

Glucosamine Sulfate 500 mg Capsules



Product Summary:

Joint pain can be very painful and affect one's quality of life. Glucosamine is needed for the synthesis of compounds found in the tendons, ligaments, cartilage and synovial fluid. Glucosamine sulfate stimulates the manufacture of glycosaminoglycans, key components of cartilage, making it very useful for reducing joint pain in degenerative joint disease or osteoarthritis.

Properties/Uses:

The claim as approved by the *Natural Health Products Directorate* (NHPD): Helps relieve joint pain associated with osteoarthritis, protects against cartilage deterioration and is a factor in maintaining healthy cartilage and joint health.



MUSCULAR
& SKELETAL



Pharmacology:

Osteoarthritis, a degenerative joint disease, is the most common form of arthritis. It is characterized by the breakdown of the joint's cartilage, a smooth substance between the bones. Due to the cartilage breakdown, the joint lining becomes inflamed. This inflammation causes stiffness, pain and loss of functionality.

Glucosamine is a naturally occurring amino sugar, which is a constituent of cartilage proteoglycans and plays a role in cartilage formation and repair. Glucosamine is needed for the synthesis of compounds found in the tendons, ligaments, cartilage and synovial fluid. Glucosamine sulfate stimulates the manufacture of glycosaminoglycans (GAGs), key components of cartilage – making it very useful for degenerative joint disease or osteoarthritis. Orally, glucosamine sulfate is used for osteoarthritis, as well as glaucoma, temporomandibular joint arthritis, and weight loss.

Glucosamine is the most researched and most effective natural approach to osteoarthritis. Clinical trials show that taking glucosamine sulfate orally significantly improves symptoms of pain and joint functionality compared to placebo in patients with osteoarthritis of the knee in studies lasting up to 3 years.¹⁻³ Other clinical research shows that glucosamine sulfate might be more effective than acetaminophen for reducing symptoms in patients with moderate osteoarthritis of the knee.¹ Furthermore, glucosamine sulfate may be more effective than glucosamine hydrochloride.¹ There is also evidence that suggests that glucosamine sulfate is comparable to the non-steroidal anti-inflammatory drugs (NSAID) ibuprofen and piroxicam (Feldene) for symptom relief; however, NSAID appear to relieve symptoms within two weeks compared to four to eight weeks with glucosamine sulfate. Unlike NSAID and analgesics, glucosamine might have disease-modifying activity, slowing joint degeneration in patients with osteoarthritis. There is evidence that patients taking glucosamine for up to three years have significantly less knee joint degeneration, less joint space narrowing, and significant symptom improvement when compared to placebo. However, preliminary evidence suggests that glucosamine might not prevent disease flare-ups.⁴



Manufactured product information:

Manufacturer:

WN Pharmaceuticals® Ltd.

Size/UPC:

360's 7 77747 10341 6

NPN:

80000082

Expiry Date:

36 months from date of manufacture

Active Ingredient:

Each capsule contains:

Glucosamine Sulfate.....500 mg
(glucosamine sulfate potassium chloride from shrimp/crab exoskeleton)

Non-Medicinal Ingredients (in descending order):

Gelatin capsule (gelatin, purified water), rice starch, magnesium stearate.

Appearance:

White to off white powder in a hard gelatin capsule.

Packaging:

625 cc white round bottle with safety seal under a 53 mm white induction sealed cap with vented interior seal and a label applied to the bottle. Lot number and expiry date are printed on the label applied to the exterior of the bottle.

Storage:

Preserve in tight, light- resistant container in a dry place at a temperature between 15 – 25 °C.





Dose:

As per the NHPD Monograph for glucosamine sulfate, the daily recommended dose for osteoarthritis is 1,500 mg daily as a single dose or in 3 divided doses.^{4,5} Health Canada recommends use for a minimum of 4 weeks to see beneficial effects.⁵ Glucosamine has been used safely at this dosage in multiple clinical trials lasting from 4 weeks to 3 years.⁴

Directions:

(Adults): 1 capsule 3 times daily with meals or as recommended by a physician. Use for a minimum of 4 weeks to see beneficial effects.

