



# Glucosamine Sulfate

Natural, side effect-free joint care



- Maintains cartilage and joint health
- Helps relieve pain, tenderness, and swelling in joints

**ISO 17025**  
Accredited Laboratory



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# Glucosamine Sulfate



Glucosamine sulfate is quickly becoming one of the most popular alternative medicines for treating arthritis and joint pain. Why? Because many people are finding that they are able to stop using conventional drugs that cause undesired side effects.

Glucosamine sulfate does not have side effects, since it is natural to your body. The oral consumption of glucosamine salts provides the raw material needed for joint cartilage synthesis and repair. In nine European studies, the oral administration of glucosamine produced major reductions in joint pain, joint tenderness and joint swelling. Improvements in joint function and overall physical performance were noted in these studies compared to placebo and/or the drug ibuprofen. While ibuprofen worked faster than glucosamine in relieving pain, glucosamine was found to be attributed in the whole joint cartilage matrix. Studies show that glucosamine sulfate is a building block for cartilage. Glucosamine sulfate is absorbed quickly and easily. Lab tests show it is 98% absorbable and, because the molecules are small and simple, they actually penetrate the cartilage where they can help build the special proteins that keep cartilage strong and healthy.

Glucosamine, which is formed in the body as glucosamine 6-phosphate (G6-P), is the most fundamental building block required for the biosynthesis of the classes of compounds, such as glycolipids, glycoproteins, glycosaminoglycans (formerly called mucopolysaccharides), hyaluronate and proteoglycans, requiring amino sugars. Because it is a component of all these compounds, it is an essential component of cell membranes and cell surface proteins as well as interstitial structural molecules that hold cells together. Directly or indirectly, glucosamine plays a role in the formation of articular surfaces, tendons, ligaments, synovial fluid, skin, bone, nails, heart valves, blood vessels, and mucus secretions of the digestive, respiratory, and urinary tracts.

Connective tissue is comprised primarily of collagen and proteoglycans. Proteoglycans provide the framework for collagen and hold water, enhancing the flexibility and resistance to compression needed to counteract physical stress. The building blocks for collagen are amino acids such as proline, glycine, and leucine; however, the building blocks for all proteoglycans are amino sugars. G6-P is the building block needed as the precursor for all subsequent amino sugar synthesis. The formation of galactosamine, *N*-acetylglucosamine (NAG) and CS all require G6-P. Hyaluronic acid, the backbone of proteoglycans, also requires G6-P for its synthesis.

Glucosamine sulfate is not an anti-inflammatory or pain-relieving agent; rather a natural sea derived product that appears to halt the disease process.

Glucosamine sulfate has an excellent safety record. Some individuals may report light to moderate gastrointestinal upset, which often can be alleviated by taking the supplement with a meal. No allergic reactions have been reported.

Glucosamine sulfate is derived from the exoskeletons of shellfish. Those with a shellfish allergy should consult with a qualified health care professional. In recent studies, there was no evidence found that glucosamine sulfate causes imbalanced blood sugar levels with diabetics.

## Each vegetable capsule contains:

Glucosamine sulfate (from the exoskeleton of crab and/or shrimp stabilized with potassium chloride) (sodium-free)..... 500 mg or 750 mg

**Other ingredients:** Vegetable magnesium stearate and microcrystalline cellulose (500 mg only) in a non-GMO vegetable capsule composed of vegetable carbohydrate gum and purified water.

**500 mg:** NPN 80010450 · V0034-R1

**750 mg:** NPN 80043822 · V0036-R2

## Suggested use:

**500 mg / 750 mg: Adults:** Take 1 capsule three times daily or as directed by your health-care practitioner. Use for a minimum of 4 weeks to see beneficial effects.

Manufactured under strict GMP (Good Manufacturing Practices).

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