Glucosamine & Chondroitin for Hip Dysplasia & Arthritis in Dogs

Drs. Foster & Smith Educational Staff

The history of glucosamine and chondroitin

Glucosamine and Chondroitin have been used to treat osteoarthritis in Europe for over twenty years. Recently, physicians and veterinarians in the United States have begun to prescribe this product for their patients and have been extremely happy with the results. These products are proving to be one of the safest and best treatments for the crippling effects of osteoarthritis that affects millions of aging dogs throughout the United States.

Despite the fact that the benefits of these glucosamine and chondroitin products have been known for over twenty years, many people question why these products are just now being used in the United States. The answer lies in the fact that glucosamine and chondroitin are not products that can be patented, and therefore, offer little incentive to the large pharmaceutical companies to develop a product. Pharmaceutical companies spend millions in research and development and need a patented product to guarantee sales and to recoup their investment.

Another issue is that glucosamine and chondroitin are considered nutraceuticals and are not strictly controlled by the FDA. They are naturally occurring substances in many food products and fall in the same class as vitamins. Despite the overwhelmingly positive studies done in Europe, American researchers still refused to perform controlled studies. In fact, literature searches show that there are hardly any North American studies done on these products. But all this is quickly changing. Because of the huge number of humans and pets suffering from osteoarthritis and the tremendous success in the treatment of this disease when using glucosamine and chondroitin, many companies are now producing a product line and several broad research studies are underway.

Uses of glucosamine and chondroitin

Glucosamine products have been studied and used for the healing of skin wounds, stomach ailments, and joint problems. Their use in the relief and healing of the symptoms of joint disease is currently their biggest use. Glucosamine and chondroitin have been successfully used in humans, horses, dogs, and cats. This article deals only with glucosamine and chondroitin and their therapeutic use for osteoarthritis in the dog and cat.

There are many different joints that can be affected by osteoarthritis in the dog, but by far, the most common is the hip joints. Hip Dysplasia is very common in many of the larger breeds of dogs. This condition greatly exacerbates the normal wear on the smooth cartilage protecting the bony surface of the joint. When this cartilage wears away there is a bone to bone contact, which creates the pain seen with arthritis. Even dogs that do not have hip dysplasia may have a decrease in this cartilage as they age, and will show signs of arthritis. In addition, aging dogs may also have arthritis in their knees, elbows, and shoulders and cartilage loss or damage that respond to glucosamine and chondroitin.

Glucosamine and chondroitin are also often used as an aid in the treatment of spinal disc injuries or post operatively in dogs that have undergone joint surgery.

The typical patient that is placed on and responds to glucosamine and chondroitin therapy is a middle aged to older medium to large breed dog. Dogs may show symptoms of limping or stiffness especially in the morning and during cold weather. They usually loosen up as they move around and exercise. Some dogs have difficulty climbing stairs or getting into or out of a vehicle. Many dogs respond to treatment with buffered aspirin (Do NOT give your cat aspirin unless prescribed by your veterinarian) or carprofen (Rimadyl), but when the product is discontinued the pain and symptoms return. Osteoarthritis also affects small dogs and cats and glucosamine and chondroitin have been used very effectively in relieving their symptoms.

In my experience I would say that most older dogs suffer from some level of osteoarthritis. Many owners attribute the loss of activity to old age and may not even identify it as a problem. And they never appreciate how much their dog's activity level was being reduced by the arthritis until they place their dog on glucosamine and chondroitin therapy and see the return of normal function.

Where are glucosamine and chondroitin found?

Glucosamine and chondroitin are normal substances found in the body of living animals. They are at their highest concentration in cartilage. Unfortunately, through degradation during digestion and processing, almost all of the glucosamine in an animal's diet is unavailable for use. The body, therefore, synthesizes most of its own glucosamine through a biochemical reaction utilizing glucose. In normal healthy animals the body is able to synthesize enough glucosamine to keep the existing cartilage healthy, but when the animal ages or there is damage to joint cartilage it cannot produce enough to keep up with the body's needs. This is where a supplemental form of glucosamine is needed.

