



PROCOSA™ II

- Provides high-potency glucosamine sulfate (2,000 mg/daily dose) to promote optimal joint health*
- Formulated with vitamin C, manganese, and silicon, nutrients key to joint health*
- Contains fast-acting turmeric extract

Every day your joints endure an enormous amount of stress from physical activity, including walking, lifting, and typing. Despite this heavy and constant use, we take our joints for granted and expect them to function trouble-free for several decades. However, more than 50 million people in the U.S. and more than 6 million in Canada suffer from some form of joint problem. The situation is worse for athletes and those who have high amounts of physical stress at work and at home. To help maintain healthy joints, USANA created PROCOSA™ II, a product with a blend of glucosamine, manganese, vitamin C, and silicon—the building blocks for healthy cartilage.*

CARTILAGE

Cartilage is the protective layer that cushions and lubricates the joints. Over the years, the cartilage in our joints is gradually worn down due to normal physical activity. The body rebuilds the cartilage as it is worn and replaces shock-absorbing synovial fluid, so the joints are always protected. For various reasons, however, the production of new cartilage and synovial fluid can fall behind demand. Because of poor blood supply, lesions to articular cartilage do not heal at the same rate as other tissue in the body; cartilage is rebuilt slowly. And if components of the substances used for cartilage repair are in short supply, the recovery from damage can be slowed even more.

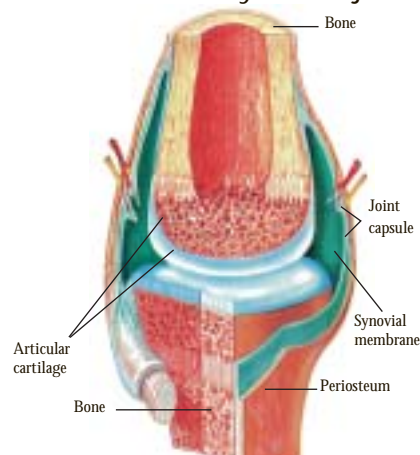


GLUCOSAMINE

Glucosamine, an aminosugar, is an important precursor in the biosynthesis of cartilage. Specifically, it is a building block of proteoglycans¹—protein molecules with a high content of bound carbohydrate. Proteoglycans and collagen compose the majority of the cartilage matrix.* Proteoglycans are essential for healthy cartilage because they bind the water that lubricates and cushions the joint.* When the articular cartilage degenerates, joint pain and osteoarthritis may result.

In addition to its role as a biochemical precursor, glucosamine is believed to play a role in

Structure of a synovial joint



regulating cartilage formation and normalizing cartilage metabolism by encouraging higher production of collagen and proteoglycans.* Glucosamine also stimulates synovial production of hyaluronic acid, which is responsible for the lubricating and shock-absorbing properties of synovial fluid.*

Numerous double-blind clinical studies have shown the efficacy of glucosamine supplements in maintaining healthy cartilage, healthy joints, and full range of motion in the short-term.^{2-8*} More recently, a three-year study was published showing that joint space increased in the glucosamine-treated group, while it continued to decrease in the placebo group indicating that the protective cartilage was better maintained in those who used glucosamine.⁹ Additional studies have demonstrated that glucosamine, taken orally, is well-absorbed and diffuses into tissues, including the articular cartilage.¹⁰⁻¹²

TURMERIC EXTRACT

Turmeric, the powdered root of the plant, *Curcuma longa* L., has long been used as a spice (e.g., in curry) and as a natural food colorant.¹³ Curcumin and related compounds (collectively known as curcuminoids) have been isolated and identified in turmeric. They are phenolics, which have significant antioxidant properties.^{14*}

MANGANESE, VITAMIN C, AND SILICON

Optimal joint health also involves three additional important ingredients. Manganese is required for enzymes involved in the biosynthesis of proteoglycans.* Vitamin C is essential for the reactions necessary to collagen formation,* and silicon is required for proper collagen formation and ultimately cartilage composition.*

The combination of turmeric extract with glucosamine sulfate, manganese, vitamin C, and silicon represents a more comprehensive approach to joint health. Over the long term, glucosamine sulfate, vitamin C, manganese, and silicon help to maintain healthy cartilage.* And glucosamine sulfate promotes the incorporation of sulfur, a component of all protein, into the cartilage matrix.

WHY PROCOSA™ II

PROCOSA II is USANA's fast-acting formula for joint health. We incorporate a full 2000 mg per day of high quality glucosamine sulfate, the highest dose in the industry. Then we combine this with turmeric extract for faster action and vitamin C, manganese, and silicon for comprehensive joint health.

PROCOSA II is laboratory tested and potency guaranteed. Meets USP specifications for uniformity and disintegration where applicable.

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

References:

1. Karzel K and Domenjot R, *Pharmacology*, 1971; 5:337-45.
2. Pujalte JM, Llavore EP, Ylescupidéz FR, *Curr Med Res Opin*, 1980; 7:110-14.
3. Lopes Vaz A, *Curr Med Res Opin*, 1982; 8:145-49.
4. Müller-Fassbender H, et al., *Osteoarth Cartilage*, 1994; 2:61-69.
5. Crolle G, D'Este E, *Curr Med Res Opin*, 1980; 7:104-09.
6. Dovanti A, Bignamini AA, Rovati AL, *Clin Therapeutics*, 1980; 3:266-72.
7. Pujalte JM, Llavore EP, Ylescupidéz FR, *Curr Med Res Opin*, 1980; 7:110-14.
8. Tapadinhas MJ, Rivera IC, Bignamini AA, *Pharmatherapeutica*, 1982; 3:157-68.
9. Reginster JY, et al., *Lancet*, 2001; 357:251-56.
10. Vaz AL, *Curr Med Res Opin*, 1982; 8:145-49.
11. Fabender HM, et al., *Osteoarth and Cartilage*, 1994; 2:61-69.
12. D'Ambrosio E, et al., *Pharmatherapeutica*, 1981; 1:504.
13. Stoner GD, Mukhtar H, *J Cell Biochem*, 1995; Suppl 22:168-80.
14. Sreejayan R, *J Pharm Pharmacol*, 1994; 46:1013-16.

PROCOSA II is designed to promote optimal joint health and full joint mobility.* Take two (2) PROCOSA II tablets, twice daily, preferably with meals.

Supplement Facts

Serving Size 2 Tablets

	AMOUNT PER SERVING	% DV*
VITAMIN C (AS CALCIUM ASCORBATE)	150 mg	250%
MANGANESE (AS MANGANESE GLUCONATE)	2.5 mg	125%
GLUCOSAMINE SULFATE	1000 mg	†
SILICON (AS AMINO ACID COMPLEX)	1.5 mg	†
TURMERIC EXTRACT (<i>CURCUMA LONGA</i> L.) (ROOT)	250 mg	†

* Percent Daily Values are based on a 2,000 calorie diet.

† Daily Value not established.