

THE PHYSICS OF SYNOVITIS

Performance horses are talented and powerful animals. A reiner can slide to a stop and spin on a dime. A jumper can soar high above an oxer. Regardless of the discipline, there is an awe-inspiring amount of athleticism in today's performance horses.

It's no wonder 480,000 people in the United States participate in a competitive equestrian sport.¹ They're drawn to these incredible athletes – powerful animals, weighing around 1,000 pounds. The riders and trainers know all too well that training for their respective events can take a toll on their horse's joint health, especially when you consider the sheer physics associated with the weight of the horse.

Horses carry 60 to 65 percent of their weight on their forehand while moving.² And the faster a horse moves, the more stress on the joint.



To put this in perspective, a 1,000-pound horse is carrying approximately 625 pounds by the front legs.

That amount increases when a horse is in the support phase of a gallop, since the maximum load on a front leg is estimated at 2.5 times the horse's body weight.³ Consequently, a 1,000-pound horse, carries 2,500 pounds on each leg.



The equine joint provides nearly frictionless motion with the combination of a smooth articular cartilage surface, the lubrication of the cartilage and the synovial membrane. However, repetitive movement from training and competing every day can lead to inflammation of the joint.

This continuous stress on the joint can cause synovitis. Synovitis is associated with inflammation of the joint membrane and the release of inflammatory mediators, which stimulates a cycle of inflammation and damage to the synovial lining and articular cartilage.

Early recognition and intervention is essential to avoid permanent joint damage.⁴

If your horse displays signs of joint issues, consider treating performance-focused horses with LEGEND[®] (hyaluronate sodium). With millions of doses sold and more than 20 years of treatment success, LEGEND remains an important drug of choice in the battle against equine non-infectious synovitis. By decreasing the production and release of the molecules that play a role in inflammation, LEGEND helps reduce joint inflammation and the resulting pain and lameness.⁵

IMPORTANT SAFETY INFORMATION: The safety of LEGEND has not been evaluated in breeding stallions or in breeding, pregnant or lactating mares. The following adverse reactions have been reported following use of LEGEND Injectable Solution: Following intravenous use: occasional depression, lethargy, and fever. Following intra-articular (LEGEND Injectable Solution – 2 mL only) use: lameness, joint effusion, joint or injection site swelling, and joint pain.

¹Most Comprehensive Horse Study Ever Reveals a Nearly \$40 Billion Impact on the U.S. Economy. *American Horse Council*. 2005: 8. Accessed on Feb. 24, 2016 at http://www.americanequestrian.com/pdf/American_Horse_Council_2005_Report.pdf

²Adams. *Lameness in Horses*. 5th ed. 75.

³Equestrian Surfaces Guide. FEI website. Accessed on August 14, 2015 at http://www.fei.org/system/files/Equestrian_Surfaces-A_Guide.pdf.

⁴McIlwraith CW. Traumatic joint disease. Orthopaedic Research Center, Colorado State University Web Site. Accessed July 31, 2015 at <http://csu-cvms.colostate.edu/academics/clinsci/equine-orthopaedic-research-center/orthopaedic-topics/Pages/traumatic-joint-disease.aspx#legend>.

⁵Kawcak CE, Frisbie DD, Trotter GW, McIlwraith CW, Gillette SM, Powers BE, Walton RM: Effects of intravenous administration of sodium hyaluronate on carpal joints in exercising horses after arthroscopic surgery and osteochondral fragmentation. *Am J Vet Res*. 1997; 58(10):1132-1140.

