

How Does CosaminDS Help?

CosaminDS is a nutraceutical with proven benefit in the management of joint degeneration. Taken daily as a dietary supplement, CosaminDS supplies three important nutrients your joints need for maintaining the integrity and function of their cartilage and synovial membranes; Glucosamine hydrochloride, Chondroitin-4-sulphate and manganese ascorbate.

Each component of CosaminDS is used by cartilage in a different but complementary way to maintain cartilage metabolism, inhibit enzymes associated with normal cartilage deterioration, and to protect its blood supply.

Extensive research has confirmed the role and benefit that each component plays in nurturing joint tissues. Further research and trials with the specific CosaminDS formulation, has confirmed its consistent efficacy and safety in the nutritional management of degenerative joint conditions in man and animals.

The following is only a summary of the way in which CosaminDS's ingredients assist joint structure and function.

Joints and Articular Cartilage

Understanding how and why CosaminDS assists joint function requires an understanding of the basic structure and physiology of joints.

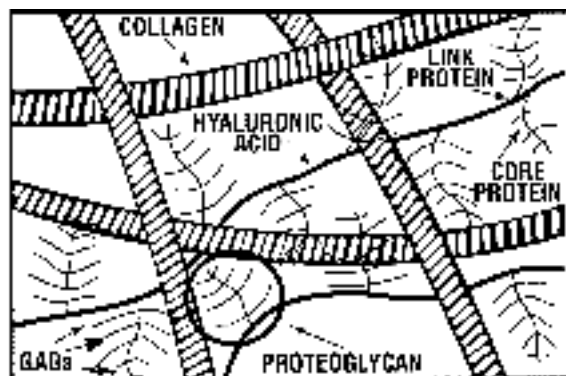
Optimal functioning of the skeletal joints (knees, wrists, elbows, fingers, toes, shoulders, neck and back) dramatically affects our mobility and dexterity - especially as we age. This in turn, dictates not only the level of athletic activity a person can enjoy, but can even affect the performance of such routine daily functions as turning a door knob or climbing stairs.

Articular cartilage plays an important role in optimal joint function by providing a smooth, low friction, lubricating surface between articulating bone ends, while acting as a shock absorber for the underlying bone.

One of the remarkable functions of articular cartilage is its ability to replenish its major components in response to the forces placed upon it. Cartilage contains cells called chondrocytes which manufacture, and then deposit around themselves, the large protein molecules called collagen and proteoglycans that make up the main mass or matrix of cartilage. This matrix gives cartilage its properties of resilience and tensile strength. Collagen is a tough rope-like protein that physically connects the tissues and provides the tensile strength. The proteoglycans are mainly hyaluronic acid and glycosaminoglycans (GAG's), complex molecules that form a spongy water-holding network and provide the resilience of cartilage.

During normal joint movement the cartilage matrix is subject to continual wear. As well, natural enzymes within the joint (metalloproteases) work to degrade cartilage as part of normal biological processes. So chondrocytes constantly synthesise new collagen and proteoglycans to replenish the matrix and preserve the integrity of articular cartilage. But in order to do this, the chondrocytes need the raw materials (nutrients) to manufacture the matrix components, collagen and GAG's. Key nutrients for the manufacture of GAG's are glucosamine, chondroitin sulphate, and manganese.

Under normal circumstances, our diets provide enough of these nutrients to keep the chondrocytes supplied for manufacturing GAG's. But as we age, or when joint wear and tear is excessive, the chondrocytes require more nutrients to maintain a healthy matrix



than may be available from a normal diet. As well, as we age, natural chondroitin sulphate production by chondrocytes is reduced. So gradually, chondrocytes find it more difficult to maintain their natural replenishment and repair processes, and the signs of degenerative joint disease start to appear. It's all part of growing older.

By now you can see that it makes sense to consider supplementing one's diet with glucosamine, chondroitin sulphate and manganese, once degenerative processes start to exceed natural repair processes. It's to feed the chondrocytes so that they can better maintain their function of replenishing the structure of the matrix.

Essentially, that's how CosaminDS works.

The supplemented glucosamine and chondroitin sulphate are easily absorbed from the digestive tract. Once in the blood stream, they have a natural affinity for joints, and so, to being available to chondrocytes. Manganese is a co-factor that helps chondrocytes use these building blocks to produce more complex GAG's.

The CosaminDS formulation is patented world wide. CosaminDS is manufactured by Nutramax Laboratories Inc., to the highest standards in state of the art facilities in the USA. This ensures each capsule is of a consistent quality, purity and integrity. There is no substitute for CosaminDS.

That is why CosaminDS is available only from Biocel Health Ltd. Biocel Health distributes only the very best of nutraceutical products. Those are products that have passed our strict criteria for selection based on sound scientific research and evaluation for proven safety and effectiveness. Products must also be manufactured to the highest standard and in accordance with strict quality assurance procedures that ensure consistent quality and purity of ingredients.