



## GLUCOSAMINE SULFATE – VEGAN

Glucosamine sulfate is a key amino sugar normally formed in humans from glucose. It is the starting point for the synthesis of many important macromolecules, including glycoproteins, glycolipids, and glycos-aminoglycans (mucopolysaccharides). The tissues containing these glucosamine macromolecules include tendons and ligaments, cartilage, synovial fluid, mucous membranes, several structures in the eye, blood vessels, and heart valves. A deficiency of glucosamine can reduce the rate of production of these important macromolecules, thereby leading to specific tissue weakness.

NPN: 80002232



### INGREDIENTS

EACH TABLET CONTAINS:

#### Medicinal Ingredients:

**Vegan Glucosamine Sulfate (GLS),** 1500 mg

#### Non-Medicinal Ingredients:

Croscarmellose sodium, calcium phosphate, vegetable magnesium stearate, microcrystalline cellulose, vegetable cellulose.

There are no other ingredients added to this formula.

#### Directions:

Take one caplet daily with water or juice s with a meal, or as directed by a health care professional.

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## OVERVIEW

### Why we need GLS

In certain cases of trauma to the tissues, the amount of glucosamine normally synthesized by the body is insufficient. Tissues in the joints can become damaged when these lubricating synovial fluids in the joint spaces become thin and watery. The normal cushioning is lost and consequently the bones and the cartilage scrape against each other inside the joint space. Weakened bursa sacs in the joints can also cause tendons to rub against the hard edges of bones, increasing the chance that the cartilage will erode and cause problems with movement and flexibility. These problems can also occur in the spinal column where the individual vertebrae are stacked on top of each other, separated only by the cushioning disc. The space between the vertebrae is where many nerves leave the spinal cord, which increases the value of the cushioning fluid. Any injury to this part of the back can cause the gelatinous cartilage to soften. When this happens, pressure may be put on the nerves, causing damage and loss of nerve function. Glucosamine Sulfate helps increase the thickness of the gelatinous material, creating more support for the joints and vertebrae.

There have been numerous studies showing the beneficial effects of Glucosamine Sulfate and its relationship with the symptoms of Osteoarthritis. Osteoarthritis is the most common form of arthritis. There are many over-the-counter medications available to relieve arthritis symptoms, yet conventional medicine has nothing to offer in terms of controlling or reversing the condition. In fact, there is evidence that long-term use of non-steroidal anti-inflammatory drugs (NSAIDs) actually accelerate joint destruction in patients with Osteoarthritis, by interfering with the body's healing mechanism.

### Building for the better

Glucosamine Sulfate is not an analgesic or an anti-inflammatory agent. Rather, it appears to halt the disease process. Improvements occur more slowly with Glucosamine Sulfate than with over-the-counter arthritis medications (NSAIDs), but eventually Glucosamine overtakes the NSAIDs in terms of effectiveness. An example of this is one study that compared Glucosamine Sulfate to Ibuprofen. Pain scores decreased faster in the first two weeks in the Ibuprofen group. However, by the fourth week of the study, the group receiving the Glucosamine Sulfate was doing significantly better than the Ibuprofen group.

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Glucosamine Sulfate is a stable, tasteless and water soluble nutrient which is virtually free of side effects and contra-indications. Having a relatively small molecular weight of 211, it is readily absorbed from the intestines, stays in the blood for several hours, and very little is excreted. In contrast, conventional arthritis medications can cause relatively severe side effects.

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