
JOINT HEALTH COMPLEX

When it comes to relieving the pain and inflammation of joint problems, many people simply try to mask the pain with pain-killing medications. This doesn't really address the root cause of the problem, which is often that the body cannot produce enough new cartilage to keep up with the disintegration of existing cartilage that provides a cushion between the bones in the joint.

Glucosamine, a nutrient extensively used for the therapeutic management of joint pain and stiffness in animals originally, has been widely used for humans for several decades now and has received strong support from doctors and other health care professionals. Glucosamine compounds are amino sugars found naturally in the body that help to cement various tissue cells together and are very important in joints and surrounding tissues as a cushioning ingredient. As the old cartilage deteriorates over time, inflammation, pain, swelling, and decreased joint movement ensue. Glucosamine supplementation helps the body make new cartilage to replace worn-out cells and tissues in the joints, thus addressing the root cause of joint stiffness and pain.

Shaklee researchers have always preferred glucosamine **hydrochloride**, rather than glucosamine **sulphate**, for joint health. First of all, there's more glucosamine in the hydrochloride form than in the sulphate form. Since it's more concentrated, less is needed to have a beneficial effect on bone movement. Secondly, glucosamine hydrochloride is sodium free, whereas the sulphate form is often combined with sodium chloride, or table salt, as a stabilizing agent. Excess sodium is not desirable for persons with hypertension (high blood pressure). While some companies add chondroitin sulphate to their joint health products, it's not that well absorbed and it inhibits the absorption of glucosamine. There's also some experimental evidence that glucosamine hydrochloride helps the body make its own chondroitin sulphate, so we haven't added it to our new enhanced **Joint Health Complex** formula.

Traditionally, glucosamine has been obtained from a compound called chitin, which has been extracted from the exoskeletons of certain shellfish such as crabs, shrimp, and lobsters. Since persons with shellfish allergies are leery of any product derived from shellfish, we use an all-vegetable source of glucosamine hydrochloride derived from chitin in the cell walls of *Aspergillus niger*, a vegetative micro-organism grown in a fermentation process using corn. This means that there's no possibility of potential allergens (i.e., shellfish proteins), heavy metals from ocean-harvested shellfish, or antibiotics from farm-raised crustaceans in our glucosamine source.

To deal with the pain and inflammation of problem joints, we've included a powerful herbal ingredient called *Boswellia serrata* resin extract in our **Joint Health Complex** formula. Its effectiveness is due to its ability to neutralize an enzyme known as 5-lipoxygenase, or 5-LOX.

This enzyme accumulates as we get older and is also made in response to the body's overproduction of arachidonic acid when we eat too many omega-6 fatty acids (from red meat, poultry, eggs, and dairy products) and high-glycemic carbohydrates (refined sugars and starches). The 5-LOX enzyme breaks down arachidonic acid, which releases compounds that cause inflammation, so stopping the enzyme stops the inflammation.

One specific compound found in boswellia, called AKBA (3-O-acetyl-11-keto- β -boswellic acid), is responsible for this beneficial action, and the source we use in **Joint Health Complex** is standardized to contain 20% AKBA. In clinical tests, this boswellia extract was found to produce joint comfort in as few as five days and was shown to have bioactivity superior to another popular boswellia product in the North American market.

Certain mineral ingredients – manganese, copper, and zinc – and vitamin C have also been found to be helpful in the cartilage-building process or in connective tissue formation, and these are also present in **Joint Health Complex**.

In updating our formula we also made one other notable modification: we changed the dosage form from a two-piece gelatin capsule to a coated tablet, or caplet. This not only makes it easier to swallow but also allows it to be kosher certified.

Both glucosamine and boswellia aren't known to have any of the side effects or interactions with medications or other herbal ingredients that many medications used to treat joint pain have. And, unlike medications that treat the symptoms of joint pain, **Joint Health Complex** will address the root cause of the problem. That's the Shaklee Difference™!