



## Chondroitin / Glucosamine Sulfate

These 2 supplements are featured in every health magazine and vitamin supplement stand in almost any drug or food store you enter. What's all the excitement about - and more importantly for you - does it work for osteoarthritis and related joint disorders??

**Osteoarthritis (OA)** afflicts many Americans, especially those over age 65 where more than 3/4 of this population shows X-ray evidence of some joint wear and tear. **Degenerative Joint Disease** is a slowly progressive process of cartilage and bone destruction and a slowed repair phase which often also involves abnormal bone formation in the joint. Joint inflammation is hastened by release of inflammatory chemicals such as collagenase and others. All of these abnormalities lead to joint enlargement, swelling, stiffness and "grinding" which equal pain and decreased function.

Curiously the majority of every age group afflicted is overweight! No one knows what causes OA, but it's "association" with obesity is certainly a strong "clue" - though few are willing to admit it! My patients who have lost even 10% of their body weight have had noted relief from aching joints - not exactly a miracle - but something to take note of and to act on.

**Health promotion principles** suggest that we have everyone at risk of developing Osteoarthritis work towards: 1) **Achieving Ideal Body Weight** with improved nutrition. 2) **Maintaining a Regular Exercise Program** - Yes - regular exercise - Scientific literature supports and recommends regular exercise for the joints, even painful ones, with gradual improvement in pain and improved general well being with exercise!! These goals should be our first priority before we suggest any medicinal treatment for pain! 3) **Adding supplements** to aid joint function.

**Glucosamine Sulfate** is a salt of D-glucosamine which is an amino acid. It is usually obtained from the chitin of crab shells. It dissociates into a glucosamine ion and a sulfate ion. Controversy on which of the two is the active ingredient exists - some feel glucosamine, a building block for the structure of the joint, is the most active, and others feel that the sulfate portion serves as an essential nutrient for the joint's connective tissue structure.

**Chondroitin Sulfate** is usually derived from bovine trachea. It is not well absorbed like glucosamine. It is reported to maintain joint viscosity, prevent cartilage breakdown and stimulate new cartilage formation.

**Studies:** **More literature is being published daily that these two supplements really make a difference in people's lives** - the latest is: *Richy F, Bruyere O, Ethgen O, Cucherat M, et al.. Structural and symptomatic efficacy of glucosamine and chondroitin in knee osteoarthritis. A comprehensive meta-analysis. Arch Intern Med 2003; 163:1514-522.* They basically conclude that glucosamine and chondroitin produce a significant and similar effect on symptoms of osteoarthritis, and will improve joint mobility for 1 in 5 patients, and also may slow joint-space narrowing. Onset of action is several weeks. There are many more studies, the majority still stem mostly from the European and Asian literature, though more from the U.S. concur with their findings - all have shown favorable outcomes compared to placebo and against standard 400mg. doses of Ibuprofen! This all without the well know side effects of Non Steroidal Anti-Inflammatory Medications - upset stomach, intestinal bleeding, liver damage, etc.

**Common Doses:** 500 - 1,000 mg. three times daily based on Glucosamine component, and 400mg. three times daily of the Chondroitin component.

**Side Effects:** Less than 4% incidence of intestinal upset like nausea. No lethal dose has been determined. These should not be used during pregnancy. No data on use in children exists. Diabetics may experience a slight elevation of their blood sugar readings and should monitor them initially to see if any dietary or medical adjustments are required.

**Summary:** These are useful supplements to treat and possibly prevent Osteoarthritis with minimal or no noted side effects. Because of the positive studies and the lack of side effects, these should be tried before more toxic standard medications are considered. Supplementation should always occur in conjunction with sensible nutrition, exercise and weight loss when needed. Please work with your family physician as a team and let him or her know you are taking nutritional supplements!

#### References:

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