
WHAT YOU SHOULD KNOW ABOUT CALCIUM

Calcium is essential for life, yet the majority of Americans do not consume adequate amounts of calcium on a daily basis. Calcium plays an important role in building stronger, denser bones in early life and slowing the rate of bone loss in later life. In addition to building and maintaining a healthy skeleton, calcium is necessary for many other body functions, including regulation of the heartbeat, conduction of nerve impulses, stimulation of hormone secretions and clotting of blood.

Calcium is a mineral found in many foods. Because the human body cannot produce calcium, an adequate calcium intake is important. Even after reaching full skeletal growth, calcium is needed to replace the calcium that the body loses daily through shed skin, nails, hair, and sweat, as well as through urine and feces. This lost calcium must be obtained daily through our food sources. When the diet does not contain enough calcium for our body's needs, calcium is taken from the bones, which are storage areas for calcium.

Sources of Calcium

According to the experts, food remains the best source of calcium. Currently, there are calcium-fortified juices, cereals and breads, as well as calcium-rich, lactose-free products and lactase enzyme pills for those unable to consume dairy products.

The National Osteoporosis Foundation recommends a daily calcium intake of at least 1,200 mg for adult men and women. Calcium-fortified foods and calcium supplements are helpful for people who are unable to get enough calcium in their diets. The amount needed from a supplement depends on how much calcium is consumed from food sources.

However, an excess of calcium, as well as a deficiency, can be harmful to the body. According to most experts, the safe upper limit for a total daily calcium intake from all sources is between 2,000 - 2,500 mg. Too high of a calcium intake may increase the likelihood of developing kidney stones in people who are prone to them.

Calcium Supplements

Calcium exists in nature only in combination with other substances called compounds. Several different calcium compounds are used in supplements, including calcium carbonate, calcium phosphate and calcium citrate. These compounds contain different amounts of elemental calcium, which is the actual amount of calcium in the supplement. It is important to read the product label carefully to determine how much elemental calcium is in the supplement and how many doses or pills to take. When reading the label, pay close attention to the "amount per serving" and "serving size."

Calcium supplements are available without a prescription in a wide range of preparations and strengths, which can make selecting one a confusing experience. Many people ask which calcium supplement they should take. The best supplement is the one that meets an individual's needs based on tolerance, convenience, cost and availability.

Purity

Choose calcium supplements that are known brand names with proven reliability. Look for labels that state "purified" or have the USP (United States Pharmacopeia) symbol. If the product has a "USP" on the label, this means that it has met voluntary quality standards of purity and dissolution.

established by the USP. These products are less likely to contain harmful contaminants and are more likely to disintegrate in the stomach.

Since applying for the USP symbol is voluntary, many fine products may not display this symbol. Avoid calcium from unrefined oyster shell, bone meal or dolomite without the USP label, as these calcium sources may contain lead or other toxic metals.

Absorbability

Most brand name calcium products are absorbed easily in the body. A calcium supplement needs to dissolve in the stomach for the calcium to be absorbed. To determine how well a tablet or capsule dissolves, place one in a small amount of warm water or vinegar for 30 minutes, stirring occasionally. If it does not dissolve within this time, it probably will not dissolve in the stomach. Chewable and liquid calcium supplements dissolve well because they are broken down before they enter the stomach.

Calcium, whether from diet or supplements, is absorbed best by the body when it is taken several times a day in amounts of 500 – 600 mg or less, but taking it all at once is better than not taking it at all. Try consuming your calcium-rich foods and/or supplements in smaller doses throughout the day, preferably with a meal. Because the body requires calcium 24 hours a day, some experts suggest consuming a calcium-rich food such as yogurt or a calcium supplement at bedtime to provide a calcium source during the night.

Supplements of calcium carbonate are absorbed best when taken with food. Supplements of calcium citrate absorb well taken at any time.

Substances Interfering with Calcium Absorption

There are several substances that can interfere with the body's ability to use calcium. Some of the most common offenders are foods high in oxalates, phytates, protein and sodium. Foods high in oxalates include spinach, rhubarb, beet greens, and almonds. The calcium in spinach or rhubarb is almost completely unavailable.

Legumes, such as pinto beans, navy beans, and peas, are high in phytates. The calcium in legumes is only half as available as the calcium in milk. You can reduce the phytate level in beans or legumes by soaking them in water for several hours, discarding the water, and then cooking them in fresh water. Wheat bran also is high in phytates. The only fiber-rich food that appears to reduce calcium absorption is wheat bran. The fiber in fruits, vegetables, and common cereals does not significantly interfere with calcium absorption. To derive the maximum benefit from your calcium-rich foods, do not eat them at the same time as foods high in oxalates and phytates.

While an adequate protein intake is important for healthy bones, a diet high in animal protein or sodium, and to a lesser extent caffeine, can increase calcium loss through the kidneys. In fact, an individual's daily calcium requirement increases in direct proportion to the amount of protein and sodium in the diet. If you regularly drink coffee, tea or colas, you can offset the calcium loss due to caffeine with a glass of milk or other calcium source, or by adding milk to your coffee or tea.

Tolerance

While calcium supplements generally are a satisfactory option for many people, certain preparations may cause side effects, such as gas or constipation. If increased fluids and fiber intake do not solve the problem, another form of calcium should be tried. It may require trial and error, but fortunately there are many brands and types of supplements available. When starting a new calcium supplement, it may be better tolerated by starting with a lower amount, such as 500 – 600 mg a day for a week. Then, gradually add more calcium.

Calcium Interactions

It is important to talk with a physician or pharmacist about possible interactions between prescription or over-the-counter medications and calcium supplements. For example, calcium supplements may reduce the absorption of the antibiotic tetracycline. Because calcium also interferes with iron absorption, a calcium supplement should not be taken at the same time as an iron

supplement. The exception is when the iron supplement is taken with vitamin C or calcium citrate. Any medication taken on an empty stomach should not be taken with calcium supplements.

Combination Products

Calcium supplements are available in a dazzling array of combinations with vitamins and other minerals. Although vitamin D is necessary for the absorption of calcium, it does not need to be taken with a calcium supplement. Because sunlight and some foods are sources for vitamin D, and it is available as a separate supplement and in some multivitamins, it is not necessary for it to be in the calcium supplement.

Minerals such as magnesium and phosphorus also are important for bone health, but usually are obtained through food or in multivitamins. Most experts recommend that nutrients come from a balanced diet, with multivitamins used to supplement dietary deficiencies.

Summary

Most published studies show that low calcium intake is associated with low bone mass, bone loss and higher fracture rates. Adequate calcium intake helps ensure that calcium deficiency is not contributing to a weakening of the skeleton. Sufficient calcium, however, is only one of the steps necessary for bone health. A high calcium intake will not protect a person against bone loss caused by estrogen deficiency, physical inactivity, smoking, alcohol abuse, various medical disorders or medications known to cause bone loss.

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