



Vitamin D and Calcium

Vitamin D

Vitamin D is a fat-soluble vitamin that is naturally present in very few foods. It is produced in the body when ultraviolet rays from sunlight strike the skin and trigger vitamin D synthesis. Vitamin D is necessary for calcium absorption in the intestine and is important for bone growth. Together with calcium, vitamin D helps prevent osteoporosis. Due to increased use of sunscreen and less time spent outdoors, the current recommendation is to supplement vitamin D 1000 - 2000 IU/day. If you are taking vitamin D by itself (without calcium), you can take 10,000 IU/week as a single dose. This may be five 2000 IU capsules or two 5000 IU capsules.

Dietary Calcium

Premenopausal women need 1000 mg of calcium and postmenopausal women need 1200 mg of calcium each day. Calcium is best from dietary sources. If calcium intake is not adequate, calcium is taken from the bone or teeth to maintain the blood calcium level and osteoporosis may occur.

Dietary sources of calcium include:

| | | | |
|-----------------------------------|------------------|--------------------------------|------------------|
| Milk/Mild Products (1 cup) | Ca in mg. | Fish (3 oz) | Ca in mg. |
| 2% fat milk | 352 | Sardines, canned with bones | 372 |
| Skim milk (nonfat) | 296 | Salmon, canned with bones | 167 |
| Whole milk | 288 | Oysters | 81 |
| Plain yogurt | 272 | | |
| Low-fat yogurt | 452 | Fruits | |
| Nonfat yogurt | 451 | Dried figs (5 medium) | 135 |
| Ice Cream | 104 | Almonds (10 g) | 165 |
| | | Fruit juice – orange fortified | 300 |
| Cheese | | Vegetables (1/2 cup) | |
| Swiss cheese | 262 | Broccoli | 158 |
| Cheddar | 213 | Collard greens | 145 |
| American | 198 | Dandelion greens | 126 |
| Edam | 208 | Spoon cabbage or bok choy | 126 |
| Gruyere | 287 | | |
| Ricotta ½ cup | 335 | | |

Other food sources of calcium are fortified breads and cereals. High fat dairy products should be avoided. Foods are the best source of usable calcium.

Calcium Supplements

If you are unable to obtain all the necessary calcium from your diet, consider taking a calcium supplement. Do not take more calcium than recommended as it may cause kidney stones or contribute to calcium deposits in the heart. It is important to read the label carefully to determine how much elemental calcium is in the supplement and whether to take the calcium with a meal or on an empty stomach.

For best absorption, it is recommended to consume only 500-600 mg of calcium at one time. Avoid taking calcium supplements at the same time as any medication that needs to be taken on an empty stomach. Don't take calcium at the same time as tetracycline (an antibiotic), iron supplements, thyroid hormones, or corticosteroids, because calcium binds to these substances, interfering with their effectiveness and also its own absorption. Consider calcium citrate supplements over other calcium carbonate supplements if you take proton pump inhibitors (PPIs) such as Prevacid®, Prilosec® and Nexium®. Because these medications block stomach acid, your body may better absorb calcium citrate which does not need stomach acid for absorption.

Calcium carbonate (40% absorption) gives you the largest percentage of usable calcium. Calcium carbonate should be taken with meals or snacks to increase absorption. Calcium citrate (21% absorption) can be taken at any time. It is less likely to cause constipation than calcium carbonate.