



FUSION VETERINARY ORTHOPEDICS

Oral Joint Supplements

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Introduction:

Osteoarthritis (OA) is a debilitating progressive disease that causes cartilage destruction and ultimately failure of a joint leading to pain and disuse. OA is the most common form of arthritis with an estimated 40% of puppies to young-aged dogs and up to 80-90% of older aged dogs affected radiographically. Preventing, along with minimizing and slowing the progression of OA, should be a top priority in any dog. For this reason, oral joint supplements may not only help in the prevention of OA but slowing and minimizing the progression once OA has developed.

The most common oral joint ingredients used in canine OA are glucosamine, low molecular weight chondroitin sulfate, and essential fatty acids. Glucosamine is able to stimulate the production of certain molecules that act as the backbone to the molecular makeup of cartilage (it stimulates the production of proteoglycan aggregates). It is also thought that glucosamine will increase the production of glycosaminoglycans (GAG's) such as chondroitin sulfate. Chondroitin sulfate has a stimulatory role to chondrocytes and has been showed to have anti-inflammatory effects. Furthermore, when glucosamine and chondroitin sulfate are used together there is a synergistic effect to aid in cartilage production and inhibit cartilage breakdown versus when each product is used alone. Essential fatty acids are a group of polyunsaturated fatty acids that contain the omega-3 fatty acids; Eicosapentaenoic acid (EPA) and Docosahexaenoic acid (DHA) and perna (green lipped mussel; ETA) . Omega-3 fatty acids (Welactin 3TA, Nutramax Labs) have anti-inflammatory properties and therapeutic effects to the cartilage. The omega-3 fatty acids are able to assist in reducing the inflammatory response.

Outside the 3 most used joint ingredients there are literally hundreds of other ingredients that can be added. For example, Dasuquin Advanced with eggshell membrane by Nutramax Laboratories has along with glucosamine and chondroitin sulfate a number of other ingredients geared toward managing inflammation. Included is avocado/soybean unsaponifiables (ASU), which has shown to be protective of the cartilage, decrease the expression of inflammatory mediators, as well as improve joint comfort. Alpha-lipoic acid, Boswellia serrata extract, Curcumin Longa extract, and Manganese Ascorbate are all added as well. Alpha-lipoic acid is a biologic antioxidant mainly found in red meat, vegetables, and yeast. Not only does it have antioxidant properties to combat oxidative stress, but also when combined with ASU it has the ability to further decrease inflammation. Boswellia serrata extract contains a selective mix of boswellic acids that have the ability to decrease the inflammatory response. Curcumin is an antioxidant from the spice turmeric commonly found in curry powder. Not only does it serve as an antioxidant but it can



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also act as an anti-inflammatory. Manganese Ascorbate is one of the enzymes used for the production of cartilage. It has also been shown to decrease certain inflammatory mediators. Lastly, the inclusion of egg-shell membrane is helpful as a ready source of type II collagen but also to help with tissue flexibility.

When to Begin Oral Joint Supplements?

There has been a long-standing debate about the timing for starting oral joint supplements. Some individuals advocate waiting until there are clinical and/or radiographic signs of OA to begin oral joint supplements. Yet, others recommend beginning oral joint supplements prior to the onset of OA in a more prophylactic manner. Research has shown that dogs given glucosamine and chondroitin prior to the onset of OA have less inflammation and lameness compared to dogs that receive glucosamine and chondroitin after the onset of OA. This allows for a recommendation that dogs should be on oral joint supplements at a young age, rather than waiting till after injury, or even worse after the onset of OA. Given what we know about both glucosamine and chondroitin along with essential fatty acids, it only makes sense to begin dogs on both a glucosamine/chondroitin sulfate supplement (such as Dasuquin Advanced with Eggshell membrane), and an omega-3 fatty acid (such as Welactin 3TA).

Choosing the Right Oral Joint Supplement:

It is important to understand that oral joint supplements are considered nutraceuticals, not pharmaceuticals. Because of this there is no federal regulation on the production and manufacturing of nutraceuticals. Furthermore, companies are under no legal obligation to meet the claims made on the label. The oral joint supplement market is a “buyer beware” market and you will get what you pay for. Often it can be overwhelming by the choices available especially at drug stores and pet stores.

In recommending a joint supplement, Dr. David Dycus believes the company should:

- Invest in quality control such that all lots are tested for the highest quality and purity of ingredients
- Meet label claim anytime the product is tested by a third party
- Invest in research and development and be able to provide data of the product that shows the particular ingredient has an expected effect on the cell

Communication with your regular veterinarian and our team at Fusion Veterinary Orthopedics is paramount to ensure your pet is taking the best product available. Extreme caution should be used if trying to purchase a joint supplement online. Unfortunately, we as veterinarians cannot recommend buying joint supplements online because we don't know the products history (i.e. where its coming from, how



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it was stored, etc.) and in many situations the product may be counterfeit or contain harmful chemicals.

Cats and Oral Joint Supplements:

Cats just as dogs suffer from osteoarthritis. Often times it is harder to diagnose because many cats won't show any clinical signs. You may note an unkempt coat appearance or reluctance to jump down from high objects. If your cat is suffering from osteoarthritis then at Fusion Veterinary Orthopedics, we recommend beginning Dasuquin for cats (Nutramax Labs) along with Welactin for cats (Nutramax Labs).