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# Glucosamine

PO Box 2065  
Bondi Junction  
NSW 1355

info@healthyintentions.com.au  
www.healthyintention.com.au

## fact sheet

Glucosamine has become increasingly popular as a supplement due to its reported effect in osteoarthritis. Commercial products include: Aflexa (McNeil Consumer); Natures Blend Glucosamine (National Vitamin Co.); GS-500 (Enzymatic Therapy); Glucosamine Complex (Schiff); and others. Some are synthetically manufactured while others are derived from marine exoskeletons. The usual dose is 500 milligram three times per day; however always check the instructions before you take any supplements.

### *How does it work?*

No studies have demonstrated exactly how glucosamine supplements works. All explanations of the mechanism of action are speculative, based on the natural function of glucosamine in the body. Glucosamine is one of the molecules making up glucosaminoglycans and these in turn make up the proteoglycans. Proteoglycans in different forms make up cartilage in bones and joints and it is thought that the breakdown of these proteins cause joint degeneration and osteoarthritis. Theoretically, if you supply glucosamine to the body, you help restore these molecules.

### *What is it used for?*

The main use is in people that have established osteoarthritis and the aim is to relieve joint pain and to attempt to prevent further damage. The effects in healthy people with no joint problems have not been studied.

### *What is the evidence?*

In a recent meta-analysis assessing the efficacy of glucosamine in treating symptoms of osteoarthritis, 13 randomised clinical trials compared glucosamine to a placebo (dummy drug); glucosamine was found to be superior in all except 1, using a variety of outcomes including patient reports of pain and mobility. In the four randomised clinical trials in which glucosamine was compared to a non-steroidal anti-inflammatory drug (NSAID), glucosamine was superior in two, and equivalent in two, again using the same outcomes. These studies have been small and subjective;

therefore some experts in the field feel that further research needs to be done to prove the effect of these supplements. These trials are now underway.

### ***Potential problems***

Other than allergic reactions to the shellfish component, glucosamine appears to be safe. In most countries glucosamine is sold as a dietary supplement, so safety and formulation is solely the responsibility of the manufacturer.

### ***Conclusion***

There is evidence that this supplement works. I would therefore recommend it to anyone who has joint pains. However always see your doctor prior to starting any supplement as joint pains can be a sign of a more serious medical problem.

### ***Explanation of terms:***

Exoskeleton: the skeleton is on the outside, such as the lobster.

Meta-analysis: combines the results of several studies that address a set of related research hypotheses.

Osteoarthritis: this is medically a complex disease that affects joints in the body. It is thought of as a 'wear and tear' disease of the joint. Cartilage in the joints is worn away resulting in pain and limitation to mobility.

Randomised clinical trial: the basic idea is that treatments are allocated to subjects at random. This ensures that the different treatment groups are 'statistically equivalent'.

### ***References***

<http://en.wikipedia.org/wiki/Glucosamine>

[http://www.pdrhealth.com/drug\\_info/nmdrugprofiles/nutsupdrugs/glu\\_0122.shtml](http://www.pdrhealth.com/drug_info/nmdrugprofiles/nutsupdrugs/glu_0122.shtml)

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