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Calcium and Vitamin D: Important for Bone Health

The foods we eat contain a variety of vitamins, minerals, and other important nutrients that help keep our bodies healthy. We need to get enough of two nutrients in particular, calcium and vitamin D, to help keep our bones strong.

What does calcium do for our bones?

Calcium is a mineral. Our bodies contain many different minerals, such as iron and magnesium, but the most abundant mineral in the body is calcium.

Also, our bones are partly made of calcium salts (mixtures of calcium with other minerals), especially calcium phosphate. Calcium phosphate hardens and strengthens bone.

Our bodies cannot make calcium. We need to get calcium from foods and drinks, and supplements when needed, to build strong bones and teeth and to keep them healthy. Healthy bones are less likely to break if we fall.

What happens to our bones without enough calcium?

Calcium does more than build strong bone. It also helps our muscles, heart, and nerves work properly.

If we do not get enough calcium in our diets, our body takes the calcium we need from our bones. Over time, this process makes bones weaker and raises the risk of [osteoporosis](#). Osteoporosis is a disease that makes bones weak and brittle, and people with osteoporosis have a higher risk of fractures (broken bones).

How much calcium do we need?

The amount of calcium each person needs depends on their age and sex. Table 1 lists how much calcium people need every day to keep their bones strong and healthy.

Table 1

Age group	Amount of calcium per day
Babies age 0 to 6 months	200 milligrams (mg)
Babies age 6 to 12 months	260 mg
Children age 1 to 3	700 mg
Children age 4 to 8	1,000 mg
Preteens, teens, and young adults age 9 to 18	1,300 mg
Adults age 19 to 50	1,000 mg
Women older than age 50 and men older than age 70	1,200 mg

Men age 51 to 70	1,000 mg
Pregnant and breastfeeding teens	1,300 mg
Pregnant and breastfeeding adults	1,000 mg

Source: National Institutes of Health Office of Dietary Supplements

What foods have calcium?

The best food sources of calcium are milk and other dairy products, like cheese and yogurt. Other food sources of calcium include:

- Fish (such as salmon and tuna).
- Leafy green vegetables (such as kale and turnip greens).
- Tofu (set with calcium).
- Small fish with bones (including sardines and canned salmon).

See the [Bone Health and Osteoporosis: What it Means to You](#) for several examples of calcium-rich foods.

Some foods and drinks are fortified with calcium. A food is fortified when the manufacturer adds vitamins or minerals that the food does not naturally have. Examples of foods fortified with calcium are certain brands of juice, soymilk, oatmeal, and breakfast cereal.

Some supplements contain calcium. Talk to your health care provider if you are thinking about taking a calcium supplement.

What does vitamin D do for our bones?

Vitamin D promotes bone health in these ways:

- Helps absorb the calcium we get from food.
- Along with calcium, helps protects older adults from osteoporosis.
- Promotes healthy functioning of our muscles and immune system. We need strong muscles to help us balance and reduce the risk of falling and breaking bones.

What happens to our bones without enough vitamin D?

When children do not get enough vitamin D, they can develop rickets. With rickets, the bones are soft, weak, deformed, and painful.

In adults, too little vitamin D over time can cause:

- Osteomalacia, a painful condition that makes bones and muscles weak and more likely to bend and break.
- [Osteoporosis](#).

How much vitamin D do we need?

Table 2 lists how much vitamin D people need every day to keep their bones healthy.

Table 2

Age group	Amount of vitamin D per day
Babies younger than 1 year	10 micrograms (mcg), which is equivalent to 400 international units (IU)
Children and adults age 1 to 70 years	15 mcg (600 IU)

Adults older than age 70	20 mcg (800 IU)
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Source: National Institutes of Health Office of Dietary Supplements

In the United States, most people do not consume enough vitamin D to meet recommended intakes. Some vitamin D can be made in the body with sun exposure. Still, many people have low vitamin D status.

What foods have vitamin D?

Not many foods have vitamin D. Some kinds of fish can provide some of the vitamin D we need each day. Examples are:

- Trout.
- Salmon.
- Tuna.
- Mackerel.

Most of the vitamin D that Americans get from food comes from fortified foods. Most milk and some yogurts in the United States are fortified with vitamin D, but most other dairy products do not have added vitamin D.

Other foods that may be fortified (check the label to be sure) include:

- Ready-to-eat breakfast cereals.
- Orange juice.

Some supplements contain vitamin D. Talk to your health care provider if you are thinking about taking a vitamin D supplement.

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