



# Calcium and Vitamin D: Important at Every Age

The foods we eat contain a variety of vitamins, minerals, and other important nutrients that help keep our bodies healthy. Two nutrients in particular, calcium and vitamin D, are needed for strong bones.

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## The Role of Calcium

Calcium is needed for our heart, muscles, and nerves to function properly and for blood to clot. Inadequate calcium significantly contributes to the development of osteoporosis. Many published studies show that low calcium intake throughout life is associated with low bone mass and high fracture rates. National nutrition surveys have shown that most people are not getting the calcium they need to grow and maintain healthy bones. To find out how much calcium you need, see the Recommended Calcium Intakes chart, below.

### Recommended Calcium Intakes

<u>Age</u>	<u>Amount of Calcium</u>
<b>Infants</b>	
Birth – 6 months	210 mg
6 months – 1 year	270 mg
<b>Children/Young Adults</b>	
1 – 3 years	500 mg
4 – 8 years	800 mg
9 – 18 years	1,300 mg
<b>Adult Women &amp; Men</b>	
19 – 50 years	1,000 mg
50 +	1,200 mg
<b>Pregnant or Lactating</b>	
18 years or younger	1,300 mg
19 – 50 years	1,000 mg

*Source: National Academy of Sciences, 1997.*

To learn how easily you can include more calcium in your diet without adding much fat, see the Selected Calcium-Rich Foods list, below.

### Selected Calcium-Rich Foods

Food Item	Serving Size	Calcium (mg)	Fat (g)	Calories
<b>Milk</b>				
Whole	8 oz	290	8.9	156
1% milk	8 oz	300	2.6	102
2% milk	8 oz	297	4.7	121
Skim milk	8 oz	302	0.4	86
<b>Yogurt</b>				
Plain fat-free (with added milk solids)	8 oz	487	0.4	136
Plain low-fat (with added milk solids)	8 oz	447	3.7	155
Fruit low-fat	8 oz	338	2.8	243
Frozen, vanilla, soft serve	½ cup	103	4.0	114
<b>Cheese</b>				
American cheese	1 oz	174	8.9	106
Cheddar cheese	1 oz	204	9.4	114
Cottage cheese, 1% low-fat	1 cup	138	2.3	164
Mozzarella cheese, part skim	1 oz	183	4.5	72
Muenster cheese	1 oz	203	8.5	104
Parmesan cheese, grated	1 tbsp	69	1.5	23
Ricotta cheese, part skim	½ cup	337	9.8	171
Ricotta cheese, whole milk	½ cup	257	16.1	216
<b>Ice Cream, Vanilla</b>				
Low-fat	½ cup	91.7	2.8	91.7
High-fat	½ cup	86.6	12	178
<b>Fish and Shellfish</b>				
Sardines, canned in oil, drained, including bones	3.75 oz	351	10.5	191
Salmon, pink, canned, including bones	3 oz	181	5.1	118
Shrimp, canned, drained	3 oz	50	1.7	102
<b>Vegetables</b>				
Bok Choy, raw (Chinese cabbage)	1 cup	74	0	9
Broccoli, cooked, drained, from raw	1 cup	71.6	0.6	23.6
Broccoli, cooked, drained, from frozen	1 cup	94	0.2	50
Soybeans, mature, boiled	1 cup	261	12	254
Collards, cooked, drained, from raw	1 cup	226	0.6	49
Turnip greens, cooked, drained, from raw (leaves and stems)	1 cup	197	0.3	29

## Selected Calcium-Rich Foods

Food Item	Serving Size	Calcium (mg)	Fat (g)	Calories
Tofu	½ cup	204 *	5.6	97
Orange (navel)	1 whole	56	0.1	65
Orange Juice, fortified with calcium	8 oz	300	0.1	100
Dried figs	10	270	2.2	477
Almonds (dry roasted)	1 oz	75	15	169
Sesame seeds, kernels, toasted	1 oz	37	13.6	161
Sunflower seeds, dried	1 oz	33	14.1	162

\* The calcium content of tofu may vary depending on processing methods. Tofu processed with calcium salts can have as much as 300 mg (milligrams) for every 4 oz. Often, the label or the manufacturer can provide more specific information.

Note: You may also increase the calcium in foods by following these suggestions:

1. Add nonfat powdered milk to all soups, casseroles, and drinks.
2. Buy juices, cereals, and breads that are fortified with calcium.
3. Replace whole milk and cream with skim and low-fat milk in recipes.
4. Replace sour cream with yogurt in recipes.
5. Some bottled waters contain calcium, so check the labels for more information.

*Source: USDA Nutrient Data Laboratory, 2000.*

### Calcium Culprits

While a balanced diet aids calcium absorption, high levels of protein and sodium (salt) in the diet are thought to increase calcium excretion through the kidneys. Excessive amounts of these substances should be avoided, especially in those whose calcium intake is low.

Lactose intolerance also can lead to inadequate calcium intake. Those who are lactose intolerant have insufficient amounts of the enzyme lactase, which is needed to break down the lactose found in dairy products. In order to include dairy products in the diet, dairy foods can be taken in small quantities or treated with lactase drops, or lactase can be taken as a pill. There are even some milk products on the market that already have been treated with lactase.

## **Calcium Supplements**

If you have trouble getting enough calcium in your diet, you may need to take a calcium supplement. The amount of calcium you will need from a supplement depends on how much calcium you obtain from food sources. There are several different calcium compounds from which to choose, such as calcium carbonate and calcium citrate, among others. Except in people with gastrointestinal disease, all major forms of calcium supplements are absorbed equally well when taken with food.

Calcium supplements are better absorbed when taken in small doses (500 mg or less) several times throughout the day. In many individuals, calcium supplements are better absorbed when taken with food. It is important to check supplement labels to ensure that the product meets United States Pharmacopeia (USP) standards.

## **Vitamin D**

The body needs vitamin D to absorb calcium. Without enough vitamin D, we can't form enough of the hormone calcitriol (known as the "active vitamin D"). This in turn leads to insufficient calcium absorption from the diet. In this situation, the body must take calcium from its stores in the skeleton, which weakens existing bone and prevents the formation of strong, new bone.

You can get vitamin D in three ways: through the skin, from the diet, and from supplements. Vitamin D is formed naturally by the body after exposure to sunlight. Fifteen minutes in the sun a few times a week without sunscreen is plenty for many people to manufacture and store all of the vitamin D they need. Experts recommend a daily intake of between 400 and 800 International Units (IU) of vitamin D, which also can be obtained from supplements or vitamin D-rich foods such as egg yolks, saltwater fish, liver, and fortified milk. The Institute of Medicine recommends no more than 2,000 IU per day. However, sometimes doctors prescribe higher doses for people who are deficient in vitamin D.

## **A Complete Osteoporosis Program**

Remember, a balanced diet rich in calcium and vitamin D is only one part of an osteoporosis prevention or treatment program. Like exercise, getting enough calcium is a strategy that helps strengthen bones at any age. But these strategies may not be enough to stop bone loss caused by lifestyle, medications, or menopause. It is important to speak to your doctor to determine the need for an osteoporosis medication in addition to diet and exercise.

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### **For Your Information**

For updates and for any questions about any medications you are taking, please contact the U.S. Food and Drug Administration at 1-888-INFO-FDA (1-888-463-6332, a toll-free call) or visit their Web site at [www.fda.gov](http://www.fda.gov).