Supplemental glucosamine: Glucosamine is a 2-amino derivative of glucose which is obtained through the hydrolysis of chitin, a polysaccharide found in the shell of crustaceans. Crustaceans have a very high concentration of chitin and because the shells are often discarded, provide a reliable and cost effective source of glucosamine.

*Unauthorized use of any images, thumbnails, illustrations, descriptions, article content, or registered trademarks of **Foster & Smith, Inc.** is strictly prohibited under copyright law. Site content, including photography, descriptions, pricing, promotions, and availability are subject to change without notice. These restrictions are necessary in order to protect not only our copyrighted intellectual property, but also the health of pets, since articles or images that are altered or edited after download could result in misinformation that may harm companion animals, aquatic life, or native species.*

Chondroitin: Chondroitin is a naturally occurring product found in animal cartilage. Supplemental chondroitin is derived primarily from bovine (cow) cartilage, particularly the cartilage rings of the trachea. It is also derived from shark and whale cartilage. The source does not appear to have any impact on its effect. Though for ecological reasons, many consumers prefer bovine sources.

How do glucosamine and chondroitin work?

The way that glucosamine works is a very complicated process. In a nutshell, cartilage consists of several different cells, one of which is chondrocytes. Chondrocytes are responsible for synthesizing new cartilage. Through normal wear, cartilage is constantly being broken down and replaced. When a dog has hip dysplasia or ages, the chondrocytes do not have the building blocks available to them to build enough new cartilage to keep up with the breakdown of the old cartilage. Glucosamine provides the building blocks to synthesize new cartilage. Glucosamine is the building block necessary for the production of the substances called glycosaminoglycans. The glycosaminoglycans are combined with hyaluronic acid to make the substance proteoglycans. The proteoglycans and collagen are the main structures of cartilage.

Glucosamine provides the building blocks to synthesize new cartilage.

Chondroitin also is one of the products necessary for the synthesis of glycosaminoglycans. But it probably plays a more important role by combating and neutralizing destructive enzymes in the joint. There is always a low level of destructive enzymes found in the joint, but when injury or abnormal wear occurs, the destructive enzymes and agents increase accelerating cartilage destruction. When chondroitin is added to the diet it helps to reduce the level of these destructive enzymes.

Chondroitin blocks destructive enzymes that break down cartilage in the joint.

What are the side effects?

There are very few side effects. Drs. Foster and Smith have sold tens of thousands of doses of glucosamine and chondroitin products and have never seen a single, severe side effect. Glucosamine and chondroitin have been used for over 20 years in Europe without any complication or listing of side effects. Occasionally, a dog will vomit or get diarrhea with this product. If the dose is reduced or given with food, the symptoms are usually alleviated. Once a dog begins using the product, they must stay on it for the rest of their lives or the degeneration of the joint cartilage will return. Once the product has promoted healing for 8 weeks, the dose is often reduced. The safety of this product is well suited for long term use. It can also be used with most other drugs and vitamins without any complication. The owner of any animal that is taking a medication should always seek veterinary advice before adding any new product or drug.

Where can I get glucosamine and chondroitin?

Glucosamine and chondroitin can be found in many different forms. Glucosamine in a pure form, or combined with chondroitin, can be purchased in health food stores, at veterinary clinics, and in pet supply catalogs.

Not all glucosamine and chondroitin products are created equal, however. The difference in various products lies in the dosing, carriers, vitamins, minerals, and purity of the ingredients. Products that contain human grade glucosamine and chondroitin are much more likely to be of high quality and in a purer form. In addition to ingredients, the concentration of actual glucosamine and chondroitin vary from product to product. Products designed for dogs often have ascorbic acid or manganese to help aid in the uptake of glucosamine in the canine. Canine products may be flavored or fortified with other minerals. The most expensive product is not always the best. Compare the ingredients between products to ensure that you are getting what you pay for. Some of the most popular products for canines include Drs. Foster and Smith's Joint Care, Cosequin made by Nutramax, and Glycoflex.

