



# Common lameness issues in barrel racing horses

*The Educated Horseman: Health Series*



Barrel racing is one of the most popular uses of the American Quarter Horse in North and South America with approximately \$14 million dollars awarded annually in prize money. However, this popularity takes a heavy toll on horses, most commonly resulting in forelimb lameness.

The National Animal Health Monitoring System published The National Estimate of Economic Costs Associated with Animal Events and Production. Lameness is the number one cause of economic loss in the horse industry. The NAHMS report indicates that for every 100 horses there are 9-14 lameness-related events with each event costing approximately \$430.00 and taking approximately 110 days to recover from each event. Monetary losses and recover times make lameness issues one of the most costly and performance-reducing issues in the horse industry.

Research has shown that nearly 50 percent of competing barrel horses could be performing with some degree of lameness, specifically relating to the fetlock joint. In a study conducted by Menarium et al. (2011), several radiographic abnormalities associated in the forelimb fetlocks of high performing barrel horses were noticed.

- 70 percent of horses experienced inflammation of the sesamoid bones (Sesamoiditis),
- 56 percent of horses experienced inflammation or scarring of the synovial pad (Villonodular synovitis) on the front of the fetlock joint due to repeated trauma and extreme extension of the joint,
- 36 percent of horses experienced Osteoarthritis from a bone spur,
- 13 percent of horses experienced bone chips (Osteochondral fragments),
- 13 percent of horses experienced joint capsule inflammation (Capsulitis), and
- 6.6 percent of horses experienced soft tissue swelling.

Most of the horses examined in this study were more likely to display external signs of lameness on the right forelimb, than on the left. However radiographic evidence showed more abnormalities of the left

forelimb. This is thought to be caused by the extreme impact and hyperextension on the suspensory tendon apparatus while turning around the barrels. Most horses make one right turn which may cause soft tissue swelling, accounting for the external right forelimb lameness and two left turns, which explains the higher incidence of sustained injury on the left forelimb.

Despite the high likelihood of injury associated with barrel racing, there are treatments available that can extend the longevity of your horse's career including: Interleukin-1 Receptor Antagonist Protein (IRAP), stem cell, platelet rich plasma, Tildren, joint support, anti-arthritis medications, corticosteroids and shockwave therapy.

- **IRAP** – an anti-inflammatory therapy which blocks interleukin-1, a major inflammatory substance released due to an injury, reducing further tissue damage. A blood sample is collected from the injured horse and incubated with specially designed glass beads which stimulate anti-inflammatory and regenerative cytokines. The serum is collected from the sample and then injected back into the injured horse.
- **Stem cell therapy** – fat cells are collected from the injured animal. The stem cells from the fatty tissue



are concentrated and injected into the injured area, delivering active fibroblasts to the area needing healing. Horses treated with this therapy have returned to normal work levels prior to injury.

- **Tildren** – a bisphosphonate drug shown to be highly effective in treating osteoarthritis in horses and humans. It acts by decreasing osteoclast formation. Tildren can be given locally but is more commonly given systemically, allowing multiple areas of injury to be treated at once. This drug is most effective in horses that experience acute lameness.
- **Joint Support** – Chondroitin Sulfate & Glucosamine can increase articular cartilage and have anti-inflammatory effects. This treatment provides the basic building blocks for cartilage repair and should be used as a preventative in any high performance athlete.
- **Anti-arthritis medications** – Adequan, Legend, Sodium hyaluronate are arthritis medications that have anti-inflammatory effects and stimulate the production of Hyaluronic acid. Sodium Hyaluronate decreases pain and increases mobility. It acts as a pain killer and anti-inflammatory. It

increases range of motion by improving synovial fluid viscosity and soft tissue lubrication.

- **Corticosteroids** – used in conjunction with anti-arthritis medications. Overuse is very common and can have negative effects if not monitored appropriately.
- **Shockwave Therapy** – used to enhance the healing rate of soft tissue and bones in horses. Positive pressure acoustic waves transmit energy into structures deep within the body, stimulating cell healing.

Although the chances of a barrel racing horse sustaining some kind of performance-reducing injury are high, most horses can continue to perform as high-level athletes. Proper hoof care and use of support boots are also helpful in preventing excessive hyperextension and injury. It also is important for equine athletes to receive regular veterinary checkups. These check-ups increase the possibility of early diagnosis of any soft tissue or joint injury and the odds of successful treatment and a speedy recovery. If a barrel racing horse refuses to enter the arena, makes excessively wide turns, or cannot take the correct lead, it is important to contact a veterinarian to rule out any painful lameness issues.

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