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## Glucosamine Sulfate for Joint Health

### The Real Thing

Glucosamine is a natural product of importance in veterinary medicine. It is found in abundance in the shell of shrimp. It is not a complex substance and is easily available as a nutrient when ingested. Glucosamine is necessary to provide a cushion between bones where they meet. Further, it stimulates the synthesis of glycosaminoglycans (GAG). It also supports the incorporation of necessary sulfur into cartilage.

Glucosamine sulfate is an effective anti-inflammatory alternative to nonsteroidal anti-inflammatory drugs (e.g. Rimadyl, Etogesic, Deramaxx). It provides the raw material necessary to repair arthritic joints. Licorice used with glucosamine sulfate for arthritis is effective. Glucosamine sulfate works! Five to ten days of treatment and results are apparent.

If painful arthritis is present double the dosage on the label for one week then decrease to the recommended daily dosage. After symptoms disappear use one half the recommended dosage as a geriatric supplement.

### Beware of substitutes

There are a lot of joint products, which are no more than concoctions, on the market. There always is someone who will come up with some farce and put enough hype in the air to sell it to someone. At the North American Veterinary Conference (January 2006) I noted dozens of products being promoted for joint health. Nearly all of them are overpriced mixtures of substances that have little, if any, positive effect on arthritis or joint health. One of these contained nearly equal preparations of chondroitin sulfate, methylsulfonylmethane, glucosamine hydrochloride and glucosamine sulfate. This joint “formula” had a catchy name and was expensive.

The young man attending the exhibit announced that it had “all the good stuff in it” and asked me what I thought. I told him if he took out the methylsulfonylmethane, the chondroitin sulfate and the glucosamine hydrachloride and replaced them with lawn clippings that the resultant mixture with the glucosamine sulfate and lawn clippings would be just as effective for joint health because of the glucosamine sulfate, it would have nutritional value because of the lawn clippings and it would be a lot less expensive because methylsulfonylmethane, chondroitin sulfate and glucosamine hydrachloride were removed!

- Methylsulfonylmethane (MSM)
- Chondroitin Sulfate (CS)
- Glucosamine Hydrachloride (GHCl)
- N-acetyl-D-glucosamine (NAG)
- Mixtures of these.

All of these are inferior to unadulterated glucosamine sulfate.

There are over 300 studies on glucosamine sulfate lauding its laurels. Those on MSM, NAG, CS and GHCl are negative or published, largely unrefereed by those wishing to sell their products.

The facts are:

1. Chondroitin sulfate is a huge molecule, molecular weight is approximately 50,000. Its bio-availability is near zero, no more than 13% by the most favorable report. There are those that argue that they have low weight chondroitin and therefore it is more available. Avoid their product for there is but one molecular weight in chemistry not a high and a low. If they believe there is such a thing they are ignorant. If they know better they are being dishonest.
2. Chondroitin sulfate is expensive.
3. Glucosamine hydrachloride is moderately effective but is not as bio-available as glucosamine sulfate and it is more expensive. Recent press has reported Glucosamine hydrachloride to be no better than placebo.

4. There is no, absolutely no, convincing evidence that MSM is effective. It appears that MSM is only a catchy name that has gained a following.
5. N-acetyl-D-glucosamine (NAG) has no advantage over glucosamine sulfate.
6. The mixtures of these things are only mixtures of things that are expensive, don't work well and if mixed with glucosamine sulfate make it more expensive and the efficacy of the mixtures is less than that of glucosamine sulfate alone.
7. Glucosamine sulfate bio-availability is 90% to 98%. Glucosamine sulfate is the preferred form and is the least expensive.

Some researchers/authors are so down on everything but glucosamine sulfate that they deny that glucosamine hydrochloride has any merit whatsoever. From the literature and personal experience with horses and dogs, I believe that glucosamine sulfate is clearly the star and other concoctions are just that –concoctions.

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