



Glucosamine and chondroitin are supplements used for managing joint pain. They are both naturally occurring substances that are part of the body's tendons, ligaments, cartilage (the rubbery substance that covers the ends of bones), synovial fluid (a lubricating fluid found in joints), and other tissues. Glucosamine in supplements often comes from shellfish (crab, lobster, and shrimp), while chondroitin is usually from cow (bovine) sources. They can also be produced synthetically (man-made).

### What is it used for?

Glucosamine and chondroitin help reduce pain in mild to moderate osteoarthritis of the knee and hip. The use of glucosamine and or chondroitin in other joints has not been studied.

### What is osteoarthritis?

It is known as the “wear and tear” arthritis and is the most common type of arthritis. It is also called degenerative joint disease, meaning it gets worse over time. It may happen at any age but is especially common for people in their 50s and 60s. Osteoarthritis generally affects the weight bearing joints, like the knees, hips, and the joints of the spine. It can also happen in other joints in the body.

### How is osteoarthritis treated?

The goals of osteoarthritis treatment are to reduce pain and stiffness; and to maintain or increase movement.

This may be done by:

- medications and supplements
- moist heat and ice packs
- joint protection
- physical activity

In addition, you can learn to pace your activities and practice other self-care techniques such as stress reduction practices. Some people are able to manage pain with little or no medications or supplements. Your physician or nurse practitioner can help you learn about other treatments available for managing your chronic pain.

### How do glucosamine and chondroitin work?

We are not exactly sure how glucosamine and chondroitin work. It is thought that both glucosamine and chondroitin may increase the production of cells, synovial fluid, and connective tissue, and also slow the break-

down of cartilage. Some manufacturers claim that they can stop or reverse damage from osteoarthritis, however there is not enough scientific evidence to confirm this.

### Are they safe?

Both glucosamine and chondroitin are generally safe to take. However, there are some concerns with each supplement.

#### Glucosamine

- *diabetes:* People who have diabetes may have more trouble controlling their blood sugar when taking this supplement.
- *allergies:* People that have allergies to shellfish may have an allergic reaction, if glucosamine is made from shellfish products.

#### Chondroitin

While there are no reports of adverse effects, there is some concern with the following:

- Chondroitin may cause blood thinning due to its anticoagulant (blood clot prevention) effect.
- Chondroitin is made from cow (bovine) products. There are no reports of any problems from cow products used in making chondroitin.

In addition, your doctor may recommend avoiding the use of chondroitin if you have been diagnosed with prostate cancer or have an increased risk of prostate cancer. Chondroitin may increase the spread or the return of the disease.

## Do I have to worry about side effects?

Side effects from both glucosamine and chondroitin are rare. Some of the common complaints are:

- nausea
- indigestion
- heartburn
- diarrhea
- constipation

Some people have reported drowsiness, headache, and skin rashes after taking glucosamine.

## How much should I take?

Both products are sold without a prescription (over-the-counter). They are sometimes sold in combination in one capsule, but are also available separately. It is not known if they work better when taken separately or combined together.

The following recommendations are based on scientific studies.

### Glucosamine

- 500mg, three times a day
- It may take as long as 4 weeks to notice an effect.

### Chondroitin

- 400mg, three times a day
- It may take as long as 4-8 weeks to notice an effect.

## Which brand should I buy?

Supplements vary widely in quality and purity. At Kaiser Permanente we are working with selected manufacturers to offer high quality supplements.

## Before taking glucosamine or chondroitin, first discuss with your doctor, nurse practitioner, or pharmacist . . .

- if you have diabetes
- if you are taking blood thinning medications, including aspirin or aspirin-like medications
- the risks, benefits, and possible side effects
- all other medications that you are taking, including over-the-counter medications, herbs, and supplements.

## Your role:

- Clearly understand how to take these supplements. If you have any questions, ask your doctor, nurse practitioner, or pharmacist.
- Track how these supplements affect your pain by keeping a pain diary. Share this information with your doctor or health care professional.
- Note the side effects that you experience and report them to your doctor or health care professional.

## Supplements: safety matters.

In recent years, there has been increasing interest in the use of supplements. Many people think that because "it's natural, it must be safe." However, anything that has possible good effects also has side effects. In fact, some herbs and supplements can cause sickness and even death. Research on herbal and supplement effectiveness, side effects, and supplement-drug interactions is only now beginning. If you have any questions, talk with your health care professional.

## Call Kaiser Permanente if . . .

- you experience side effects that concern you
- your activity level begins to decline
- you have a fever or skin rash along with severe joint pain
- the joint is so painful that you cannot use it
- there is sudden, unexplained swelling, redness, heat, or pain in any joint
- there is severe pain and swelling in multiple joints
- you experience sudden back pain that occurs with weakness in the legs or loss of bowel or bladder control
- joint pain continues over six weeks and home treatment is not helping.

## Additional resources

- Connect to our Web site at [members.kp.org](http://members.kp.org) to access health and drug encyclopedias, interactive programs, healthclasses, and more.
- Check your *Kaiser Permanente Healthwise Handbook*.
- Contact your Kaiser Permanente Health Education Center or Department for health information, programs, and other resources.
- Live your life to the fullest. Take control of your chronic pain with our HealthMedia® Care™. For your health online program, log onto [kp.org/healthylifestyles](http://kp.org/healthylifestyles) and get started today.

This information is not intended to diagnose or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse any brand name: any similar products may be used.