

Calcium and Strong Bones

Protecting Your Bones

The bone-thinning condition called osteoporosis can lead to small and not-so-small fractures. Although many people think of calcium in the diet as good protection for their bones, this is not at all the whole story. In fact, in a 12-year Harvard study of 78,000 women, those who drank milk three times a day actually broke *more* bones than women who rarely drank milk. Similarly, a 1994 study of women in Sydney, Australia, showed that higher dairy product consumption was associated with *increased* fracture risk. Those with the highest dairy product consumption had approximately *double* the risk of hip fracture compared to those with the lowest consumption. To protect your bones you do need calcium in your diet, but you also need to keep calcium into your bones.

How to Get Calcium into Your Bones

1. Get calcium from greens, beans, or fortified foods.

The most healthful calcium sources are green leafy vegetables and legumes, or "greens and beans" for short. Broccoli, Brussels sprouts, collards, kale, mustard greens, Swiss chard, and other greens are loaded with highly absorbable calcium and a host of other healthful nutrients.

Beans are humble foods, and you might not know that they are loaded with calcium. There is more than 100 milligrams of calcium in a plate of baked beans. If you prefer chickpeas, tofu, or other bean or bean products, you will find plenty of calcium there, as well. These foods also contain magnesium, which your body uses along with calcium to build bones.

If you are looking for a very concentrated calcium source, calcium-fortified orange or apple juices contain 300 milligrams or more of calcium per cup in a highly absorbable form. Many people prefer calcium supplements, which are now widely available.

Dairy products do contain calcium, but it is accompanied by calcium-leaching animal proteins, lactose sugar, animal growth factors, occasional drugs and contaminants, and a substantial amount of artery clogging saturated fat and cholesterol.

2. Exercise, so calcium has somewhere to go.

Exercise is important for many reasons, including keeping bones strong. Active people tend to keep calcium in their bones, while sedentary people lose calcium.

3. Get vitamin D from the sun, or supplements if you need them.

Vitamin D controls your body's use of calcium. About 15 minutes of sunlight on your skin each day normally produces all the vitamin D you need. If you get little or no sun exposure, you can get vitamin D from a vitamin supplement. The Recommended Dietary Allowance is 600 IU (5 micrograms) per day. Vitamin D is often added to dairy substitutes such as soy and almond milk.

How to Keep It There

It's not enough to get calcium into your bones. What is really critical is keeping it there. Here's how:

1. Reduce calcium losses by avoiding excess salt and cola drinks.

Calcium in bones tends to dissolve into the bloodstream, then pass through the kidneys into the urine. Sodium (salt) in the foods you eat can greatly increase calcium loss through the kidneys. If you reduce your sodium intake to one to two grams per day, you will hold onto calcium better. To do that, avoid salty snack foods and canned goods with added sodium, and keep salt use low on the stove and at the table. Cola type beverages have phosphoric acid in them which can reduce calcium the calcium in the body.

2. Get your protein from plants, not animal products.

Animal protein - in fish, poultry, red meat, eggs, and dairy products - tends to leach calcium from the bones and encourages its passage into the urine. Plant protein - in beans, grains, and vegetables - do not have this effect allowing you to hold on to the calcium in your diet.

3. Don't smoke.

Smokers lose calcium, too. A study of identical twins showed that, if one twin had been a long-term smoker and the other had not, the smoker had more than a 40 percent higher risk of a fracture.

American recommendations for calcium intake are high, partly because the meat, salt, tobacco, and physical inactivity of American life leads to overly rapid and unnatural loss of calcium through the kidneys. By controlling these basic factors, you can have an enormous influence on whether calcium stays in your bones or drains out of your body.

The Dairy Myth

American Journal of Clinical Nutrition concludes...

"the body of scientific evidence appears inadequate to support a recommendation for daily intake of dairy foods to promote bone health in the general U.S. population."

Source: Roland Weinsier and Carlos Krumbieck. 2000. Dairy foods and bone health: examination of the evidence. *American Journal of Clinical Nutrition* 72(3):681-689

"Available evidence does not support nutrition guidelines focused specifically on increasing milk or other dairy product intake for promoting child and adolescent bone mineralization."

Amy Joy Lanou, Susan Berkow & Neal Barnard. 2005. Calcium, dairy products and bone health in children and young adults: A reevaluation of the evidence. *Pediatrics* 115(3):736-743

Plant foods are a rich source of calcium which comes in a form even more absorbable than dairy.



Calcium Content of Various Foods

Food	Calcium (mg/100 Cal serving)	Absorption Rate
Bok Choy	870mg	53%
Collard Greens	609mg	52%
Orange Juice (calc fortified)	320mg	52%
Tofu (set with calcium)	287mg	31%
Kale	270mg	49%
Broccoli	215mg	61%
Cow's milk (for comparison)	188mg	32%
Sesame Seeds	170mg	21%
Cabbage	160mg	65%
White Beans	72mg	22%
Tempeh	55mg	37%