## **RETHINK** your horse's joint care

## reflex<sup>HA</sup>

#### WHAT CAUSES JOINT PAIN AND INFLAMMATION?

Causes of joint discomfort in horses includes synovitis (inflammation of the fluid-producing membrane), capsulitis (inflammation of the fibrous joint capsule), articular cartilage and bone fragmentation, ligamentous tearing, and osteoarthritis. Joint pain primarily involves soft tissue overuse and microtrauma to the bone surfaces.

#### WHAT ARE THE SYMPTOMS?

Detection of joint discomfort includes subtle changes in the way your horse moves (shortening of stride, hollowing of the back, raising of the head, etc.), stiffness that goes away as your horse warms up, puffiness around a joint, warmth or pain in the area of a joint. Procedures to help make an exact diagnosis may include a lameness evaluation with a flexion test, regional nerve block or joint block, radiography, nuclear scintigraphy, arthroscopy, synovial fluid analysis, or ultrasounds. These can reveal information about the condition of the bone, cartilage, and joint capsule.

#### WHICH HORSES ARE MOST PRONE TO JOINT PAIN AND INFLAMMATION?

Older horses or actively competing horses are more likely to experience joint discomfort, and HA quantities and production decrease with time.



## **RETHINK** the products you use for them

#### HOW TO TREAT JOINT PAIN AND INFLAMMATION?

Aggressive treatment is indicated to immediately decrease soft tissue swelling and inflammation as well as postpone the onset of permanent osteoarthritic changes.

## **RE**THINK Reflex<sup>HA</sup>

#### WHAT IS IT FOR?

Reflex<sup>HA</sup> is a high molecular weight hyaluronic acid supplement that supports healthy joints, maintains lubrication, and promotes flexibility. Reflex<sup>HA</sup> offers all the benefits of naturally produced hyaluronic acid and is rapidly absorbed for maximum efficacy.



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#### HOW DOES REFLEX<sup>HA</sup> WORK?

Hyaluronan, also known as hyaluronic acid or HA, is a natural biomacromolecule found throughout the body in all mammals. It has many functions and purposes including but not limited to cell signaling, skin healing, retaining moisture, lubricating connective tissue, absorbing shock in joints, filtering synovial fluid, and supplying nutrients to cartilage. Located in high concentration in synovial fluid and cartilage, HA's main purpose is lubrication and shock absorption in order for joints to function comfortably. Reflex<sup>HA</sup> has been developed as a liquid because of the very nature of hyaluronan itself. Hyaluronan is among nature's most water-loving molecules. When dry and exposed to moisture, it slowly absorbs up to 1000 times its weight in water, creating a thick viscous fluid. If consumed dry as a powder or a pellet by a healthy horse, the transit time from ingestion to excretion does not provide the necessary time for hydration of this incredibly hydrophilic molecule.<sup>1</sup>

Oral hyaluronan has been shown to be absorbed and effective, and recent clinical studies are consistent with these laboratory findings. Studies with high molecular weight hyaluronan administered orally show distribution to the joints in as little as four hours post-administration.<sup>2</sup>

HA is naturally synthesized locally by synoviocytes within the joint and once produced, it binds to collagen and elastin to form articular cartilage. It is the presence of HA that makes cartilage strong enough to handle compressive forces within the joint. Hyaluronan is also found in unbound form in the synovial fluid, where it provides the major source of lubrication that allows for smooth fluid movements in joints.

Additionally, HA has been shown to regulate bone remodeling by stimulating osteoblasts and osteocytes as well as inhibiting osteoclasts. Oral HA supplementation has been shown to reduce urinary markers of bone resorption and ovariectomy-induced bone loss, indicating that hyaluronan may suppress bone resorption.<sup>3</sup>

Hefner, CS (2012). Oral Hyaluronan Dosage Forms in the Management of Joint Pain. Doctoral Dissertation. Global College of Natural Medicine, Santa Cruz, California. Print.
Balogh, L et al. Absorption, Uptake and Tissue Affinity of High-Molecular-Weight Hyaluronan after Oral Administration in Rats and Dogs. J. Agric. Food Chem. 2008, 56,

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- 3. Gerdin, B. and Hallgren, R. Dynamic role of hyaluronan in connective tissue activation and inflammation. Journal of Internal Medicine. 242, 49-55 (1997).



### **RE**THINK Reflex<sup>HA</sup>

## JOINT CORE SUPPORT

# reflexHA

Reflex<sup>HA</sup> is formulated with patented MHB3° Hyaluronan for a highly researched, premium joint supplement to offer daily joint maintenance and address acute joint conditions.

Reflex<sup>HA</sup> offers only fully traceable ingredients of the highest quality from only European and domestic sources.

Reflex<sup>HA</sup> is a highly concentrated, researched, and professionally recommended product at a competitive price, at 240mg per ounce.

Reflex<sup>HA</sup> contains MHB3<sup>°</sup> Hyaluronan, the most researched and proven joint supplement ingredient available with six patents defining its role in maintaining bone and joint health.

Reflex<sup>HA</sup> utilizes MHB3° Hyaluronan that is made via microbial fermentation to ensure its purity and vegan status, eliminating the risk of any animal protein allergies from animal-sourced HA.

Reflex<sup>HA</sup> is a convenient, cost effective alternative for natural joint support.

 $Reflex^{HA}$  is superior to other oral HA supplements that produce substandard products and fail to conduct proper research on their finished products.

Reflex<sup>HA</sup> has been thoroughly tested for banned substances across all FEI, USEF and racing jurisdiction guidelines, and is Clean Sport certified.



#### Ingredients:

240 mg patented MHB3® Hyaluronan per ounce, purified water, sodium chloride, xanthan gum, potassium sorbate and citric acid. Contains nothing other than listed ingredients. 100% Vegan.

#### Directions for use:

Reflex<sup>HA</sup> is easily administered on daily feed for convenience, with the first dose mixed with morning feed & the second dose mixed with evening feed. Use as directed unless otherwise instructed by your veterinarian.

½ oz. = 1 pump

**Loading dose** (first 30 days): Administer 1/2 ounce (1 pump) twice daily.

Maintenance: Administer 1/2 ounce (1 pump) daily. During heavy work & pre-event use: Administer 1/2 ounce (1 pump) twice daily.

#### Available Sizes:

Gallon (128 days at ½ oz. twice daily) - \$248 retail Half Gallon (64 days at ½ oz. twice daily) - \$130 retail

