way of going can put stress on suspensory ligaments.

"I think conformation and repetitive motion can play a role in suspensory injuries in pleasure horses," Dutton said. "I saw a gait analysis of pleasure horses, and the conclusion was that the way we ask them to move is the reverse of what is natural. They are moving in a different manner in comparison to other disciplines,



and that is where we get injuries and stress strain on both joints and the suspensory ligaments.”

Arnold says conformation flaws and increased levels of competition seem to trigger leg injuries in horses.

“Big-bodied, finer-boned, smaller-footed horses tend to have more problems, both in the foot and in the suspensory,” Arnold said. “The seriousness of training that begins at a younger age is also a factor.”

IS THE FREQUENCY OF SUSPENSORY INJURIES INCREASING?

In his practice, Arnold has diagnosed more pleasure horses with suspensory injuries in the last few years. He says possible causes could be particular bloodlines, intensive training or improved diagnostic technology.

“It’s very common for pleasure horses to get sore hocks,” Arnold said. “I think a lot of it has to do with how collected the horses are. Rear-end suspensories can go hand-in-hand with hock problems. If their hocks get sore, it’s common for their suspensories to get sore. In the past, we might have done more hock injections, but now we’re getting better at diagnosing suspensory injuries.”

Dutton says he sees a significant amount of suspensory injuries, but he has not noticed an increase in the percentage of pleasure horses diagnosed.

“I don’t think we’re seeing a significantly higher percentage of pleasure horses having it as compared to other disciplines,” Dutton said. “We’re just able to diagnose them more accurately.”

HOW ARE SUSPENSORY INJURIES DIAGNOSED?

Symptoms of a suspensory injury typically include a low- to medium-grade lameness. With front suspensory lameness, a horse typically displays a shortened forward stride. The lameness might also be more noticeable when the horse ridden in a circle, with the injured leg is on the outside of the arc.

For a hind suspensory, the horse often exhibits a significant change of movement in the hip area; the hip tends to drop on the affected side.

“As we go through the diagnostics via the blocks, the flexions and the lameness exam, we can localize and identify that the problem is in the suspensory,” Dutton said.

Traditionally, ultrasound has been the best diagnostic tool in detecting suspensory injuries. Arnold says an

“Conformation and repetitive motion can play a role in suspensory injuries.”

Conformation and repetitive motion can lead to suspensory injuries, even in low-impact disciplines like Western pleasure. Suspensory ligament problems are more common on the front leg in young horses and in the rear limbs in older horses.



JESSICA HEIN

Suspensory ligament injuries aren't limited to high-impact events like jumping or barrel racing.



APHA FILE PHOTO

MRI shows significant lesions that an ultrasound might sometimes miss.

"Before using an MRI, if we didn't see the damage on the ultrasound, we would still treat it but we might not consider it to be as serious of an injury as we might have otherwise," Arnold said.

HOW CAN A SUSPENSORY INJURY BE TREATED?

Arnold typically uses topical anti-inflammatory creams and medicated sweats to reduce inflammation and pain in milder suspensory injuries.

Rest is another important facet to Arnold's treatment recommendations, but depending on the horse's occupation, it might not be feasible.

"With show horses, rest isn't always an option, so we tend to treat those horses more aggressively, where rest would be just as beneficial," Arnold said.

Dutton mainly uses plasma-rich platelets and focused shockwave therapy to treat suspensory injuries.

With treatment that includes plasma-rich platelets, a veterinarian will harvest the horse's blood and process it to get plasma-rich cell fragments that are then injected into ligament lesions.

"PRP has a lot of growth factors that stimulate healing," Dutton said. "It reduces ongoing inflammation that causes increased degradation of the suspensory."

Focused shockwave therapy is a pressure wave similar to a sound wave. When the suspensory ligament is targeted with shockwaves, blood flow is increased to that area by small blood vessels, which promotes healing.

"Focused shockwave therapy blocks inflammation and stimulates growth factors," Dutton said. "It also helps to make the collagen in the fibers improve the elasticity and strength within the suspensory, which decreases the potential for re-injury."

Stem cell therapy is a more advanced treatment used to help regenerate ligament fibers. Arnold says he's seen veterinarians yield promising results in suspensory injuries using stem cell therapy.

HOW CAN SUSPENSORY INJURIES BE PREVENTED?

Arnold says one of the easiest ways to prevent injuries in your horse is to train on a consistent and gradual basis.

"Horses get hurt when you get two weeks behind and try to cram in sessions to catch up, or you ask them to do something they're not ready to do yet," Arnold said.

Working with your veterinarian and farrier to correctly shoe your horse is another way to decrease the degree of future suspensory problems. Dutton says a proper ratio between the



inside-to-outside balance of the hoof is crucial to reducing suspensory injuries. He recommends using X-ray images of your horse's hooves to evaluate conformation and mechanics so the farrier can best shoe your horse.

"It's kind of like building a house," Dutton said. "If you have a good foundation, the rest of your structure is going to hold up a lot better. When our foundation is off, then we start having other problems."

Proper footing might reduce suspensory injuries. Dutton recommends maintaining your arena surface at a level that the horse can easily move through, rather than allowing it to struggle through too-deep footing.

"Prevention-wise, ground conditioning is a factor," Dutton said. "I think if you have super-deep ground, you're more apt to have suspensory problems than if you have proper ground."

Dutton says ligament strength can be improved by controlled exercise for horses between the ages of 1 and 2. That time period is when the suspensory ligament is still maturing and the potential to condition it is possible.

"From an exercise standpoint, it's been proven that horses cannot increase the strength or structure within the ligaments or tendons after 2 years of age," Dutton said. "We can modify via exercise the health and strength within tendons and ligaments during that one- to two-year time period. We can improve joints and muscle tone throughout the horse's life, which will help prevent focused strain on the suspensory, but after that early time period, tendons and ligaments cannot be strengthened."

Dutton says free turnout for horses between ages 1 and 2 is crucial to improving overall soundness.

"Turnout during that 'magic time' will be a very big help toward reducing orthopedic diseases, adapting to weight-bearing training and improving the strength of the suspensory ligaments," Dutton said. **[PH]**

Abigail Boatwright is a special contributor for the Paint Horse Journal. To comment on this article, email feedback@apha.com.

Left: A lameness exam—along with nerve blocks, MRIs and ultrasounds—is used to diagnose suspensory ligament injuries **Center:** Work with your veterinarian and farrier to devise a shoeing protocol. Proper shoeing, including balancing the hoof, is critical to preventing suspensory injuries. **Right:** Gradual training and proper arena footing might help prevent suspensory ligament injuries.



ABIGAIL BOATWRIGHT



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APHA FILE PHOTO

Meet the Experts

David Dutton, D.V.M., is an advanced lameness specialist and board-certified surgeon. He founded Hill Country Equine in Boerne, Texas, in 2000. Dutton earned his doctorate in veterinary medicine at Colorado State University and has served as a large animal lecturer on staff at Texas A&M University.

Kenton Arnold, D.V.M., is based at Equine Veterinary Services in Terrell, Texas, where he focuses on performance horse lameness and reproductive issues, as well as wellness programs for all breeds of horses. A graduate of Texas A&M University's veterinary program, Arnold was a founding associate of diagnostic imaging services company Animal Imaging Center in Irving, Texas.