

FACTSHEET

EQUINE JOINT HEALTH

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SUPPORTING EQUINE JOINT HEALTH

What does your multimodal treatment plan for OA look like?

While once considered a disease of articular cartilage, we now know osteoarthritis (OA) is a “whole joint” disease. It affects the articular cartilage lining the edges of bones within the synovial fluid-filled joint, the subchondral bone lying directly under the cartilage, the joint capsule/membrane (wall/lining), and the supporting soft tissues (e.g., muscle, connective tissues, tendons, ligaments, menisci).¹ Musculoskeletal trauma from natural, repetitive concussion of the lower limbs or sport-related injuries commonly contribute to OA development.

Current estimates indicate one in five horses has this painful, degenerative, and progressive condition.¹⁻³ Therefore, OA is one of the most common joint disorders of horses and a leading cause of disability.⁴ While any horse is at risk of developing OA, aging, nutrition, obesity, joint injury, and genetics are specific risk factors that increase the chances of disease.¹

A BRIEF REVIEW OF JOINT DISEASE

Osteoarthritis is a complex, poorly understood condition, but trauma, inflammation, aging, and oxidative stress are major contributing factors to both its development and progression.¹ Any insult to the joint—be it to the bone, cartilage, synovial lining, or capsule—causes inflammation, spurring an “inflammatory cascade” into action. Interleukin-1 and tumor necrosis factor- α are the two key inflammatory mediators involved in this cascade, resulting in cartilage degeneration while simultaneously inhibiting cartilage growth.^{2,4} Inflammation also causes pain in arthritic patients.

SPECIFIC STRATEGIES FOR SUPPORTING JOINT HEALTH

Medical treatments for horses with OA are classified as either (1) symptom-modifying drugs that improve the clinical signs of disease, such as degree of lameness, or (2) disease-modifying drugs that interrupt the molecular mechanisms at the cellular level leading to progressive disease. Decreasing inflammation and providing pain relief can improve clinical signs, whereas disease modification involves altering cartilage turnover and metabolism to curtail cartilage degradation.

ORAL OPTIONS

Of all available joint therapies, non-steroidal anti-inflammatory drugs (NSAIDs) are among the most commonly prescribed medications for horses with OA. These first-line medications, such as phenylbutazone or “bute,” are generally economical, safe, and efficacious but are not disease-modifying.⁵ NSAIDs only help manage clinical signs of disease by controlling inflammation (i.e., lameness, heat, pain, swelling).

Oral joint health supplements are also extremely popular go-to products that are generally affordable and easy to use. An array of compounds has cropped up over the years identifying as joint supplements.



Osteoarthritis is one of the most common equine joint disorders, affecting an estimated one in five horses.

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Ingredients commonly found in quality nutritional supplements, and therefore subject to some form of scientific scrutiny, include:

- ◆ Glucosamine;
- ◆ Chondroitin sulfate;
- ◆ Hyaluronic acid (HA);
- ◆ Methylsulfonylmethane;
- ◆ Avocado-soybean unsaponifiables;
- ◆ Omega-3 fatty acids; and others.

Through the years, research has yielded conflicting and, therefore, confusing results about these products' efficacy. This was the case in a recent study evaluating an oral product containing glucosamine, chondroitin sulfate, HA, methylsulfonylmethane, turmeric, resveratrol, collagen, silica, and boron.³ In that study, researchers found a significantly increased hock range of motion in treated horses compared to unsupplemented horses. However, treated horses continued to experience cartilage breakdown and inflammation despite supplementation. Other studies demonstrate a more impressive effect of supplementation in OA-affected horses, with some ingredients—including those listed above—exerting both symptom- and disease-modifying effects.

INJECTABLE OPTIONS

The intra-articular (IA) corticosteroid drugs betamethasone and triamcinolone acetate offer symptom-modifying effects. These drugs, however, do have drawbacks that might be overlooked, so much so that one veterinary expert referred to their widespread use as “flip-pant.” Older sport horses, for example, might have underlying endocrine disorders that can worsen after IA corticosteroid administration. Further, using injectable corticosteroids in horses with joint injuries with accompanying acute soft-tissue injuries can delay healing of the soft tissues.⁵

Corticosteroid-free IA injectable options include HA and polysulfated glycosaminoglycans, each with symptom- and disease-modifying effects. In practice, however, steroids are frequently co-administered with HA due to the relatively frequent occurrence of joint “flares.”

Biologic therapies continue to gain a foothold in the corticosteroid-free management of OA. These are substances made from living organisms, often products from the horse's own body, with anti-inflammatory and/or regenerative properties and growth factors. Biologics being used with increasing frequency in the equine industry include platelet-rich plasma (PRP), interleukin-1 receptor antagonist

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protein (IRAP), autologous protein solution (APS), and a variety of stem cells.⁶

ALTERNATIVE OPTIONS

Reflecting the importance of OA in the equine industry without a definitive and universally effective therapeutic plan, a plethora of alternative therapies exist. These have varying degrees of evidence supporting their use, and their efficacy remains unclear. This category includes shock wave, bisphosphonates, and physical therapy.

PROPHYLACTIC VS. REACTIVE

Cartilage degeneration occurs early in the course of disease. By focusing on disease prevention, owners and veterinarians can mitigate and potentially avoid OA in some cases. Rather than focusing on risk factors you can't control (e.g., genetics and aging), exert your efforts elsewhere. Instead, consider the normal forces on abnormal joints and abnormal forces on normal joints.

For example, if a horse has poor conformation, such as a flexural or angular limb deformity, work with a farrier and veterinarian

to minimize stress on the associated joints. Address underlying joint conditions such as osteochondritis dissecans or intra-articular fractures.

In addition, ensure your horse gets routine exercise, avoiding prolonged stall confinement. Don't forget the importance of good nutrition with balanced trace minerals, particularly for young, growing horses.⁷ Research also supports the prophylactic (preventive) administration of oral joint health supplements and injectable products prior to joint insult that causes inflammation.^{8,9}

TAKE-HOME MESSAGE

Optimal management of joint health involves identifying risk factors, preventing joint inflammation/trauma, using prophylactic joint therapies, and instituting treatment promptly in the face of clinical OA. Experts endorse a multimodal treatment approach that includes nutritional supplements, IA therapies, alternative therapies, and management.

Owners must be aware of the expenses associated with long-term treatment and have

reasonable expectations regarding outcomes, including future use of their horse. Continued research in this field will validate our current treatment recommendations and find innovative strategies for managing this painful, degenerative condition.

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