



# Health Supplements for Joints and Bones

## Glucosamine & Chondroitin Sulphate

Glucosamine is found naturally in the body, stimulating the formation and repair of cartilage. Chondroitin, also a natural substance of the body, helps to prevent other body enzymes from degrading of joint cartilage.

Glucosamine supplements are derived from shellfish and Chondroitin supplements are produced from beef products. Recent evidence shows that these substances relieve joint pain. However, there is not enough evidence to support the claims that they repair or restore the joint cartilage. They have some anti-inflammatory effects that can relieve pain. Most studies done to date have been short and are very much focused on pain relief. Furthermore, dietary supplements like glucosamine and chondroitin are not tested or analyzed by FDA before they are sold to consumers and hence, are not subject to stringent quality control.

These supplements are not appropriate for all forms of joint pain or for all people. Patients with shellfish allergy should avoid consuming glucosamine. Patients with diabetes, hypertension, or hyperlipidemia should consult their doctors before taking such supplements so as to ensure that their conditions can be monitored.

Therapeutic dose for Glucosamine is 500mg 3 times a day or 1500mg a day, or as directed by doctor. It may take at least 4 weeks before it becomes most effective.

## Calcium & Vitamin D

**Calcium** is the mainstay for preventing and treating osteoporosis. Adequate calcium intake during childhood and adolescent is essential to achieve peak bone mass during the third decade of life. It has a modest effect on delaying bone loss in middle age, but it cannot keep up with the rapid bone loss that occurs in the 5 years immediately after menopause. Adequate calcium intake is important for both women and men, particularly in later years to prevent bone loss.

Calcium can increase bone density when used with Vitamin D. Calcium is formulated in variety of salts including Carbonate, Phosphate (which are better absorbed when taken with food), whereas Citrate, Lactate, Gluconate can be taken without food. Calcium Citrate is a good choice for patient with low gastric acidity (for elderly patient or patient



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taking acid blocking drugs). Calcium supplement can given in three or four divided doses daily and absorption is greater when each dose does not exceed 500mg (or as directed by doctor).

Only the amount of elemental calcium is counted for daily requirement. Different calcium salts provide different percentages of elemental calcium. Calcium Carbonate provides 40% elemental calcium, Calcium Citrate 21%, Calcium Phosphate 39%, Calcium Lactate 13%, and Calcium Gluconate 10% respectively. Doses of more than 2400mg a day may increase the risk of kidney stone or kidney damage.

**Vitamin D** comes in many forms. The most important one is Cholecalciferol which is produced by our skin when exposed to sunlight, and Ergocalciferol from food. Major functions of Vitamin D are to maintain serum calcium within the normal range, enhance the intestinal absorption of calcium and also in maintaining bone structure. It is effective for preventing osteoporotic fractures when given together with Calcium. People above 65 years old may require higher amount of Vitamin D because their skin produces less Vitamin D compared to young adults. However, they should avoid taking more than 50mcg (2000 IU) per day as it can cause bone resorption and excessive Calcium in the blood.

Other minerals like **Magnesium, Fluoride, Manganese, Zinc, Boron** and vitamins like **Vitamin A, Isoflavones** like **Soy, Red Clover** may help to prevent bone loss or osteoporosis, but there is less evidence to support their use.

- Remember**
- i) There are many products in the market. **ALWAYS** take health supplements and alternative medicines with care.
  - ii) **ALWAYS** consult your health professionals before using any health or herbal supplements especially if you have existing medical conditions or are taking conventional medications.
  - iii) **Natural does not mean safe.** An overdose of health supplements may be harmful.

*The information in this leaflet is meant for educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's advice before starting any treatment or if you have any questions related to your health, physical fitness or medical condition.*

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