Chondroitin

Common Indications:

- Antineoplastic marker
- Cardiovascular Effects
- Osteoarthritis and other inflammatory conditions.
- Sports injury.
- Support cartilage function.
- Used in conjunction with glucosamine for arthritic and inflammatory conditions.

General Comments:

Chondroitin works to increase glycosaminoglycans, a key element in cartilage. Glycosaminoglycans work to reduce the damaging effects of joint enzymes such as elastase and hyaluronidase which can damage cartilage. Chondroitin is protective and supportive of cartilage and aids in production of valuable hyaluronic acid. It is obtained from shark, bovine and avian sources. As we age our joints and cartilage begin to lose water content, essentially becoming dehydrated and resulting in less flexibility and mobility. Chondroitin works to rehydrate joint tissue and cartilage. It serves to keep joints more elastic and less rigid. This same hydrating effect helps blood vessels where chondroitin is also naturally found.

Benefits & Mechanism of Action:

Antineoplastic marker

- In vitro evidence suggests that exogenous chondroitin sulfate regulates fibrosarcoma cell adhesion, motility, and migration through JNK and tyrosine kinase signaling pathways.[1]

- There is also some evidence that chondroitin might be useful in cancer monitoring. There is evidence that measurements of endogenous chondroitin sulfate in the peritumoral stromal tissue of the prostate can be a useful biomarker in the disease progression of prostate cancer. The concentration of chondroitin sulfate is increased in the prostate tissue of men with prostate cancer when compared to tissue samples of cancer-free men. When used with the Gleason score and the prostate-specific antigen (PSA) level, the peritumoral chondroitin sulfate measurement can allow practitioners to more accurately assess the progression of prostate cancer.[2]

Cardiovascular Effects

- Some researchers think chondroitin might have cardiovascular applications due to potential antiatherogenic properties. Laboratory studies suggest that chondroitin might protect against atherosclerosis.[3,4] Also, preliminary clinical research suggests that chondroitin sulfate may lower cholesterol levels in humans when used for 64 months.[5]

Osteoarthritis/Inflammation

- A 2012 meta-analysis of using chondroitin sulfate orally in patients with osteoarthritis reported that 1gm daily of chondroitin sulfate was effective in improving symptoms of knee osteoarthritis, including reducing functional impairment and relieving pain.[6]

- Another 2010 meta-analysis reported chondroitin was effective in reducing the rate of decline in minimum joint space width in patients with knee osteoarthritis.[7]

- A 2010 meta-analysis reported chondroitin sulfate may delay radiological progression of OA of the knee after daily administration for over 2 or 3 years.[8]

- Reported to reduce inflammatory processes by acting on the nuclear translocation of NF-κB, which is closely associated with the blood biomarkers of inflammation, primarily IL-1, IL-6 and C-reactive protein.[9]

Sports Injury

- Used as nutritional support in sports injury, acute traumatic injury, and other connective tissue injuries
- Aids in improving cartilage function

Other:

Symptoms of Depletion:

- Since humans can synthesize chondroitin, there is no deficiency condition directly associated with it. However, production of chondroitin tends to decrease with age.

Food Sources:

- There is no dietary source of chondroitin. As a supplement, chondroitin is manufactured from shark, porcine, and bovine cartilage.

Dose: 300 - 1,500 mg daily in divided doses.

Cautions & Side Effects

- If you are taking prescription or non-prescription medications or if you have a pre-existing medical condition, talk with your healthcare provider before taking any dietary supplement.
- Do not use if you are pregnant or breastfeeding.
- Do not take if there is an allergy to any component of this dietary supplement.
- There is no known toxicity when using chondroitin as a dietary supplement.
- There are no known drug interactions with chondroitin.

DISCLAIMER: Statements made are for educational purposes and have not been evaluated by the US Food and Drug Administration. They are not intended to diagnose, treat, cure, or prevent any disease. If you have a medical condition or disease, please talk to your doctor prior to using the recommendations given.

References:

Benefits and Mechanism of Action

Anticancer Marker

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Cardiovascular Effects

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Osteoarthritis/Inflammation

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Other Resources

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