

# AthletiHINTS



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## Glucosamine & Chondroitin

### Introduction

The treatment and potential modification of diseased articular cartilage has generated great interest among both the public and physicians. To date, the use of dietary supplements called “nutraceuticals” has sparked significant interest in the potential to alter the course of osteoarthritis or degenerative arthritis.

Osteoarthritis is a disease generally involving the articular cartilage, which is a white smooth covering of the joints. Any insult or damage to this tissue has generally been thought to be irreparable, leading to slow progressive degeneration of the cartilage. This eventually leads to clinical degenerative arthritis (osteoarthritis) which produces changes in the entire joint and the underlying bone.

### Glucosamine and Chondroitin Sulfate

Glucosamine and chondroitin sulfate are the nutraceuticals typically used to affect osteoarthritis. These substances are used by chondrocytes, or cartilage cells, to produce one of the main functional components of articular cartilage. Glucosamine is sold in two forms: glucosamine sulfate and glucosamine hydrochloride. The hydrochloride form has been shown to be more bioavailable or absorbable. Chondroitin sulfate products vary in their bioavailability as well, with those of lower molecular weight (L.M.W.) being better absorbed by the gut. Chondroitin products seem to be available in varying purity and molecular weight.

### Safety and Efficacy

The use of nutraceuticals appears to be safe at the present time. Any side effects observed are not generally severe. Bleeding problems, which were at one time thought to be associated with these products, appear now to be unrelated.

Studies demonstrating the efficacy of glucosamine hydrochloride and chondroitin have recently been published in scientific literature. The affects of supplementation seem to be increased thickness of articular cartilage. While these studies are too early to provide conclusive proof that these products have an ability to reproduce cartilage, they do suggest that glucosamine hydrochloride and chondroitin sulfate can help relieve joint pain.

There are a variety of commercial preparations of these medicines available. Presently, daily doses of approximately 1500 mg of glucosamine hydrochloride and 1200 mg of chondroitin sulfate appear to be reasonable. As with most nutritional supplements, one should consider early scientific evidence as somewhat speculative. The nutritional supplement industry is a multi-billion dollar business, and some claims may lack a scientific basis.

### Conclusion

There will continue to be varying reports on nutraceutical agents for the treatment of osteoarthritis. While this remains an area of great interest, it would at this point be premature to state that glucosamine hydrochloride and chondroitin sulfate supplements may reverse osteoarthritis. Studies are presently being done to elucidate the mechanisms by which these supplements affect joints and more fully evaluate their potential use.