

Q&A

On TyH's Joint Care Line-Up

Our first baby steps. Pedaling that first two wheeler by yourself. Year round sports. Romantic strolls on a moonlit beach. Nothing is more natural than a body in motion. And that's the way the body should be helped if something needs repair—naturally. After all, you wouldn't feed your body plastic food to survive, would you? Staying healthy is the ideal way to keep moving through life but there's still hope if your knees and joints start aching. There's a multiple choice of products shown to reduce pain and put you back in motion.



What choices do I have for joint health?

The primary cause of most joint pain is loss of cartilage and the slippery fluid where bones meet at the joint. When cartilage is thin, bone can wear on bone. Injury, age, free radical damage, structural misalignment, inflammation are all contributing factors. Cartilage is made up of connective tissue held together in a matrix of elastic fibers, collagen and special cells. All these parts are required for cartilage to be flexible, strong, supportive and resistant to infections. Giving your body the raw material to help cartilage repair and regenerate is the science behind most joint products.



Why is Glucosamine so important?

Glucosamine is a precursor to glycoaminoglycans found in normal cartilage matrix and synovial fluid. Your body naturally makes glucosamine via biosynthesis of glutamine, a required amino acid, and sugar so it's considered a protein-sugar. It's also a building block of chondroitin and hyaluronic acid, two other connective tissue components. Its anti-inflammatory benefits also decrease swelling, and may help other damaged connective tissue such as muscle, tendon, or bone. As a supplement, glucosamine is highly absorbable (90%). It's been safely used in more than 300 scientific investigations, double-blind studies and recognized in more than 70 countries for the treatment of osteoarthritis. As a foundational substance, glucosamine is the gold standard by which other joint products are measured. Other nutrients are often added to assist rather than replace it, such as chondroitin, hyaluronic acid, MSM, vitamin C, herbs and antioxidants. Study doses are 1500 mg daily for 3 consecutive months. Faster results were seen at 2000-2500 mg for the first month and then reduced to maintenance.

Do I need chondroitin and hyaluronic acid?

Both help to attract water which makes up 80% of cartilage and gives the cushioning to bear wear, yet the elasticity to bounce back under pressure. Since joints have no blood supply, nutrients, oxygen and fluids are supplied via synovial fluid bathing them. Hyaluronic acid is found in all body tissues, with a higher concentration in synovial fluid. Chondroitin also inhibits the enzymes that degrade cartilage. More bounce and fluidity makes joints less painful to move. A typical dose of chondroitin is 800 to 1200 mg daily; hyaluronic acid 50 mg 1-3 times daily.

Does glucosamine affect sugar levels?

In a review of 3063 human subjects for 66 weeks, study author J.W. Anderson concluded, "In contrast to NSAIDs, no serious or fatal side effects have been reported for glucosamine. Our critical evaluation indicates that glucosamine is safe under current conditions of use and does not affect glucose metabolism" (*Food & Chem Tox* 2/05).

Are there other cartilage helpers?

Yes, MSM, SAM-e, Vitamin C and Celadrin®. Methyl-sulfonyl-methane (MSM) is a nontoxic form of sulfur, a mineral found in every cell. MSM is a structural component of connective tissue for bone and cartilage, needed for repair and rebuilding. With magnesium, it assists the absorption of calcium for bones. Strong muscles and bones provide stability and strength to joints. Plus, MSM eases inflammation to assist in pain relief. Sulfur is often deficient in arthritis patients and restoring levels offer significant benefit at therapeutic (divided) doses of 2500-5000 mg daily. Another sulfur member, S-adenosylmethionine (SAM-e) helps cartilage matrix repair like MSM. In studies, a dose of 400 mg of SAM-e taken 3 times daily reduced pain

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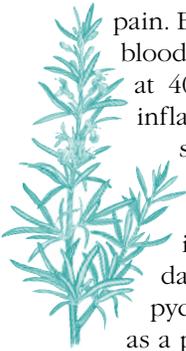
when compared to NSAIDs. Vitamin C facilitates collagen synthesis and repair, and reduces oxidative damage to cells and tissues. Buffered C forms won't upset your stomach. Celadrin® is a patented esterified fatty acid that reduces inflammation and increases mobility in less than 30 days per published trials. Celadrin® protects cell membranes to reinforce cell function and flexibility.

