Relieving Osteoarthritis Symptoms With Glucosamine and Chondroitin Sulfate

What is Osteoarthritis?

Osteoarthritis is the most common joint disease, affecting nearly 20 million Americans. It is a condition that involves the degeneration of the cartilage surface of the joint. It most commonly involves the knees, hips, shoulders, hands and spine, although any joint can be affected by the condition. Osteoarthritis is generally a progressive condition in that, with time, the cartilage surface of the joint continues to wear away. With the ongoing loss of the cartilage surface, arthritis symptoms commonly worsen. Unfortunately, once osteoarthritis develops within a joint, the condition cannot be reversed.

What Does Glucosamine and Chondroitin Do?

Glucosamine and chondroitin may alleviate arthritis symptoms for some people. The underlying thought is that by taking glucosamine and chondroitin you are supplementing elements that an arthritic joint lacks. Additionally, both components are thought to have some anti-inflammatory effects that may attribute to pain relief. Neither substance, alone or in combination, have proven to slow the progression of joint cartilage loss or restore damaged cartilage surfaces.

Glucosamine and chondroitin work very well for some people and not at all for others, probably depending on whether they have pain caused by unhealthy cartilage and whether they are able to respond to glucosamine and chondroitin.

How Should I Take Glucosamine and Chondroitin?

Glucosamine and chondroitin are commercially available in pharmacies, health food stores and retail stores and are sold via the Internet. Glucosamine is most commonly available as the sulfate, Hcl, N-acetyl or chlorhydrate salt isomers. In some preparations, glucosamine is combined with chondroitin sulfate. It is this combination, glucosamine and chondroitin sulfate, that is recommended for the treatment of osteoarthritis symptoms.

What are Glucosamine and Chondroitin?

Glucosamine and chondroitin are substances found naturally within the human body. Glucosamine is an aminomonosaccharide, a form of amino sugar that is believed to play a role in cartilage formation and repair. It is a component of human cartilage, bone, cornea, skin and arterial wall and is found in almost all human tissues. Chondroitin is a glycosaminoglycan and is important in maintaining the integrity of the cartilage structure by aiding in its resistance to compression.

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There are no known contraindications to glucosamine and chondroitin supplementation. It appears safe and has few short-term side effects. The most common side effects are increased intestinal gas, nausea and softened stools. Pregnant women, children and very elderly people should avoid glucosamine and chondroitin since no studies among these specific populations exist. Because glucosamine is an amino sugar, people with diabetes should check their blood sugar levels more frequently when taking this supplement. Recent long term studies have not indicated an exacerbation of diabetes while taking this supplement; however, caution and close monitoring should continue when beginning therapy. Patients taking blood-thinners should be extremely careful if they take glucosamine combined with chondroitin, which is similar to blood thinning drugs and could cause excessive bleeding. Additionally, caution is advised in those patients with fish allergies as chondroitin sulfate is, in some instances, derived from the cartilage of shark or shellfish.

The dosage of this supplement is based upon the amount of glucosamine and chondroitin a person requires. This amount is determined by a person’s body weight.

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<tr>
<th>Weight</th>
<th>Dosage</th>
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<tbody>
<tr>
<td>Up to 200 lbs</td>
<td>Glucosamine and Chondroitin Sulfate 1500 mg/day in divided doses</td>
</tr>
<tr>
<td>Over 200 lbs</td>
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Note that supplements are not monitored for quality and purity by the U.S. Food and Drug Administration. Therefore, the amount of glucosamine and chondroitin sulfate in a supplement may vary between manufacturers. Those supplements that may state “standardized” do not refer to outside monitoring standards, just those that are set by that specific manufacturer. Look for USP on the label which means the manufacturer has been certified by the U.S. Pharmacopeia. The label should also say made in U.S.

The response to glucosamine and chondroitin is slower than some other medications. It may take up to a month before symptoms are alleviated and discontinuation is recommended if there is no documented response after three months.

**What Does the Research Suggest?**

The Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT) was a multicenter, double-blinded, controlled study performed in 2004 that evaluated the efficacy and safety of glucosamine and chondroitin sulfate in the treatment of osteoarthritis of the knees over twenty-four months. It was funded by the National Center for Complementary and Alternative Medicine (NCCAM) and the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) divisions of the National Institute of Health. Nearly 1,600 patients participated in the study and were given either glucosamine, chondroitin sulfate, both glucosamine and chondroitin sulfate, celecoxib (an anti-inflammatory) or placebo (a pill having no pharmacological effect). Ultimately, the study concluded that glucosamine and chondroitin sulfate alone or in combination did not reduce pain effectively (greater than 20 percent from the start of the study to the finish) in the majority of patients. However, findings did demonstrate a statistically significant reduction of pain in those patients with moderate-to-severe pain who took combined glucosamine and chondroitin sulfate.

**Resources**

American Academy of Orthopedic Surgeons  ([www.aaos.org](http://www.aaos.org))

Mayo Clinic  ([www.mayoclinic.com](http://www.mayoclinic.com))


For more information contact the National Center for Complementary and Alternative Medicine Clearinghouse toll free at (888) 644-6226 or visit www.nccam.nih.gov.

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