# **Glucosamine Sulfate**

#### For maintaining the integrity of healthy joints<sup>†</sup>

#### DESCRIPTION

Glucosamine Sulfate, provided by Douglas Laboratories®, is a well-absorbed source of glucosamine, an important precursor for the synthesis and maintenance of connective tissues. †

### **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.

## **INDICATIONS**

Glucosamine Sulfate capsules may be a useful dietary supplement 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 (#80688)

## SUGGESTED USE

Adults take 1 capsule daily or as directed by a healthcare professional.

#### SIDE EFFECTS

No adverse side effects have been reported.

#### **STORAGE**

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

# **Glucosamine Sulfate**

For maintaining the integrity of healthy joints<sup>†</sup>

#### REFERENCES

Akarasereenont P, et al. J Med Assoc Thai. 2009 Sep;92(9):1234-9.

Selvan T, Rajiah K, Nainar MS, Mathew EM. ScientificWorldJournal. 2012;2012:902676.

Giordano, N, et al. Clin Ter 1996;147:99-105.

Gottlieb, MS. J Manipulative Physiol Ther 1997;20:400-14.

Leffler, CT, et al. Mil Med 1999;164:85-91.

Lopes Vaz. Curr Med Res Opin 1982;8:145-9.

McCarty, MF. Med Hypotheses 1994;42:323-7.

Qiu, GX, et al. Arzneimittelforschung 1998;48:469-74.

Russell, AL. Med Hypotheses 1998;51:347-9.

Setnikar, I, Pacini, MA, Revel, L. Arzneimittelforschung 1991;41:542-5.

Tapadinhas, MJ, Rivera, IC, Bignamini, AA. Pharmatherapeutica 1982;3:157-68.

#### For more information on Glucosamine Sulfate visit douglaslabs.com

† 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.

Manufactured by Douglas Laboratories 600 Boyce Road Pittsburgh, PA 15205 800-245-4440 douglaslabs.com



© 2015 Douglas Laboratories. All Rights Reserved