



Joint Armor™

Joint Armor is a scientifically formulated combination of hyaluronic acid, chondroitin sulfate, glucosamine, and manganese sulfate, ingredients proven to maintain and support cartilage structure and optimal joint function.

The components of Joint Armor provide dual-action support to joints by supplying the building blocks necessary for creation of healthy cartilage matrix and regeneration of cartilage when damage occurs from trauma and normal wear and tear.

Healthy Joints

In healthy joints, the ends of the bones are coated with a thin layer of friction-reducing tissue known as articular cartilage. The articular cartilage contains synovial fluid, a thick liquid that serves two primary functions: (1) as a source of nutrients for the articular cartilage, and (2) as a lubricant and shock absorber for the bones that form a joint. Lameness can result when damage occurs to any joint tissue, whether it involves the bones, articular cartilages, or synovial membranes.

Glucosamine and Chondroitin Sulfate

Glucosamine and chondroitin sulfate are key nutrients necessary for maintenance of normal joint function. Glucosamine is used as a substrate for certain components of the cartilage matrix, while chondroitin sulfate plays an important role in controlling the enzymes associated with inflammation and tissue destruction. Numerous studies have documented the benefits of combining these two ingredients to joint health.

Studies using equine cartilage explants (small pieces of actual living tissue) have shown these ingredients complement each other in inhibiting the production of inflammatory cells. Interestingly, when these ingredients were used independently of each other, they did not show similar benefits (Orth et al., 2002; Schlueter and Orth, 2004; DeChant et al., 2005).

Glucosamine and chondroitin sulfate have been evaluated in several field studies. In a double-blind placebo-controlled study (Hanson et al., 2001), 14 horses with progressive forelimb lameness showed significant improvement (evaluated by lameness specialists using standardized lameness scores) when administered a treatment of glucosamine and chondroitin for a 28-day treatment period when compared to the control group. In a more recent study (Rodgers, 2006), administration of glucosamine and chondroitin significantly decreased the necessity and frequency of intra-articular therapeutic injections of the hock joints in working show hunters and jumpers.

Hyaluronic Acid

Hyaluronic acid (HA) is an integral component of synovial fluid and articular cartilage, and is responsible for lubrication of the joint surfaces. While glucosamine and chondroitin sulfate work mainly on the cartilage, HA is more beneficial to the joint fluid. In a study conducted by Bergin and coworkers (2006), oral HA was effective in reducing synovial effusion (an abnormal collection of fluid) following arthroscopic surgery for removal of osteochondritis dissecans lesions in joints.

Manganese Sulfate

Manganese is an important cofactor in the formation of the cartilage matrix and synthesis of connective tissue.

The Joint Armor Advantage

Joint Armor features the four most essential elements for joint health: glucosamine, chondroitin sulfate, hyaluronic acid, and manganese sulfate. While other products feature one or two of these ingredients, Joint Armor showcases all four elements at therapeutic levels, all for the price of one supplement. **Joint Armor** includes:

Glucosamine HCl	2500 mg
Glucosamine sulfate	2500 mg
Chondroitin sulfate	1200 mg
Hyaluronic acid	100 mg
Manganese sulfate	100 mg

Maintain your horse's soundness with Joint Armor.

References

- Bergin, B.J., S.W. Pierce, L.R. Bramlage, and A. Stromberg. 2006. Oral hyaluronan gel reduces post-operative tarsocrural effusion in the yearling Thoroughbred. *Equine Vet. J.* 38(4):375-378.
- DeChant, J.E., G.M. Baxter, D.D. Frisbie, G.W. Trotter, and C.W. McIlwraith. 2005. Effects of glucosamine hydrochloride and chondroitin sulfate, alone and in combination, on normal and interleukin-1 conditioned equine articular cartilage explant metabolism. *Equine Vet. J.* 37(3):227-231.
- Hanson, R.R., T.A. Hammad, and W.R. Brawner. 2001. Oral treatment with a nutraceutical (Cosequin) for ameliorating signs of navicular syndrome in horses. *Veterinary Therapeutics* 2(2):148-159.
- Orth, M.W., T.L. Peters, and J.N. Hawkins. 2002. Inhibition of articular cartilage degradation by glucosamine-HCl and chondroitin sulfate. *Equine Vet. J. Suppl.* 34:224-229.
- Rodgers, M.R. 2006. Effects of oral glucosamine and chondroitin sulfates supplementation on frequency of intra-articular therapy of the horse tarsus. *Intern. J. Appl. Res. Vet. Med.* 4(2):155-161.
- Schlueter, A.E., and M.W. Orth. 2004. Further studies on the ability of glucosamine and chondroitin sulfate to regulate catabolic mediators in vitro. *Equine Vet. J.* 36(7):634-636.



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