



Calcium and Vitamin D

Essential Nutrients that Work Hand-in-Hand

No matter our age, our bodies need calcium and vitamin D. Calcium is essential for maintaining strong bones and teeth, as well as other important functions. However, without enough vitamin D, calcium can't be absorbed by the body. What happens then? The body draws from calcium stored in the bones, which weakens them and can lead to osteoporosis, a condition where bones become fragile, brittle and prone to breaks. Maintaining calcium and vitamin D levels in a healthy range over your lifetime can help prevent the risks of weak bones, teeth and other potential issues.

Calcium: An Essential Mineral

Calcium is the most plentiful, and one of the most important minerals for the body. Most calcium is found in the bones and teeth but nerve cells, tissues and blood also contain it. The functions calcium play may surprise you! Besides building strong bones and teeth, calcium helps with clotting blood so our wounds heal, carrying messages from the brain to other parts of the body, moving muscles, releasing hormones, and maintaining a normal heartbeat.

The amount of calcium your body needs depends upon your age and gender (see chart). You can get it by eating a variety of foods that are rich in calcium, such as milk, yogurt, cheese, dark green leafy vegetables like kale and collard greens, al-

monds, beans, and fish with edible soft bones like canned sardines and salmon. Check product labels since calcium is added to some soy and rice beverages, fruit juices, breakfast cereals and tofu. See the National Osteoporosis Foundation's [guide](#) to calcium-rich foods.

Getting regular exercise and maintaining a healthy weight help to prevent bone loss. Weight-bearing exercise like walking, tennis, dancing and hiking help bones retain their size and strength (density), and perhaps gain density.

Even with eating a healthy diet, many Americans find it difficult to get enough calcium, especially children, adolescent girls and adults age 50 and older. But others have the same challenge, for example, vegans who don't eat animal products, people with bowel or digestive diseases that decrease the ability to absorb calcium, those who don't like dairy products or avoid them because they can't digest the sugar called lactose, as well as those who consume large amounts of protein or sodium, which causes the body to lose extra calcium.

When looking at calcium supplements, look for *elemental calcium* on the label. Elemental calcium is the actual amount of calcium in a supplement that your body absorbs. In addition to elemental calcium, calcium tablets are made with other

How Much Do I Need?

The amount of calcium and vitamin D you need daily depends on your age and gender. For example, adults aged 19-50 need 1,000 mg of calcium, as do men 51-70 years. Women aged 51-70 and all adults 71 years and older need 1,200 mg.

It is recommended that adults aged 19-70 get 600 IU of vitamin D daily. Adults 71 years and older need 800 IU.

For recommendations for other ages, see [here](#) for calcium and [here](#) for vitamin D.

Supplement Tips

Hormones in our body carefully regulate the level of calcium in our blood to keep a steady supply. Calcium supplements are better absorbed when taken in small doses (500 mg or less) throughout the day. Remember that calcium carbonate needs to be taken with food.

Calcium and vitamin D supplements can interact with some prescription and over-the-counter medications. For example, calcium can reduce the absorption of some medicines, and some medicines reduce or increase the amount of calcium excreted. Be sure to discuss your medications and supplements fully with your doctor.

Before deciding how much calcium or vitamin D to take, consider all your sources. How much of each do you get from food (naturally occurring or added)? Multi-vitamin and other supplements? Remember to check serving sizes of elemental calcium (not calcium carbonate or calcium citrate) to determine how many tablets to take to get the intended amount.

Vitamin D requires fat to be absorbed effectively, therefore, take it with food. This does not mean a double cheeseburger is in order, but rather a cup of low-fat yogurt, salad tossed with olive oil or chicken dinner will do.

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ingredients like carbonate and citrate. During digestion, the carbonate or citrate dissolve and the elemental calcium is then absorbed into the blood.

Calcium carbonate contains the highest amount of elemental calcium (40%). Calcium citrate contains less elemental calcium (20%), which means more must be taken to get the same amount of elemental calcium that might be found in calcium carbonate tablets. Calcium carbonate needs stomach acid to be absorbed, so it should be taken with a meal (the stomach naturally makes acid to digest food). Calcium citrate does not need as much stomach acid to be absorbed. Calcium citrate is better for people 65 years and older because the body makes less stomach acid as we age.

While not enough calcium can cause health problems, so can too much. Hypercalcemia, too much calcium in the body, can cause constipation, but also kidney stones and other serious concerns.

Calcium's Buddy: Vitamin D

Vitamin D is essential for healthy bones and teeth, muscles and nerves. It is a nutrient that is needed to help the body absorb calcium, and it also supports the immune system that fights off illness.

The body gets vitamin D in three ways: through the skin, from food and from supplements. The body makes vitamin D when the skin is exposed to the sun, and as little as 10 minutes of sun exposure each day is thought to be enough to prevent low vitamin D levels. Wearing sunscreen to reduce the risk of skin cancer reduces the body's ability to make vitamin D.

Few foods naturally contain vitamin D, but fatty fish like salmon, tuna and mackerel are among the best

sources. Egg yolks, beef liver, mushrooms and cheese provide small amounts. Most of the milk supply is vitamin D-fortified; juices, yogurt, soy beverages and cereals also may have vitamin D added to them.

Vitamin D supplements contain D₂ (ergocalciferol) or D₃ (cholecalciferol). Vitamin D₂ supplements are made from plants, and vitamin D₃ supplements are made from lanolin, or fat, from sheep's wool. Vitamin D₃ is believed to stay in the body longer and keep amounts of the vitamin at a consistent level. See box for recommended daily doses.

Having low levels of vitamin D can lead to loss of bone density, broken bones (fractures), muscle weakness, and the bone-thinning condition, osteoporosis. Those most at risk for being deficient are overweight people (body fat prevents vitamin D absorption into the blood), and dark-skinned people and older adults (their skin doesn't make as much of the vitamin when exposed to the sun). Plus, those with digestive conditions like Crohn's disease and celiac disease don't process the fat we eat (dietary fat) properly and vitamin D needs dietary fat to be absorbed.

Taking more than 4,000 IU of vitamin D a day without a provider's careful watch can be harmful; it can cause nausea, constipation, weakness, confusion, heart rhythm problems and kidney damage.

Let Us Help

Understanding all the issues associated with getting enough calcium and vitamin D isn't as simple as drinking milk. Let us help you figure out what is the best for you. Call us with your questions and concerns. Our office hours are Monday through Friday, 9 am to 6 pm, CST. Call **800/355-0885**.