Caution:

The caution as approved by the *Natural Health Products Directorate* (NHPD): KEEP OUT OF THE REACH OF CHILDREN. Consult a physician prior to use if you are pregnant or breastfeeding. Consult a physician if symptoms worsen. STORE AT ROOM TEMPERATURE IN A DARK, DRY PLACE. DO NOT USE IF SEAL UNDER CAP IS BROKEN OR MISSING.

Deficiency Symptoms:

Glucosamine is needed for the synthesis of compounds found in the tendons, ligaments, cartilage and synovial fluid and stimulates the manufacture of glycosaminoglycans, key components of cartilage. Given its important role in the body, a deficiency in glucosamine may cause joint pain.

Drug Interactions/Contraindications:

Warfarin (Coumadin): Taking glucosamine alone or in combination with chondroitin might increase the anticoagulant effects of warfarin (Coumadin) and increase the risk of bruising and bleeding. Patients taking warfarin should be advised to avoid or use glucosamine cautiously.⁸

Diabètes: Clinical research in people with type 2 diabetes and people without diabetes suggests glucosamine doesn't have any significant effect on blood glucose or lipid levels when taken for up to 3 years.⁴

Surgery: Patients should discontinue glucosamine sulfate at least 2 weeks before elective surgical procedures.





Toxicity/Adverse Reactions:

Orally, glucosamine sulfate can commonly cause mild gastrointestinal (GI) problems including nausea, heartburn, diarrhea, and constipation. Drowsiness, skin reactions, and headache have also been reported. However, adverse effects in clinical studies have generally been comparable to placebo. Glucosamine sulfate 1500 mg per day is tolerated at least as well as the nonsteroidal anti-inflammatory drug (NSAID) ibuprofen 1200 mg per day, and it is better tolerated than piroxicam (Feldene) 20 mg daily.⁴





Allergen Content/Ingredient Sensitivity:

NO	YES
Artificial Color	Shellfish
Artificial Flavor	Starch/Modified Starch
Artificial Sweeteners	Sulphites (<10 ppm)
Corn Products	
Egg Products	
Fish	
Gluten	
Hydrolyzed Plant Protein	
Lecithin	
Milk Products	
Peanuts	
Preservatives	
Sesame Products	
Soy Products	
Tartrazine	
Tree Nuts	
Wheat Products	
Yeast	

NOT ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTIONS:

Free of animal products

Kosher





References:

1. Herrero-Beaumont G, Ivorra JAR et al. Glucosamine sulfate in the treatment of knee osteoarthritis symptoms. *Arthritis Rheum.* 2007 Feb; 56(2): 555-567.
2. Pavelka K, Gatterova J et al. Glucosamine sulfate use and delay of progression of knee osteoarthritis. *Arch Intern Med.* 2002; 162: 2113-2123.
3. Reginster JY, Deroisy R, et al. Long-term effects of glucosamine sulphate on osteoarthritis progression: a randomised, placebo-controlled clinical trial. *Lancet.* 2001; 357: 251–56.
4. Natural Medicine Comprehensive Database (NMCD), Glucosamine Sulfate Monograph, Accessed May 2012 [Available from: <http://www.naturaldatabase.com/>]
5. Health Canada, Glucosamine Monograph, Accessed May 2012 [Available from: <http://www.hc-sc.gc.ca/>]
6. Villacis J, Rice TR, et al. Do shrimp-allergic individuals tolerate shrimp-derived glucosamine? *Clin Exp Allergy.* 2006; 36: 1457-1461.
7. Gray HC, Hutcheson PS, Slavin RG. Is glucosamine safe in patients with seafood allergy? *J Allergy Clin Immunol.* 2004 August; 114(2): 459-460.
8. Knudsen J, Sokol GH. Potential glucosamine-warfarin interaction resulting in increased international normalized ratio: Case report and review of the literature and MedWatch database. *Pharmacotherapy.* 2008; 28: 540-8.

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