

# All About Calcium Supplements

## Why is calcium important?

Calcium is a nutrient that is essential for strong bones. Ninety-nine percent of your body’s calcium is stored in your bones and teeth. The other one percent of your body’s calcium is found in blood. Blood calcium is necessary to support your body’s critical functions such as controlling your blood pressure and maintaining your heartbeat.

The calcium in your bones makes up your bone bank. Throughout your lifetime, the calcium from the foods you eat is “deposited” in and “withdrawn” from your bone bank, depending on your needs. When your calcium intake is too low to keep your blood calcium normal, your body will “withdraw” the calcium it needs from your bones. Over time, if more calcium is taken out of your bones than is put in, the result may be thin, weak bones that may break more easily.

## How do I know if I am getting enough calcium in my diet?

It is important to know the amount of calcium you need each day. You will find your recommended daily calcium intake on the chart below, listed according to your age and gender.

If this is your age	Then you need this much calcium each day (mg = milligrams)
Birth to 12 months	Supplied by formula or breast milk
1 – 3	700 mg*
4 – 8	1000 mg*
9 – 18	1300 mg*
Men 19 – 70 Women 19 – 50	1000 mg*
Women 51 – 70	1200 mg*

\*Recommended Dietary Allowances, Institute of Medicine, 2010

The preferred way to get calcium is from the food you eat. Visit the NYSOPEP website ([www.NYSOPEP.org](http://www.NYSOPEP.org)) to help you find out if you are consuming the amount of calcium you need in the foods you eat in a usual day.

## If I am not getting enough calcium, what should I do?

- Most people can easily get at least half of the calcium they need from food.
- If your usual calcium intake is too low, first try to eat more calcium-rich foods each day. There are many calcium-rich foods to help you get the recommended calcium from diet alone.
- If you are unable to change your diet to get the recommended amount of calcium each day, speak to your health care provider about taking a calcium supplement.
- If you need a supplement, it is important to select one that contains the proper amount of calcium. Your recommended daily calcium intake minus the estimated daily calcium in your diet will determine how much calcium you need to take from a supplement.

How to Find Out if You Need a Calcium Supplement	
Recommended Daily Calcium Intake (mg)	
Minus (-)	Estimated Calcium in Your Diet (mg)
Equals (=)	Calcium Needed From Supplement (mg)

## Is more calcium better?

Some health care providers may suggest slightly more calcium for people with certain medical conditions that interfere with the body's ability to use calcium efficiently. It is important to speak to your health care provider about your calcium requirements and not to consume too much calcium on a regular basis. Chronic high calcium intakes, particularly from calcium supplements, may be harmful.

It is also important not to consume too much calcium at one time. For the most efficient calcium absorption, it is best to consume calcium (from food and/or supplements) in amounts of 600mg or less at one time. Your body uses calcium best when it is spread out through the day. Try including a calcium-rich food at each meal or snack.

## How do I choose a calcium supplement?

- Calcium supplements may contain different calcium compounds such as calcium acetate, calcium carbonate, calcium citrate, calcium citrate malate, calcium gluconate, calcium lactate, calcium lactogluconate, tricalcium phosphate and others.
- Different calcium compounds have similar bioavailability (the amount of calcium that the body can use) when supplements are taken with food. The presence of food in the stomach causes the release of acid that is necessary to break down most calcium supplements. When calcium is taken with food, it slows down the movement of calcium in the intestines allowing more time for calcium to be absorbed. Therefore, it is best to take calcium supplements with food.
- Calcium citrate is an exception to the rule: it can be taken with or without food. It is the one calcium compound that does not require acid to break it down. If you take acid-blocking medications (H2 blockers or proton pump inhibitors that are sold over-the-counter or by prescription) and cannot get enough calcium in the foods you eat, calcium citrate is the calcium compound of choice.
- In selecting the right supplement for you, it is important to consider how you intend to take the supplement. Calcium supplements are available as liquid, powder, chewable or tablets.
- Taste may also be a consideration; since it may determine if you will regularly take calcium.

## What do the symbols on the labels of calcium supplements mean?

There are symbols to look for on the labels of calcium supplements that indicate that an independent laboratory has tested the product. The symbols pictured below from left to right include the Consumer Labs International insignia, the Natural Products Association symbol, the NSF (NSF International) mark, and the USP (United States Pharmacopeia) verified mark.



When one of the above symbols is found on a calcium supplement, it means the calcium supplement was properly manufactured, contains the ingredients listed on the label, breaks down and is released into the body in a specified amount of time, and does not contain harmful levels of lead or specified contaminants. The symbols do not guarantee that a product is safe or effective. It is important to understand that independent laboratory testing is voluntary and costly so many acceptable products may not display a symbol.

Calcium must dissolve in your stomach before it can be absorbed in your intestines and used by your body. If your supplement is not marked with a symbol that indicates that it has been quality tested, you can test it yourself to find out if it will dissolve. Simply put the supplement into a glass of lemon juice. It is very similar to stomach acid. Stir the solution well then occasionally repeat over a 30-minute period. If the calcium supplement breaks down within 30 minutes, it should do so in your stomach, too. If the supplement does not completely dissolve, choose another calcium supplement. Be sure to discard the calcium/lemon juice solution after the test.