COMMONLY ASKED QUESTIONS ABOUT GLUCOSAMINE AND CHONDROITIN

Why did my vet not recommend glucosamine/chondroitin for my pet?

Many veterinarians are just becoming aware of the benefits of glucosamine and chondroitin. Most veterinarians gain their information about new products through major pharmaceutical companies. Because the large pharmaceutical companies are not promoting this product it has taken longer to be introduced to veterinarians. Veterinarians that specialize in orthopedics or who keep current on all new products are usually very aware of the benefits of glucosamine and chondroitin and have used these products for years.

Do glucosamine/chondroitin really work?

There have been many studies done in Europe showing the benefits of these products. There is a complete absence of completed studies on these products in the United States, although, many are currently underway and initial reports confirm the results seen in Europe. Drs. Foster and Smith have carried this product for several years and the reports that we get back from our customers are very positive.

In my experience, I would say that most older dogs suffer from some level of osteoarthritis.

Can I use glucosamine/chondroitin with painkillers or other drugs?

Many animals are on aspirin or carprofen (Rimadyl) before they begin glucosamine/chondroitin therapy. I usually encourage owners to wean their pets off of painkillers over a period of six weeks while the glucosamine and chondroitin are taking effect. Some animals with severe

*Unauthorized use of any images, thumbnails, illustrations, descriptions, article content, or registered trademarks of **Foster & Smith, Inc.** is strictly prohibited under copyright law. Site content, including photography, descriptions, pricing, promotions, and availability are subject to change without notice. These restrictions are necessary in order to protect not only our copyrighted intellectual property, but also the health of pets, since articles or images that are altered or edited after download could result in misinformation that may harm companion animals, aquatic life, or native species.*

arthritis may need to be on a low dose of buffered aspirin to maintain their comfort even with the benefits of glucosamine and chondroitin. Other supplements such as multivitamins and fatty acids are often given to animals on glucosamine supplements without any problems. It is always best to check with your veterinarian before putting your pet on any medication or supplement. This information should be a part of your pet's medical record.

What is the difference between glucosamine (HCl) and glucosamine sulfate?

Glucosamine hydrochloride (HCl) and glucosamine sulfate both work equally well in dogs. The sulfate form was originally used in Europe. The HCl form has recently become more popular because it is purer and provides more available glucosamine per unit weight and contains much less residual ash.

How long can I keep my dog on it?

Most pets need to be on the replacement therapy for the rest of their lives. Studies have shown that cartilage degeneration will reoccur about four to six months after the product is discontinued. The exception to this would be young animals that were on it for 3 months or so following a joint surgery or injury.

Can I use it to prevent hip dysplasia?

There is no indication that this product slows the progression of hip dysplasia. It does not prevent the development of hip dysplasia. Many animals that have hip dysplasia benefit from being on glucosamine and chondroitin because it helps heal the cartilage and reduce the pain involved with this disease.

Can I give my dog the kind that I take?

Pharmaceutical grade glucosamine and chondroitin are used for humans and are found in some veterinary products. It is perfectly safe to use human glucosamine in your pet, however, products made for animals contain ascorbic acid to help in the uptake, in canines. In addition, animal products are dosed in the correct size for animals and are often flavored to make them more palatable to pets.

Can glucosamine and chondroitin be used in cats?

It is safe to use in cats and appears to work very well in reducing the signs of feline osteoarthritis. Drs. Foster and Smith produce a small capsule specifically for cats and small dogs.

*Unauthorized use of any images, thumbnails, illustrations, descriptions, article content, or registered trademarks of **Foster & Smith, Inc.** is strictly prohibited under copyright law. Site content, including photography, descriptions, pricing, promotions, and availability are subject to change without notice. These restrictions are necessary in order to protect not only our copyrighted intellectual property, but also the health of pets, since articles or images that are altered or edited after download could result in misinformation that may harm companion animals, aquatic life, or native species.*