



## Glucosamine and Symptomatic Effects Osteoarthritis

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### Abstract

Over the last 20 years, several studies have investigated the ability of glucosamine sulfate (GS) to improve the symptoms (pain and dysfunction) and delay the structural progression of osteoarthritis. There is now a large, convergent body of evidence that glucosamine sulfate, given at a daily oral dose of 1,500 mg, significantly reduce the symptoms of osteoarthritis in the lower limbs. This dose of glucosamine sulfate has also been shown to prevent the joint space narrowing observed at the femorotibial compartment in patients with mild-to-moderate knee osteoarthritis. This effect also translated into a 50% reduction in the incidence of osteoarthritis-related surgery of the lower limbs during a 5-year period following the withdrawal of the treatment. Some discrepancies have been described between the results of studies performed with a patent-protected formulation of glucosamine sulfate distributed as a drug and those having used glucosamine preparations purchased from global suppliers, packaged, and sold over the counter as nutritional supplements.

Furthermore, an open study conducted by 252 physicians throughout Portugal evaluated the tolerability of GS in 1,208 patients. Patients were given, 500 mg GS orally, three times a day, for a mean period of 50.3 days. Most patients (88%) reported no side effects. In the remaining 12% of the study population, the reported adverse effects were mild and predominantly affected the gastrointestinal tract. All the reported complaints were reversible with the discontinuation of GS. While some questions were raised regarding the role of glucosamine in glucose metabolism and the possibility of increased insulin resistance, a detailed review of scientific studies performed with GS ruled out this

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