## How do I read the label of a calcium supplement?

Reading the label of a calcium supplement is as simple as 1, 2, 3:

1. Check the serving size (the number of tablets per serving)
2. Read the calcium (mg) per serving. The label may refer to calcium as elemental calcium. This distinguishes the weight (mg) of calcium alone from the weight (mg) of the calcium compound on the ingredient list (such as calcium carbonate, calcium citrate, tricalcium phosphate, or others)
3. Determine the calcium (mg) per tablet

## Do I need to be concerned about lead in my calcium supplement?

One of the above symbols on the label of a calcium supplement means that it does not contain lead or other metals. However, it seems that lead in calcium supplements is less of a concern than some people believe. Calcium supplements, in the dosage prescribed for prevention and treatment of osteoporosis, contain much less than the safe level of lead. A further safeguard is that lead in calcium supplements is usually not absorbed well because calcium blocks lead absorption.

## Do I need vitamin D in combination with my calcium supplement?

It is important to get the vitamin D that you need each day. Getting the recommended amount of vitamin D helps your body absorb calcium and helps strengthen muscles, too! There are only a few good natural sources of vitamin D including fatty fish such as catfish, eel, mackerel, salmon, sardines, and tuna. Small amounts of vitamin D are added to all milk and to some types of nondairy beverages and other foods. Check the food labels of almond, coconut, rice, and soy beverages as well as juices, yogurt, cheese, and nutrition bars to find out if vitamin D is added. Most people need a vitamin D supplement to get enough vitamin D each day. Vitamin D is available in supplemental form in multivitamins, in combination with calcium in many calcium supplements, and alone in vitamin D supplements. Vitamin D is fat-soluble and can be stored by the body. It does not need to be taken in combination with calcium as long as you get the recommended amount of vitamin D each day. It is important to speak to your health care provider about how you can get the vitamin D you need to promote strong bones.

## Do I need magnesium in combination with my calcium supplement?

Most healthy people do not need magnesium supplements. Magnesium is found in many foods but especially in green leafy vegetables, potatoes, tomato products, seafood, peas, beans, nuts, seeds, bran and whole-wheat products. However, certain individuals may be at risk for magnesium deficiency. At-risk individuals include those with gastrointestinal diseases that cause poor absorption or increased losses of magnesium, people with diabetes, frail elderly individuals eating poor diets, alcoholics, individuals receiving chemotherapy, and people who take high-dose diuretics (water pills) that cause magnesium loss. Your health care provider will prescribe a magnesium supplement if it is necessary or if you have a condition that causes magnesium deficiency.

## Do I need additional vitamins or minerals with my calcium supplement?

For most healthy individuals, additional vitamins or minerals (such as boron, vitamin K, selenium or others) in the form of supplements are not needed for strong bones. The best way to get these nutrients is by following the 2010 Dietary Guidelines for Americans to help you eat a varied, nutrient-rich diet including plenty of fruits and vegetables.

## How do I take my calcium supplement?

It is important to read the labels of calcium supplements and follow the directions for use. Chew chewables or swallow tablets as directed along with a full glass of water. For best absorption, most calcium supplements should be taken with food. Calcium citrate is an exception; it may be taken with or without food. It is best to spread out the calcium you consume from food and/or supplements throughout the day. In fact, for most efficient absorption, it is recommended to consume 600 mg of calcium or less at one time. If you take more than 600 mg of calcium from supplements each day, the dose should be split to improve calcium absorption.

## **Are there any special considerations if I take an iron supplement?**

For the best absorption of both iron and calcium, it is recommended that you eat foods rich in calcium or take calcium supplements two hours before or after your iron supplement. You should not consume calcium and iron at the same time.

## **Is it a problem to take a calcium supplement with antibiotics?**

Calcium interferes with the body's ability to use certain antibiotics such as tetracycline or ciprofloxin. If your health care provider prescribes an antibiotic that interacts with calcium, it is important for you to take it properly. You should not take calcium supplements (and not eat calcium-rich foods) at the same time as taking certain antibiotics. Your antibiotic will work best if you take your calcium supplement (or eat calcium-rich foods) at the right time. It is always important to talk to your pharmacist about the proper way to take your medication.

## **Can calcium supplements cause constipation?**

Some people who take calcium supplements complain about constipation but it can usually be prevented. To prevent constipation eat more fiber in your diet (from fruits, vegetables, and whole-grain products), drink six to eight of water each day, and be physically active. If these simple steps are not helpful enough, take a closer look at your diet to try to get more calcium from foods and less from supplements. If you need to take calcium supplements, read the label to find out the amount of calcium in each dose. For example, calcium carbonate has the highest amount of calcium per dose. Calcium citrate has less calcium per dose and calcium gluconate is one of the lowest dose options. A low-dose calcium supplement may be better tolerated than a high-dose supplement.