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Chondroitin sulfate

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fact sheet

Available from numerous manufacturers as generic compounds: branded products include Ramott (Key Company); Chondroitin Sulfate Support (Natural Treasures); CSA (Twinlab); and Chonflex (American Health). Similar in action and usage as glucosamine, and in many instances are used in combination. Depending on brand and manufacturer supplements are made from extracts of cattle (trachea), pig (ear and nose), shark, fish or bird cartilage. The dose is around 400milligram taken 3 times per day. Always check manufacturer's instructions prior to taking any supplement.

How does it work?

No studies have demonstrated exactly how chondroitin sulfate supplements works. All explanations of the mechanism of action are speculative, based on the natural function of chondroitin sulfate in the body. Chondroitin sulfate is one of the molecules making up glucosaminoglycans and these in turn make up the proteoglycans. Proteoglycans in different forms make up cartilage in bones and joints. Chondroitin sulfate is an important structural component of cartilage and provides much of its resistance to compression. It is thought that breakdown of these proteins cause joint degeneration and osteoarthritis. Theoretically if you supply chondroitin sulfate to the body, you will help restore these molecules.

What is it used for?

Chondroitin sulfate has a similar use to glucosamine. It is mainly used in osteoarthritis (OA) that is well established as an aid against pain and joint discomfort. Also used prophylactically to prevent further joint damage. There is some evidence that it also has some effect against atherosclerosis in heart disease.

What is the evidence?

Multiple studies have been done into the effect of these supplements; however most of the early studies have had questionable results. A review in *JAMA (Journal of the American Medical Association)* in 2000 concluded: 'Trials of glucosamine and chondroitin preparations for OA symptoms demonstrate moderate to large effects, but quality issues and likely publication bias

suggest that these effects are exaggerated. Nevertheless, some degree of efficacy appears probable for these preparations'. These preparations seem most effective if glucosamine and chondroitin sulfate is taken together. The effect seems best in patients with moderate-to-severe pain in their joints.

Potential problems

A variety of mild gastrointestinal symptoms such as stomach pain, nausea and diarrhea have been reported. No sulfa-allergic reactions or other allergic reactions have yet been reported.

Conclusion

As supplements go the evidence is moderately strong that these supplements have a real effect. There also seem to be limited side effects. I would therefore recommend their use for osteoarthritis. However always see you doctor prior to starting any supplement as joint pains can be a sign of a more serious medical problem.

Explanation of terms:

Exoskeleton: the skeleton is on the outside such as the lobster.

Meta-analysis: combines the results of several studies that address a set of related research hypotheses.

Osteoarthritis: this is medically a complex disease that affects joints in the body. It is thought of as a 'wear and tear' disease of the joint. Cartilage in the joints is worn away resulting in pain and limitation to mobility.

Prophylactically: (Greek 'prophylaktikos' to guard or prevent beforehand) refers to any medical or public health procedure whose purpose is to prevent, rather than treat or cure, disease.

Randomised clinical trial: the basic idea is that treatments are allocated to subjects at random. This ensures that the different treatment groups are 'statistically equivalent'.

References

http://www.pdrhealth.com/drug_info/nmdrugprofiles/nutsupdrugs/cho_0071.shtml

http://en.wikipedia.org/wiki/Chondroitin_sulfate

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