# Fix Your Body

## Glucosamine; Friend or Foe

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-Without prejudice-

Glucosamine is an amino acid derivative of glucose. It is a constituent of polysaccharide (large sugar) in animal supporting structures and the cell walls of bacteria and fungus (yeast). In the late 1980's many articles appeared regarding glucosamine inhibitors as having anti-fungal, anti-Candida, anti-leukemia, anti-salmonella, anti-malarial and anti-bacterial properties.

In the early 1990's a company found that glucosamine sulfate relieved joint pain. A double blind study where the study group was divided into three groups were given either a sugar pill, glucosamine HCL, or glucosamine sulfate without anyone knowing which group got which "medication". The study group filled out extensive questionnaires about their symptoms and pain levels. The improvement in symptoms between the sugar and glucosamine HCL groups was identical. The improvement in the glucosamine sulfate group was distinctly better. The report concluded that only the sulfate was responsible for the benefit and not the glucosamine.

In another study it was found that glucosamine increased juvenile arthritis by 18%. Many of the studies state that the most common reason that people dropped out of a study was because of increased bloating and gas. Some reported an increase in headache and migraine. Many people that I have talked to tell me that their bloating and gas subsides when they stop taking glucosamine.

Another reported side effect of glucosamine is weight gain. Some find that they are 15-20 pounds heavier after about 2 years of glucosamine without any other dietary of life style changes. Weight gain with glucosamine makes perfect sense to me because a healthy person carries about 4.5 pounds of bacteria and if we supplement something that enhances their growth we would get heavier. Greater numbers of bacteria in our body would also consume more of our energy. This weight gain also causes an increase in fatigue and tiredness. An increase in depression, anxiety and panic would result as the fungal levels went up.

On the recent medical side of glucosamine causing fatigue there are studies showing that elevated glucosamine levels are associated with mitochondrial dysfunction. The mitochondrial are responsible for producing the energy for

life (ATP). It is also strongly noted that mitochondrial dysfunction is directly related to rapid ageing.

The research seems to be coming back to life since the middle of 2003 in regard to glucosamine. These more recent studies reiterate the diabetic risk but now also include cancer and neuro-degeneration. A molecule closely related to glucosamine is the standard agent used to induce diabetes in lab animals. The internet is loaded with slick sites to lure people into glucosamine. Who would be so interested in you taking glucosamine?

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# United States Senate Special Committee on Aging

**Hearing on Swindlers, Hucksters and Snake Oil Salesmen:**
**The Hype and Hope of Marketing Anti-Aging Products to Seniors**
**September 10, 2001**

**Testimony of Timothy N. Gorski, M.D., F.A.C.O.G.**
**Assistant Clinical Professor, University of North Texas Health Science Center**
**President, Dallas/Fort Worth Council Against Health Fraud**
**Board Member, National Council Against Health Fraud**
**Associate Editor, *Scientific Review of Alternative Medicine***

**Current Issues in Protecting the Public from Health Fraud:**
**"Dietary Supplements" as a Public Health Problem**

- Another potential public health threat is that of glucosamine, which is widely promoted for the treatment of arthritis on the basis of very scanty evidence. It is probably among the top ten best-selling "dietary supplements." Yet glucosamine is known to increase resistance to insulin at doses comparable to those recommended for these products. In layman's terms, glucosamine tends to cause diabetes, a disorder that many older Americans have or are susceptible to. Diabetes, in turn, is a risk factor for heart disease.

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