

## Poor Performance In Barrel Racing Horses – Musculoskeletal

**B**arrel racing is a speed event where one-thousandths of a second can make a difference between winning and losing. Veterinarians who work on barrel horses must understand the biomechanics, conditioning, and physical training required to be a competitive barrel racing horse. Barrel racing horses have a unique job description. They are required to compete using a combination of un-natural gait patterns (the approach/angle to each barrel is different) on different types of footing in variable arena sizes and varying barrel pattern distances.

Training regimens vary between trainers; however, most barrel racing horses are in intensive training and rehabilitative programs to help build up cardiovascular endurance, develop muscle mass, and establish fast-twitch muscle memory. Poor performing barrel racing horses are not limited to just slow racing times. Reviewing video of recent performances is often essential to understand or clarify the owners/trainers verbiage or description of the horse's poor performance. It is also important to look at the overall horse; skeletal maturity, frame size, conformation, and muscle mass are variables that can affect the progression and long-term soundness of a successful barrel racing horse.

Lameness is the leading cause of poor performance in barrel racing horses. Acute lameness or a severe lameness that occurs within a few hours after running is of major concern. These horses are often

lame enough that performing nerve blocks may not be recommended; horses that fall into this category include: non-displaced fractures, stress fractures, proximal suspensory ligament injury, tendon injury, tarsal injury, stifle injury, rhabdomyolysis, and deep bone bruises. Radiographs, ultrasonography, and serum chemistry should be performed initially; however, it is not uncommon for diagnostic results to be normal (excluding obvious fractures). Many times, repeating or performing the serum chemistry 12-18 hours after the initial onset of lameness may be beneficial to help rule out any form of rhabdomyolysis. Ultrasonography may need to be repeated in 24-72 hours. This time allows for some resolution of the swelling and for collagen damage within tendons and ligaments to fully degrade; as a result, the injury can be better delineated.

The chronic ongoing subtle lameness that progressively gets worse is much more commonly encountered in barrel racing horses. Initially, these horses are the ones that have a subtle or mild lameness that the rider does not feel or see, but present because of attitude changes or decreasing race times. Common lameness of this nature includes lower tarsal joint inflammation/osteoarthritis, stifle injury/soreness, suspensory ligament desmopathy, fetlock synovitis/osteoarthritis, distal interphalangeal joint synovitis/osteoarthritis, distal limb pathology (including navicular disease), and carpal osteochondral fragmenta-



tion/synovitis/osteoarthritis. Digital palpation is often very rewarding to help determine joint effusion, soft tissue swelling, ranges of motion, and pain when applying focal pressure. Joint anesthesia and/or peri-neural anesthesia are necessary to specify the lameness origin. Once the source or region of the lameness has been determined, diagnostic imaging modalities such as radiographs, ultrasonography, MRI, CT, and nuclear scintigraphy may be recommended to provide a diagnosis and treatment plan.

During heavy scheduled periods or during long futurity schedules, some horses just get purely exhausted. Just like human athletes, it is important to realize that barrel racing horses need periods of rest and rehabilitation to prevent injury. It is important for successful barrel racing horses have a consistent team comprised of a veterinarian, farrier, and chiropractor/acupuncturist. Be proactive. Go through horses every 2 months; you may or may not see any performance inhibiting problem.

For questions regarding poor performance in barrel racing horses, please feel free to call one of Brazos Valley Equine Hospitals locations or visit [bveh.com](http://bveh.com).