

ORAL JOINT SUPPORT PRODUCTS

Beyond Glucosamine and Chondroitin

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Horse owners and veterinarians have been relying on oral joint support products for years. The traditional mainstays have been products containing glucosamine and chondroitin. These molecules are normal components of the extracellular matrix of articular cartilage, and play important roles in cartilage synthesis, maintenance, and repair.

Joint support products that contain glucosamine and chondroitin rely on the blood stream to deliver the building blocks to the articular cartilage. Since the vascular supply to articular cartilage is known to be poor, the delivery of these molecules to their site of action is limited. Further hindering the delivery process is the extensive first-pass metabolism of glucosamine, and the limited gastrointestinal absorption of chondroitin (Gupta 2016). While these ingredients are incredibly popular and widely used, scientific evidence supporting use in horses has been questioned (Pearson 2009).

With the challenges that are presented by the use of conventional oral joint support, it is easy to wonder if something better may be available. Products containing the active ingredient UC-II® can provide a better solution for horses.

In order to understand how UC-II® works, reviewing anatomy and physiology is essential. In a normal, healthy joint, cartilage provides protection against compressive forces associated with movement. Cartilage is mainly composed of type-II collagen and

water. As joint fluid and cartilage diminish with age and exercise, bone-on-bone interactions are more likely to occur, which leads to sore and stiff joints.

Changes in cartilage structure cause the release of its components such as type-II collagen into the synovial fluid, prompting an immune response. This immune response leads to a further decrease in cartilage, and an immune response cycle that may cause soreness and stiffness in joints. As this occurs, horses may become reluctant to perform normal activities, which is often the presenting complaint when an owner or trainer is seeking a joint support product.

A product containing UC-II® is different from other oral joint support products because the unique patented extraction process for UC-II® preserves the collagen structure and epitope presentation. Following ingestion, the epitopes interact with lymphoid tissue in the small intestine, known as Peyer's Patches and stimulates immune system uptake of the collagen. In this way, the immune system is trained to regard type-II collagen as benign. This process, known as oral tolerization, works with the body's immune system to promote normal immune activity to type-II collagen in the joint, thusly helping to ease joint discomfort and possibly reduce occasional stiffness and soreness.

From a scientific perspective, UC-II® has been demonstrated to be effective in reducing joint discomfort associated with osteoarthritis in horses, dogs, and humans (Gupta 2009, DeParle

2005, and Crowley 2009). Additionally, UC-II® outperformed glucosamine and chondroitin in the investigated species (Gupta 2009, Gupta 2012, and Lugo JP 2016).

Regardless of the horse's discipline or intended use, oral joint support products containing UC-II® may improve joint comfort and mobility. Young horses in training and futurity competitions have benefited from use of the product by staying ahead of joint stiffness and soreness. UC-II® has also been successfully used to support older horses with occasional joint discomfort. These horses are better able to maintain their current level of performance. If desired, it can be used concurrently with other joint support recommendations the veterinarian may offer.

As this discussion has shown, there is more to oral joint support for horses than just glucosamine and chondroitin. UC-II® offers horse owners a different and superior option.

References:

Gupta RC, Canerdy TD, Skaggs P. 2009. Therapeutic efficacy of undenatured type-II collagen (UC-II) in comparison to glucosamine and chondroitin in arthritic horses. *J. of Vet Pharmacol. Therap.* 32(6):577-58.
Pearson W, Lindinger M. 2009. Low quality evidence for glucosamine-based nutraceuticals in equine joint disease: review of in vivo studies. *Equine Vet J.* Sep;41 (7):706-12.

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