



Joint Flex

Joint health formula

DESCRIPTION

Joint Flex capsules, provided exclusively by Medical Wellness Associates, contain 500 mg of pure glucosamine sulfate and 250 mg of pure methylsulfonylmethane (MSM®). Ascorbic acid, proanthocyanidins, and bromelain are also included to provide additional aid in maintaining the health of aging joints.

FUNCTIONS

Glucosamine is a naturally occurring amino sugar found in glycosaminoglycans, integral components of the proteoglycans found in joint cartilage. Proteoglycans are large carbohydrate rich structures that provide resiliency, load distribution, shock-absorbing, compressive and lubricating properties to joints and connective tissues. The availability of glucosamine is an integral part of the synthesis of glycosaminoglycans and proteoglycans that are necessary during the constant remodeling that aging cartilage undergoes. Thus, the maintenance of healthy aging cartilage may be improved with enhanced deposition of glycosaminoglycans and proteoglycans.

Dietary glucosamine serves as an immediate precursor for glycosaminoglycan synthesis, and also stimulates incorporation of other precursors into the connective tissue matrix. Bioavailability of oral glucosamine sulfate is excellent. It is absorbed intact, and utilized very quickly by all tissues, including connective tissues. Glucosamine sulfate is more efficiently used for connective tissue metabolism than other glucosamine sources, such as cartilage extracts or chondroitin sulfate. In summary, glucosamine sulfate is a well recognized, highly effective source of glucosamine for glycosaminoglycan and proteoglycan synthesis in all connective tissues, such as cartilage, ligaments, tendons, skin, and bone.

MSM®, a derivative of DMSO, is a naturally occurring compound of biologically available sulfur,

an indispensable element in human nutrition. As part of the amino acids methionine and cysteine, sulfur is required for the structural integrity and function of almost every protein in the body, as well as the glycosaminoglycans of cartilage and other connective tissue. Dietary MSM® serves as a versatile donor of metabolically active sulfur for the synthesis of numerous organosulfur compounds and proteins in the body. As such, MSM® helps maintain normal immune response, lung function, connective tissue metabolism, and muscle contraction. MSM® occurs naturally in a variety of foods, such as fruits, vegetables, cereal grains, milk, and fish. However, MSM® is volatile and easily lost during cooking. MSM® is very well absorbed by the intestinal tract and rapidly distributed within the body.

Bromelain, a protease from the pineapple plant, reduces the production of proinflammatory prostaglandins by modulating the arachidonate cascade. Its ability to modulate the body's normal inflammatory processes may reduce the discomfort associated with aging joints.

Proanthocyanidins, such as those found in red wine, are natural polyphenolic bioflavonoids that are widespread in nature and highly regarded for their strong antioxidant properties, as well as their functions in supporting the body's connective tissues. They have been shown to bind with collagen fibers, thereby protecting from premature degradation. This helps maintain the natural elasticity of collagen in skin, joints, arteries, capillaries, and other connective tissues.

Although vitamin C has numerous biological functions, foremost, it is essential for the synthesis of collagen and glycosaminoglycan which are the building materials of all connective tissues, such as joint cartilage, tendons, blood vessels, skin, and bone. Ascorbic acid (vitamin C) is the required coenzyme for two groups of enzymes that catalyze the cross linking of collagen fibers -lysyl hydroxylases and

(continued on reverse)

prolyl hydroxylases. Consequently, vitamin C is essential for the normal structure and function of connective tissue.

INDICATIONS

Joint Flex capsules may be a useful nutritional adjunct for individuals who wish to support the structure and function of the body's connective tissues, such as cartilage, bone, tendons, ligaments, and skin.

FORMULA (#83909)

Each capsule contains:

Vitamin C (Ascorbic Acid).....	50	mg
Glucosamine Sulfate.....	500	mg
Methylsulfonylmethane (MSM®).....	250	mg
Proanthocyanidins (red wine).....	10	mg
Bromelain.....	10	mg

SUGGESTED USE

One capsule per day or as directed by a physician.

SIDE EFFECTS

None reported.

STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

References

- Anonymous. [Gonarthrosis--current aspects of therapy with glucosamine sulfate (dona200-S)]. *Fortschr Med Suppl* 1998;183:1-12.
- D'Ambrosio E, Casa B, Bompani R, Scali G, Scali M. Glucosamine sulphate: a controlled clinical investigation in arthrosis. *Pharmatherapeutica* 1981;2:504-8.
- Giordano N, Nardi P, Senesi M, Palumbo F, Battisti E, Gonnelli S, Franci B, Campagna MS, Gennari C. [The efficacy and safety of glucosamine sulfate in the treatment of gonarthrosis]. *Clin Ter* 1996;147:99-105.
- Gottlieb MS. Conservative management of spinal osteoarthritis with glucosamine sulfate and chiropractic treatment. *J Manipulative Physiol Ther* 1997;20:400-14.
- Kelly GS. The role of glucosamine sulfate and chondroitin sulfates in the treatment of degenerative joint disease. *Altern Med Rev* 1998;3:27-39.
- Leffler CT, Philippi AF, Leffler SG, Mosure JC, Kim PD. Glucosamine, chondroitin, and manganese ascorbate for degenerative joint disease of the knee or low back: a randomized, double-blind, placebo-controlled

pilot study. *Mil Med* 1999;164:85-91.

Lopes Vaz A. Double-blind clinical evaluation of the relative efficacy of ibuprofen and glucosamine sulphate in the management of osteoarthritis of the knee in out-patients. *Curr Med Res Opin* 1982;8:145-9.

Lotz-Winter H. On the pharmacology of bromelain: an update with special regard to animal studies on dose-dependent effects. *Planta Med* 1990;56:249-53.

Masson M. [Bromelain in blunt injuries of the locomotor system. A study of observed applications in general practice]. *Fortschr Med* 1995;113:303-6.

McCarty MF. The neglect of glucosamine as a treatment for osteoarthritis--a personal perspective. *Med Hypotheses* 1994;42:323-7.

McCarty MF. Enhanced synovial production of hyaluronic acid may explain rapid clinical response to high-dose glucosamine in osteoarthritis. *Med Hypotheses* 1998;50:507-10.

Murav'ev Iu V, Venikova MS, Pleskovskaia GN, Riabantseva TA, Sigidin Ia A. [Effect of dimethyl sulfoxide and dimethyl sulfone on a destructive process in the joints of mice with spontaneous arthritis]. *Patol Fiziol Eksp Ter* 1991;37-9.

Pujalte JM, Llavore EP, Ylescupidez FR. Double-blind clinical evaluation of oral glucosamine sulphate in the basic treatment of osteoarthritis. *Curr Med Res Opin* 1980;7:110-14.

Qiu GX, Gao SN, Giacobelli G, Rovati L, Setnikar I. Efficacy and safety of glucosamine sulfate versus ibuprofen in patients with knee osteoarthritis. *Arzneimittelforschung* 1998;48:469-74.

Richmond VL. Incorporation of methylsulfonylmethane sulfur into guinea pig serum proteins. *Life Sci* 1986;39:263-8.

Rovati LC. Clinical research in osteoarthritis: design and results of short-term and long-term trials with disease-modifying drugs. *Int J Tissue React* 1992;14:243-51.

Russell AL. Glucosamine in osteoarthritis and gastrointestinal disorders: an exemplar of the need for a paradigm shift. *Med Hypotheses* 1998;51:347-9.

Setnikar I. Antireactive properties of "chondroprotective" drugs. *Int J Tissue React* 1992;14:253-61.

Setnikar I, Cereda R, Pacini MA, Revel L. Antireactive properties of glucosamine sulfate. *Arzneimittelforschung* 1991;41:157-61.

Setnikar I, Pacini MA, Revel L. Antiarthritic effects of glucosamine sulfate studied in animal models. *Arzneimittelforschung* 1991;41:542-5.

Shankland WE, 2nd. The effects of glucosamine and chondroitin sulfate on osteoarthritis of the TMJ: a preliminary report of 50 patients. *Cranio* 1998;16:230-5.

Tapadinhas MJ, Rivera IC, Bignamini AA. Oral glucosamine sulphate in the management of arthrosis: report on a multi-centre open investigation in Portugal. *Pharmatherapeutica* 1982;3:157-68.

Taussig SJ, Batkin S. Bromelain, the enzyme complex of pineapple (*Ananas comosus*) and its clinical application. An update. *J Ethnopharmacol* 1988;22:191-203.

**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.**

**Medical Wellness Associates
6402 Route 30
Jeannette, Pa 15644
1-800-834-4325
www.vitamincoach.com**