What is?

Glucosamine is a natural compound found in cartilage — the tough tissue that cushions joints. In supplement form, glucosamine is harvested from shells of shellfish or made in a lab. There are several forms of glucosamine, including glucosamine sulfate, glucosamine hydrochloride and N-acetyl glucosamine.

1. What is glucosamine good for?

Glucosamine, which is produced naturally in the body, plays a key role in building cartilage; the tough connective tissue that cushions the joints. Several scientific studies suggest that glucosamine may be an effective treatment for osteoarthritis (OA).

# Glucosamine

Glucosamine sulfate; Glucosamine hydrochloride

Glucosamine, which is produced naturally in the body, plays a key role in building cartilage; the tough connective tissue that cushions the joints.

Several scientific studies suggest that glucosamine may be an effective treatment for osteoarthritis (OA). OA is a type of arthritis that occurs when cartilage breaks down and is lost, either due to injury or normal wear and tear. It commonly occurs as people age. In some studies, glucosamine supplements have decreased the joint pain of OA. Not all studies are positive, however, and several have not found any positive effect from taking glucosamine. It is not clear why the studies have conflicting results. But experts disagree on whether glucosamine is helpful in treating OA.

In the past, some researchers thought glucosamine may actually slow progression of the disease, unlike other current medical treatments for OA. Many people take either acetaminophen (Tylenol) or nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Advil, Motrin) and naproxen (Aleve) for OA pain. Some of these drugs can cause stomach upset, cramps, constipation, diarrhea, and in some cases, stomach ulcers, and infertility.

So far studies have not shown conclusively that glucosamine helps repair or grow new cartilage, or prevents further damage to cartilage. Glucosamine is often taken with chondroitin, another supplement thought to be effective in treating OA. Like glucosamine, chondroitin has conflicting results in studies.

## Uses

## Osteoarthritis

Results from several scientific studies suggest that glucosamine supplements may be an effective treatment for OA, particularly OA of the knee or hip. In general, these studies suggest that glucosamine:

* Reduces OA pain
* Improves function in people with hip or knee OA
* Reduces joint swelling and stiffness
* Provides relief from OA symptoms for up to 3 months after treatment is stopped

However, the largest clinical trial so far, the 2006 Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT), sponsored by the National Institutes of Health (NIH), showed conflicting and somewhat confusing results. The study of about 1,600 people with OA of the knee found that glucosamine alone, or in combination with chondroitin, did not reduce pain in the overall group, although it did appear to lessen pain among those with moderate-to-severe OA of the knee. The study has raised questions for further research. Researchers are now studying whether the glucosamine chondroitin combination may help people with more severe OA.

A second phase in 2008 looked at participants who continued with the study for another 28 months. They were tested to see whether glucosamine or chondroitin (together or alone) slowed the loss of cartilage in their knees. They showed no difference in cartilage loss compared with people who took placebo. But all groups, those taking placebo, those taking both supplements, and those taking only one supplement, lost less cartilage than expected. Other studies show that people with OA who took glucosamine (1,500 mg once a day) experienced greater improvement in their condition compared to people who took 100 mg of acetaminophen (Tylenol) 3 times a day.

Most studies show that glucosamine needs to be taken for 2 to 4 months before it is effective, although you may experience improvements sooner. Glucosamine and chondroitin can be used along with NSAIDs to treat OA.

## Inflammatory bowel disease (IBD)

Crohn disease and ulcerative colitis are two inflammatory bowel diseases (IBDs) marked by chronic, frequent, bloody diarrhea. Preliminary evidence suggests that N-acetyl glucosamine oral supplements or enemas may help improve symptoms of IBD in children who have not improved with standard medical treatment. However, the study was small and lacked a control group. So it is impossible to say whether glucosamine really worked. More research is needed.

## Cancer

Preliminary evidence suggests that glucosamine inhibits cancer cell growth. In one study, use of glucosamine and chondroitin was associated with a reduced risk of colorectal cancer after 5 years of follow up. More research is needed.

## Dietary Sources

There are no major food sources of glucosamine, so you must get it from supplements. Most supplements are made from chitin, the hard outer shells of shrimp, lobsters, and crabs. Other forms of glucosamine are available for people who are allergic to shellfish.

## Available Forms

Glucosamine is available in oral supplements as glucosamine sulfate, glucosamine hydrochloride, and n-acetyl glucosamine. These products may come in tablet, capsule, and powder forms. It is often combined with chondroitin and sometimes manganese as well. Manganese is a trace mineral necessary for normal bone health. The total amount of manganese from foods and supplements should not exceed 11 mg per day. But several combination supplements for arthritis (containing glucosamine, chondroitin, and manganese) have more than that. Read labels carefully, and consider choosing a supplement without manganese.

Glucosamine hydrochloride may be better absorbed by the body.

Glucosamine is available as an injectable form that your doctor can insert directly into a joint. N-acetyl glucosamine is also available as an enema.

## How to Take It

****Pediatric****

Glucosamine is not recommended for children. It is mainly used to treat OA (a condition that affects adults), and its safety for children has not been studied.

****Adults****

You may need to take supplements on a long-term basis to reduce the pain and inflammation of OA. Talk with your doctor.

## Precautions

Because of the potential for side effects and interactions with medications, you should take dietary supplements only under the supervision of a knowledgeable health care provider.

Studies suggest that glucosamine is safe and causes only minor side effects, such as stomach upset, heartburn, indigestion, gas, bloating, nausea, and diarrhea. If these occur, try taking glucosamine with food. People with peptic ulcers should take glucosamine sulfate with food.

Glucosamine sulfate may contain high amounts of sodium or potassium. People on a restricted diet or who take potassium-sparing diuretics should carefully check the label before taking glucosamine supplements.

