

## Chondroitin Shows Benefits for Knee Health

By Greg Arnold, DC, CSCS, April 14, 2011, abstracted from "Chondroitin sulphate reduces both cartilage volume loss and bone marrow lesions in knee osteoarthritis patients starting as early as 6 months after initiation of therapy: a randomized, double-blind, placebo-controlled pilot study using MRI" in the *Annals of Rheumatism and Disease*

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Osteoarthritis is the most common musculoskeletal disorder and the leading cause of pain and disability in the USA (1). Osteoarthritis affects more than one-half of adults over 65 years of age (2) and is estimated to cost our healthcare system more than \$86 billion each year (3).

With no known cure for arthritis, treatment is aimed at reducing pain and preventing further reductions in joint health and mobility. MSM (4), cod liver oil (5), selenium (6) and glucosamine with (7) and without (8) exercise have been found to help maintain joint health. Now a new study (9) has found that chondroitin sulfate may not only help joint health but do so fairly quickly.

In the study, 69 patients between the ages of 40 and 80 with knee osteoarthritis were first given either 800 mg of chondroitin sulfate or placebo per day for 6 months and then both groups were given 800 mg per day of chondroitin for another 6 months. Before the study, at 6 months and after the study, the patients had a knee MRI done to measure knee cartilage volume and bone marrow lesions (that occur from the bone-on-bone friction with arthritis).

The researchers found that those in the chondroitin group suffered 39% less cartilage loss at 6 months (2.67% vs. 4.67% loss,  $p = 0.03$ ) and 40% less at 12 months (3.71% vs. 6.12%,  $p = 0.021$ ) compared to the placebo group. The researchers observed that the chondroitin sulfate in the 2nd half of the study for the placebo group led to a significantly less rate of cartilage loss compared to the first 6 months (1.45% loss in months 6-12 vs. 4.67% loss in months 1-5). The 2nd 6 months also benefited the chondroitin group, with a 1.04% loss in months 6-12 compared to a 2.67% loss in months 1-5.

For bone marrow lesions, although the chondroitin group had a 35% lower bone marrow lesion score at 6 months (0.13 vs. 0.20), the results were not statistically significant ( $p = 0.462$ ). But there was a 161% lower score at 12 months (-0.57 vs. 0.43,  $p = 0.062$ ) compared to placebo, suggesting it may take at least 6 months of chondroitin sulfate supplementation to benefit bone marrow lesions.

For the researchers, "These findings suggest a joint structure protective effect of Chondroitin Sulfate."

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