

7020 Calcium

An Essential Element for Bone Health



Calcium: An essential element for life

Calcium is crucial to maintain life. Just about every cell in the body, including those in the heart, nerves and muscles, relies on calcium to function properly. Bones require calcium to maintain their strength.

In the body, calcium is found in three places:

- * in the skeleton and teeth,
- * in the cells, and
- * in the blood.

Because calcium is so important, the body has a carefully regulated system to ensure that a good supply is always - and immediately - available. The body does this in three ways:

- * It absorbs calcium directly from the food we eat.
- * It takes calcium from our bones if there is not enough available. When this happens, the bones become less dense and more fragile.
- * It slows down the amount of calcium that leaves the body in the urine by returning some to the blood stream where it remains available to organs and cells.

The main goal of good calcium nutrition is to maintain an adequate supply so that our bodies do not have to dip into our only calcium reservoir - our bones.

The role of calcium in building stronger bones

In childhood, calcium is necessary to grow a healthy skeleton to support a growing body. By age 20 in men and age 16 in women, bones typically stop growing in length and we are almost at our peak bone mass. The density of our bones at this point depends a lot upon our calcium intake as children and teenagers. The greater this peak bone mass, the less likely our bones are to become porous and fragile later in life.

Bone is living tissue, constantly renewing itself. Although bone is strong and relatively flexible, everyday wear and tear causes tiny structural defects, much like those that occur in the foundations of a building over time. In our bodies, there are two groups of specialized cells that perform the work of a "maintenance crew." Osteoclasts excavate any areas of crumbling or weakened bone and then osteoblasts fill in the crevices with material that calcifies to form new bone. This two-part process is called bone remodeling, and is completed every three to four months in a healthy young adult.

As we age, the two groups of cells that form the maintenance crew become less efficient in working together - the osteoclasts remove old bone faster than the osteoblasts are able to rebuild it. In addition, calcium, like many nutrients, is absorbed less effectively as we age. In people who have relatively healthy bones, adequate calcium intake can help the remodeling process stay balanced. Studies of older adults show that adequate calcium intake can slow bone loss and lower the risk of fracture.



How Much Calcium Do We Need?

Age	Daily calcium requirement
4 to 8	800 mg
9 to 18	1300 mg
19 to 50	1000 mg
50+	1500 mg
pregnant or lactating women 18+	1000 mg

How to maximize your calcium intake through diet...

Make sure that you are getting an adequate amount of calcium every day

Consult a reliable food chart - like the one on page 3 - which shows the calcium content of specific foods. Calculate your daily calcium intake and see if you are achieving the levels recommended by the Osteoporosis Society in the chart above.

Eat foods that contain calcium that is easily absorbed.

Dairy products such as milk, cheese and yogurt are excellent sources of calcium because they contain high amounts of calcium that are easily absorbed by the body. Skim milk products provide as much calcium as whole milk with the added advantage of less fat and cholesterol. Some calcium-fortified soy beverages and orange juices may contain as much calcium as milk (check the labels). Vegetables also provide calcium, as do fish products containing bones (canned salmon and sardines) and meat alternatives such as lentils and beans.

Pay attention to foods that cause calcium loss

There is evidence to suggest that calcium loss through the urine is increased by the consumption of excess salt and caffeine.

Salt (sodium): Over 90% of sodium comes from food rather than from table salt. Therefore, it is advisable to keep the intake of salt and salty foods to a minimum.

Caffeine: Most experts agree that two to three cups of coffee, tea or cola a day is probably not detrimental if calcium intake is adequate. If you consume more than four cups a day, have at least one glass of milk for every cup of caffeine-containing beverage (or make your coffee a café latté).

If you eat few or no dairy products, monitor your calcium intake carefully.

Some people are unable or choose not to eat dairy foods. If you are one of these individuals, we strongly recommend that you educate yourself on the calcium content of other foods. Monitor your calcium intake very carefully (possibly with the help of a dietitian) and consider a calcium supplement to make sure you meet your daily requirement.