How do systemic enzymes help?

Systemic or whole body enzymes (Fibro-Enzymes™) help control inflammatory pain. Their proteolytic action also clears cellular debris and scar tissue that may block circulation, oxygen and nutrients getting to muscles, tissues or joints. Do not confuse systemic forms with enzymes that support digestion only.

What about herbs?

Per studies, rosemary extract (specifically ursolic acid) inhibits COX-2 without the side effects, and lessens pain. Boswellia serrata inhibits inflammation, improves blood supply to joints and protects cartilage synthesis at 400 mg 3 times per day. Ginger contains anti-inflammatory compounds called gingerols. Most studies used 1 gram of powdered ginger root. Bromelain is a proteolytic enzyme from pineapple. If taken without food, it reduces inflammation by breaking down proteins in damaged connective tissue. New studies on pycnogenol show its benefits for joints as well, both as a protector antioxidant and COX-2 inhibitor.



Do natural substances compare to NSAIDs?

Non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin, Advil®, Aleve® and Motrin® work faster on pain by reducing inflammation more quickly. Other NSAIDs like Celebrex® were designed to reduce GI bleed risks but led to other risks. Two important differences are safety and ability to heal. Natural compounds do not cause the GI bleeds, stomach upsets, liver failure or death attributed to clotting issues of NSAIDs, which is important in long-term therapy. Secondly, NSAIDs decrease symptoms at the cost of cartilage as they interfere with cartilage formation. Naturals work; they just take longer (from 1 to 3 months). Clinical trials on glucosamine as early as 1980 show it comparable to ibuprofen or aspirin. The celebrated six month GAIT study of 1583 patients compared glucosamine with celecoxib (Celebrex®), with similar results for pain but glucosamine takers had increased mobility and function. Glucosamine and chondroitin also appear to inhibit the enzymes that break down cartilage so they also have a preventative role.

What is a COX-2 inhibitor?

Cyclooxygenase-2 (COX-2) is an enzyme that helps synthesize prostaglandins, substances involved in the inflammatory process. Besides causing pain, inflammation is often destructive to cells and tissues.

Why does a diet high in EFAs help?

Essential fatty acids (EFAs) contain omega 3, which the body uses to control chemicals (prostaglandins) involved in inflammation. Omega 3 can be found in fish, especially salmon, and plants like flax. Saturated fats, like omega 6 found in red meat and some dairy, can actually assist the inflammatory process.

If I am allergic to shellfish or vegan, can I take glucosamine?

Most glucosamine forms are from shellfish such as lobster, crab and shrimp. If you are allergic to shellfish, try the newer form of vegetarian glucosamine, brand name Regenasure®, which is made from a vegetarian, non-animal source.



Do Joint Care products help if I have FMS?

With fibromyalgia, it is often difficult to separate one pain from another. By helping to improve any other painful conditions in the body, overall pain is reduced while function is improved. Conversely, magnesium is the relaxing mineral and helps support muscles nutritionally to lessen the “pull” of too tight muscles on joints. Plus, glucosamine also supports muscle connective tissue repair.

What else do I need to know?

Joints are only as good as their weakest link. Don't forget the joint attachments—muscles, tendons and ligaments—or the bones themselves may need strengthening and nutrients. They stabilize joints and are part of the mobility picture. Also, researchers are studying the effects of low antioxidants on cartilage degradation. Those lowest in vitamin E, C and A are at higher risks of osteoarthritis, the primary disease associated with joint problems. If you are overweight, you are three times more likely to suffer arthritis since your knee joints deal with triple your body weight in stress. Weight loss can help. Mild daily exercise “stresses” joints in a good way, stimulating repair and circulation of fluids to the joint area.

What about glucosamine for my dog?

After the age of 2, adult dogs can use preventative help, too, especially in breeds known for hip dysplasia. Check with your veterinarian for the right amount for your pet's weight and activity.



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