



Glucosamine and Chondroitin



What is articular cartilage?

Articular cartilage is a firm, almost rubbery, slippery tissue that covers the ends of bones in all movable joints. Cartilage is important because it is responsible for much of the shock absorption and lubrication required by normal joint function. Cartilage is made and maintained by special cells called chondrocytes which make up only about 5% of the total volume of cartilage. 95% of the volume of cartilage is made up of a gel-like matrix composed of protein, water, collagen, and chains of sugar based molecules. The chondrocytes produce the matrix and the matrix surrounds and supports the chondrocytes.

Cartilage has no internal blood vessels. The cycling of water from the matrix into the joint space and back into the matrix again carries nutrients to the chondrocytes and removes waste products.

Although we do not know what exactly starts matrix breakdown, we do know several factors that can predispose to it including wear and tear to cartilage tissue, chronic joint overuse, abnormal loading of joint surfaces, use of steroids, joint immobilization, and of course the aging process.

What is Glucosamine?

Glucosamine is a small molecule classed as an amino sugar. The cartilage cells make Glucosamine out of glucose. Glucosamine in turn forms the basic building block of larger molecules in the joint tissues. Joint problems may begin when cartilage cells are not making enough Glucosamine to keep up with the level of tissue destruction.

In order for the body to absorb Glucosamine the compound must be in the form of a salt, that is it must be bound to another molecule.



What is Chondroitin Sulfate?

Chondroitin Sulfate also occurs normally in the body. It is a large molecule made by the cartilage cells. It is important because it binds the collagen and gives cartilage its strength and resiliency. Supplementing Chondroitin Sulfate helps maintain healthy cartilage by slowing cartilage breakdown.

Why is it important to use Glucosamine and Chondroitin Sulfate together?

Taking the two compounds together is more effective than taking either alone based on their different mechanisms of action. Glucosamine helps the body rebuild cartilage and Chondroitin helps decrease cartilage breakdown.

Studies have found that by adding Glucosamine back to the body in supplement form connective tissue healing and regeneration are enhanced. This particular action is invaluable for anyone suffering from diseases related to cartilage destruction. Of particular interest is a fact that Glucosamine treats the root of osteoarthritis rather than alleviating its symptoms, as do standard drug therapies. In addition, unlike prescription medication it is considered very safe and non-toxic and can be used for extended periods of time without risk. Anti-inflammatory medications are designed to target arthritic symptoms and do not address the cause of the disease.

Use of Chondroprotective agents Glucosamine and Chondroitin Sulfate.

In order to obtain optimal therapeutic results, long term therapy is suggested. Unlike the quick action of anti-inflammatory medications Glucosamine will take longer to produce desired results. Combining Glucosamine Sulfate and Chondroitin Sulfate has been remarkably effective in treating osteoarthritis. More and more research points to the effectiveness of these agents as a safe and effective arthritis treatment.

Dosages

To receive the optimal therapeutic effect from Chondroitin Sulfate and Glucosamine Sulfate, adequate amounts of these compounds must be taken. The best way to figure how much to take is based on body weight. If you weigh less than 120 lbs. you need 1000mg of Glucosamine and 800mg of Chondroitin. Individuals between 120-200 lbs. require 1500mg of Glucosamine and 1200mg of Chondroitin. Those weighing more than 200 lbs. need 2000mg of Glucosamine and 1600mg of Chondroitin. The supplements can be taken with or without food.

Treating Arthritis

The progression of osteoarthritis involves faulty cartilage production and repair. Both Proteoglycan and Collagen synthesis decrease with age and as a result, many persons suffer from joint degeneration. Glucosamine and Chondroitin have the distinct ability to halt and heal the deteriorating process caused by osteoarthritic disease in a large percentage of patients. Together they form a new approach to treating joint disease which demonstrates the difference between holistic approach to disease and conventional treatment.



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The American Academy of Orthopaedic Surgeons, the largest group of board certified orthopaedic surgeons in the world, indicated at its annual meeting in Anaheim, California in February 1999 that use of Chondroitin Sulfate and Glucosamine Sulfate are reasonable adjuncts to the treatment of osteoarthritis.



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Please consult Dr. Haverbush or a physician for specific treatment recommendations.

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