

## **Calcium & 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.

### **Vitamin D**

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

You can get vitamin D safely in two ways: through the skin and from the diet. Vitamin D is formed naturally in the body after exposure to sunlight. Fifteen minutes in the sun is plenty of time to manufacture and store all of the vitamin D you 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 and liver. Do not take more than 800 IU per day unless prescribed by your doctor since massive doses up to and over 5,000 IU of vitamin D may be harmful.

### **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 many women and young girls consume less than half the amount of calcium recommended to grow and maintain healthy bones. To find out how much calcium you need, see the accompanying *Recommended Calcium Intakes* chart. See the *Selected Calcium-Rich Foods* list to learn how easily you can include more calcium in your diet without adding much fat.

However, calcium alone cannot prevent osteoporosis and is not a substitute for medication that may be needed to curb excessive bone loss.

### **Calcium Culprits**

While a balanced diet aids calcium absorption, high levels of protein and sodium (salt) in the diet also are thought to increase calcium excretion through the kidneys. Excessive amounts of these substances should be avoided, especially in those who have low calcium intake. Lactose intolerance also can lead to inadequate calcium intake. Those who are lactose intolerant have insufficient amounts of the enzyme lactase that 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 pills. There are even some milk products on the market that already have been treated with lactase.

## RECOMMENDED CALCIUM INTAKES\*

<b>Age</b>	<b>Amount of Calcium</b>
<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 and 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

## 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.

It is necessary for the calcium tablet to disintegrate in order to be absorbed by the body. If you are unsure whether a tablet will break down, you can test how well it disintegrates by placing it in six ounces of vinegar or warm water, stirring occasionally for 30 minutes. If the tablet has not almost completely disintegrated in this time, it probably will not do so in your stomach.

All 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.

## A Complete Osteoporosis Program

Remember, a calcium-rich diet 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 approaches 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.

### 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	_ 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	69	1.5	23
Ricotta, part skim	tablespoon	337	9.8	171
Ricotta, whole milk	_ cup	257	16.1	216
	_ cup			
<b>Ice Cream, Vanilla</b>				
Low Fat	_ cup	91.7	2.8	91.7
High Fat	_ 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
<b>Tofu</b>				
	_ 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 per 4 oz. Often, the label or the manufacturer can provide more specific information.

Note: You also may 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 lowfat 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

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