People with diabetes should have their blood sugar checked regularly. Glucosamine may cause insulin to work less effectively. Animal studies show an association between glucosamine levels and insulin resistance.

Some glucosamine supplements are made from shellfish. So people with shellfish allergies should check with a doctor before taking glucosamine supplements.

Pregnant and breastfeeding women should not take glucosamine, since it has not been studied for safety in these groups.

Glucosamine may raise blood pressure and cholesterol levels. See your doctor regularly to have these levels checked while you are taking glucosamine.

There is some concern that glucosamine may increase exacerbations in some people with asthma.

## Possible Interactions

If you are being treated with any of the following medications, you should not use glucosamine or make any adjustments to your medications without first talking to your doctor.

****Warfarin (Coumadin):**** Glucosamine may increase the blood-thinning effect of Warfarin (coumadin) and may increase the risk of bruising or bleeding, which can be serious. Speak with your physician.

****Nonsteroidal anti-inflammatory drugs (NSAIDs):**** If you take NSAIDs to relieve the pain of OA, taking glucosamine may reduce the dose of NSAIDs you need to take. Since NSAIDs can cause stomach bleeding, reducing the dose can be helpful. Talk to your doctor before taking glucosamine, since it can take several months before you experience any improvements.

****Blood sugar-lowering medications or insulin:**** Glucosamine may change the dose needed for blood sugar-lowering medications and insulin. If you take these medications for diabetes, talk to your doctor before taking glucosamine.

****Cancer medications such as Doxorubicin, Etoposide, and Teniposide:**** Glucosamine may negatively interact with these drugs. There is some concern that glucosamine may increase cell growth, which is the opposite of what these treatments are designed to do.

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1. What does the drug glucosamine do?

What is this medication? GLUCOSAMINE (gloo KOH suh meen) may support joint health. It could slow the breakdown of cartilage in the joints, which may reduce pain and swelling. The FDA has not evaluated this supplement for any medical use.

# **Glucosamine Capsules or Tablets**

Glucosamine is a dietary supplement. Some claim it keeps your joints healthy. This medication isn’t approved by the FDA for medical use. You can take this capsule or tablet by mouth with a glass of water as directed.

### **What is this medication?**

GLUCOSAMINE (gloo KOH suh meen) may support joint health. It could slow the breakdown of cartilage in the joints, which may reduce pain and swelling. The FDA has not evaluated this supplement for any medical use. It may contain ingredients not listed. Discuss all supplements you are taking with your care team. They can provide you with important safety information.

This medicine may be used for other purposes; ask your health care provider or pharmacist if you have questions.

COMMON BRAND NAME(S): Genicin, OptiFlex-G

### **What should I tell my care team before I take this medication?**

They need to know if you have any of these conditions:

* Diabetes
* Kidney disease
* Liver disease
* Stomach or intestinal problems
* An unusual or allergic reaction to glucosamine, other herbs, plants, supplements, foods, dyes, or preservatives
* Pregnant or trying to get pregnant
* Breast-feeding

### **How should I use this medication?**

Take this supplement by mouth with a glass of water. Follow the directions on the package labeling, or take as directed by your care team. Take your doses at regular intervals. If this supplement upsets your stomach, take it with food. Do not take this supplement more often than directed.

Contact your care team about the use of this supplement in children. Special care may be needed.

Overdosage: If you think you have taken too much of this medicine contact a poison control center or emergency room at once.

NOTE: This medicine is only for you. Do not share this medicine with others.

### **What if I miss a dose?**

If you miss a dose, take it as soon as you can. If it is almost time for your next dose, take only that dose. Do not take double or extra doses.

### **What may interact with this medication?**

* Warfarin

This list may not describe all possible interactions. Give your health care provider a list of all the medicines, herbs, non-prescription drugs, or dietary supplements you use. Also tell them if you smoke, drink alcohol, or use illegal drugs. Some items may interact with your medicine.

### **What should I watch for while using this medication?**

See your care team if your symptoms do not get better or if they get worse.

If you are scheduled for any medical or dental procedure, tell your care team that you are taking this supplement. You may need to stop taking this supplement before the procedure.

Herbal or dietary supplements are not regulated like medications. Rigid quality control standards are not required for dietary supplements. The purity and strength of these products can vary. The safety and effect of this dietary supplement for a certain disease or illness is not well known. This product is not intended to diagnose, treat, cure or prevent any disease.

The Food and Drug Administration suggests the following to help consumers protect themselves:

* Always read product labels and follow directions.
* Natural does not mean a product is safe for humans to take.
* Look for products that include USP after the ingredient name. This means that the manufacturer followed the standards of the US Pharmacopoeia.
* Supplements made or sold by a nationally known food or drug company are more likely to be made under tight controls. You can write to the company for more information about how the product was made.

### **What side effects may I notice from receiving this medication?**

Side effects that you should report to your care team as soon as possible:

* Allergic reactions—skin rash, itching, hives, swelling of the face, lips, tongue, or throat

Side effects that usually do not require medical attention (report to your care team if they continue or are bothersome):

* Constipation
* Diarrhea
* Nausea
* Upset stomach

This list may not describe all possible side effects. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

### **Where should I keep my medication?**

Keep out of the reach of children and pets.

Store at room temperature or as directed on the package label. Protect from moisture. Throw away any unused supplement after the expiration date.

NOTE: This sheet is a summary. It may not cover all possible information. If you have questions about this medicine, talk to your doctor, pharmacist, or health care provider.

1. Why should people over 60 not take glucosamine?

Glucosamine may also increase glaucoma risk. Therefore, it shouldn't be taken by those at risk of developing glaucoma, including those with a family history of glaucoma, people ages 60 or older, and those who have diabetes, heart disease, or high blood pressure ( 31 ).2021年12月8日