



GLUCOSAMINE SULFATE

For your joints

“The pain was so intense I could only walk a few yards with great difficulty. It was impossible to sleep without pain-killers... I started taking your glucosamine sulfate – relief was almost immediate – within three days I painted all the ceilings in our home. After two weeks I went on a ten mile walk... In the hope that this letter may help others you have my permission to use this for advertising purposes.” Just one of the many persons who have taken glucosamine sulfate with remarkable results. Why do our joints become so painful? What is glucosamine sulfate and why is it having such remarkable effects on debilitating joint pain?

DEGENERATIVE JOINT DISEASE – A PAINFUL PROCESS

Degenerative joint disease or osteoarthritis is a chronic condition primarily of the weight bearing joints of the body. Almost half the population has some form of joint degeneration by age 60. It can be associated with certain occupations and sports such as ballet or football, or it can occur in a joint after an injury or fracture. Here is how it gets started: “In OA [osteoarthritis] the normally smooth cartilage becomes softened and dull. It begins to lose its elasticity, and its surface may become worn in spots. It also thins out, so it can’t absorb as much synovial fluid. Consequently, the bones move closer together and the joint space narrows. Eventually the cartilage may grow so thin in spots that the bones begin to rub against each other.” (Pisetsky) Small pieces of bone and cartilage may become loose and get caught inside the joint, or cause bony spikes that irritate the joint. As we age there is less ability to manufacture and restore cartilage. Symptoms of degenerative joint disease include stiffness, soreness when initiating movement, and varying degrees of pain, from minor to intense.

An amino sugar synthesized in our bodies from glucose, glucosamine sulfate is the starting point for important macromolecules that make up many body tissues including proteoglycans, the substance of cartilage in the joints. It is also involved in the synthesis of mucous membranes in the digestive and respiratory tract. Glucosamine helps to form the cushioning ingredients in joint fluids and surrounding tissue, making the synovial fluid thick and elastic, increasing its cushioning ability, lessening the friction and pain. When our lubricating synovial fluid becomes thin, its ability to cushion is reduced. Cartilage, bones, and tendons can rub against each other causing damage, loss of movement and pain. Especially excruciating pain results when discs in the spinal cord put pressure on the nerves because the synovial fluid is too thin.

ARE NSAIDS THE ANSWER?

A common misconception is that nothing can slow osteoarthritis – that it is a progressive condition where only the pain be managed with NSAIDS (non-steroidal anti-inflammatories) such as Advil or Motrin. Although NSAIDS do suppress the painful symptoms, recent research suggests that they may actually accelerate the progression of degenerative joint disease. Studies have shown that these drugs contribute to cartilage destruction and inhibit new cartilage formation. Prolonged use of these anti-inflammatories can cause gastrointestinal bleeding, or liver and kidney damage. (Brooks, *et al.*)

Unlike NSAIDS, glucosamine sulfate addresses more than the pain. It gets right to the root of the problem by stimulating connective tissue production and repairing damaged joints. A Portuguese study involved 40 patients who had arthritis in only one knee. They were divided into two groups: one group received 1.2 grams of Ibuprofen daily for eight weeks and the other group received 1.5 grams of glucosamine. Those given ibuprofen had rapid decrease in pain during the first two weeks, but increased pain after the end of eight weeks. The glucosamine group did not have the dramatic pain relief during the first two weeks but at the end of the eight weeks they had much less pain than the ibuprofen group. (Vaz, *et al.*)

THE RESEARCH

“For the first time, we have shown that a compound may be able at least to slow down the progression of osteoarthritis.” A statement by Jean-Yves Reginster, MD, PhD, lead investigator of a three-year study on glucosamine, presented at the 1999 American College of Rheumatology Annual Scientific Meeting. The researchers measured joint space widths and disease symptoms between patients taking 1,500 mg of glucosamine sulfate daily or a placebo. While the joint spaces continued to narrow on the patients taking the placebo, there was no further narrowing in patients on glucosamine sulfate. Whereas symptoms worsened for those on placebo, symptoms improved for those on glucosamine. (Reginster, *et al.*)

In another study 20 patients with osteoarthritis of the knee received 500 mg of glucosamine sulfate three times a day or a placebo for six to eight weeks. Glucosamine sulfate relieved the joint tenderness, swelling and pain significantly, whereas the placebo results were fair to poor. (Puljalte, *et al.*)

IS IT SAFE?

“A number of double-blind studies dating from the early 1980s demonstrate that oral glucosamine decreases pain and improves mobility in osteoarthritis, without side effects.” (McCarthy) Any substance that is taken for a long time should be safe. We know too well about the numerous side effects associated with the long-term use of non-steroidal anti-inflammatory drugs. This makes glucosamine sulfate even more appealing. It has proved virtually non-toxic, with very few adverse effects reported.

WHAT ABOUT DOSAGE?

Although many take up to 3 grams a day, the standard amount is 500 mg, three times a day. It is best to check with a knowledgeable health care practitioner for your personal ideal dosage.

DO YOU KNOW WHAT YOU'RE GETTING?

Can consumers be assured about the quality of the glucosamine sulfate they buy? Does the manufacturer test the raw material for glucosamine content? Is each batch of glucosamine tested for sodium and heavy metal residues? Does each batch undergo microbial testing?

Natural Factors follows Good Laboratory Practices which is part of our Good Manufacturing Practices (GMP) Certification and we can confidently answer ‘yes’ to these questions. Natural food stores carry Natural Factors and other high quality products. These questions are particularly pertinent when a consumer decides to purchase glucosamine in other places, such as department stores and mass market outlets, or if the price is just too good to be true. When it comes to glucosamine, you do get what you pay for.

OTHER SUPPORTIVE STRATEGIES FOR DEGENERATIVE JOINT DISEASE

Many have had success with nutritional supplements such as niacin, vitamin E, supplemental chondroitin sulfate, omega-3 oils (such as flaxseed and salmon oils) as well as the herb, devil's claw. Avoiding allergenic foods

sometimes provides relief, as does learning to relax, losing weight, and participating in regular exercise that does not aggravate already sore joint. SAME (S-Adenosyl Methionine) has also shown remarkable results in the successful management of some forms of arthritis.

KEY REFERENCES

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