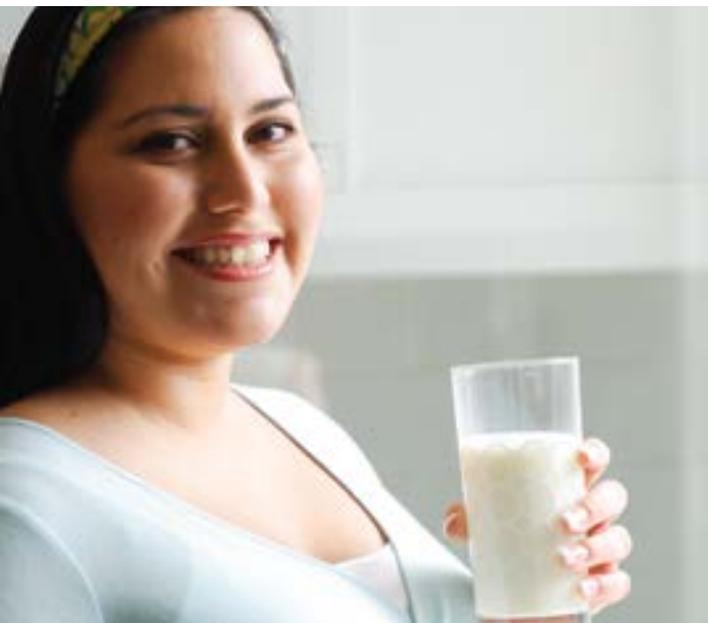


Calcium and Vitamin D

FOR HEALTH



WHY DO I NEED CALCIUM?

Your body needs calcium for many reasons. Calcium helps form bones and teeth and strengthens them to prevent breaks and decay. It is important for muscle contraction, blood clotting, and sending nerve impulses. Research also suggests that getting enough calcium may help reduce blood pressure and lower the risk of colon cancer.

Your body needs to keep the calcium in your blood at the right level. If the level is too low, your body can take calcium away from your bones. This can lead to osteoporosis, a condition that causes bones to become weak, thin, and brittle.

WHY IS VITAMIN D IMPORTANT?

Vitamin D can help protect your bones because it helps your body absorb and use calcium. This means more of the calcium you eat is available to build and maintain bone.

A diet low in vitamin D can make conditions like osteoarthritis, hypertension, and cardiovascular disease worse for some people. Lack of vitamin D may also contribute to bone pain or chronic aches. Getting enough vitamin D may also decrease the risk of colon cancer and help reduce the risk of falls in older adults.

Your body also makes its own vitamin D when exposed to the sun's ultraviolet (UV) rays. While it may be possible for some people to get enough vitamin D through sun exposure alone, for most people it is best to get it in foods and supplements. One reason is that using sunscreen, which we recommend to prevent skin cancer, will limit the vitamin D your body can produce. People with darker skin also absorb fewer UV rays and produce less vitamin D. In addition, the amount of sunlight we receive varies throughout the year, especially the further north you live, and may be affected by smog in some areas.

Studies have shown that many people don't have enough vitamin D in their bodies. So getting enough vitamin D every day, in food or supplements, is a good idea for everyone.

HOW MUCH CALCIUM AND VITAMIN D DO I NEED EACH DAY?

The amount of calcium and vitamin D you need depends on your age and other factors (see chart). For some age groups, there is a range rather than a single number. The low end of the range is the minimum required by most adults in that group. These numbers reflect the total amount from food and supplements, if used.

Your doctor may recommend the higher amount to help prevent osteoporosis or for other reasons, depending on your individual needs.

Age (yrs)	Calcium (mg/day)	Vitamin D (IU/day)
1-3	700	600-1000
4-8	1000	600-1000
9-18	1,300	600-1000
19-49	1,000	1,000-2,000*
50+	1,200	1,000-2,000*
Pregnant or breastfeeding women	1,000-1,300	1,000-2,000*
Upper Limit	2,500	4,000

Note: Limit your total intake from foods and supplements to no more than 2,500 mg of calcium and 4000 IU vitamin D.

*For children under 1, ask your pediatrician.

FOOD SOURCES FOR CALCIUM	mgs of calcium
fat-free (skim) milk, 1 cup	306
soymilk or rice milk, calcium fortified, 1 cup	300
plain yogurt, non-fat, 6 oz. container	300
1% low-fat milk, 1 cup	290
buttermilk, low-fat, 1 cup	284
tofu, firm, made with calcium, 1/2 cup	253
fruit yogurt, low-fat, 6 oz. container	250
mozzarella cheese, part-skim, 1 oz.	207
cheddar cheese, 1 oz.	205
pink salmon, canned, with bone, 3 oz.	181
collard greens, cooked, 1/2 cup	178
molasses, blackstrap, 1 Tbsp.	172
spinach, cooked, 1/2 cup	146
feta cheese, 1 oz.	140
soybeans (edamame), green, cooked, 1/2 cup	130
turnip greens, cooked, 1/2 cup	124
ocean perch, Atlantic, cooked, 3 oz.	116
instant oatmeal, fortified, 1 packet prepared	100
white beans, canned, 1/2 cup	96
kale, cooked, 1/2 cup	90
okra, cooked, 1/2 cup	88
bok choy or Chinese cabbage, cooked, 1/2 cup	74
corn tortillas, two 6-inch	38
whole wheat bread, 1 slice	30
cream cheese, fat-free, 1 Tbsp.	28

Source: USDA National Nutrient Database
nal.usda.gov

FOOD SOURCES FOR VITAMIN D	IUs of D
halibut, cooked, 3 oz.	510
catfish, cooked, 3 oz.	425
salmon, cooked, 3 oz.	360
oysters, cooked, 3 oz.	272
sardines, canned in oil, drained, 1¾ oz.	250
shiitake mushrooms, dried, 4	249
tuna, canned, 3 oz.	200
shrimp, cooked, 3 oz.	149
orange juice, vitamin D fortified, 1 cup	100
milk, vitamin D fortified, 1 cup	100
soymilk or rice milk, vitamin D fortified, 1 cup	100
yogurt, low-fat, vitamin D fortified, 6 oz.	80
margarine, fortified, 1 Tbsp.	60
ready-to-eat cereals fortified with vitamin D	40-50
egg, 1 whole	26

Source: USDA National Nutrient Database
nal.usda.gov

STRATEGIES TO MEET YOUR DAILY NEEDS FOR CALCIUM AND VITAMIN D

- Eat three to four servings of high-calcium foods every day. Options include low-fat or fat-free dairy products, fortified orange juice, and fortified soy or rice milk.
- Complement your diet with other foods that contain calcium such as fortified cereals, tofu made with calcium sulfate (check the ingredients), and leafy greens like kale. See the calcium chart for more ideas.

- Make soups, smoothies, puddings, parfaits, and dips with low-fat or fat-free dairy products.
- Eat fish containing vitamin D regularly. See the vitamin D chart for more ideas.
- Choose dairy products, juices, and cereals that are fortified with vitamin D.

LACTOSE INTOLERANCE

Lactose is a sugar in milk that some people have trouble digesting. They may have stomach cramps, gas, bloating, or diarrhea when they eat dairy products. If you think this is happening to you:

- Try eating smaller amounts of milk or other dairy products at a time.
- Figure out which foods work for you. For instance, some people have trouble with milk, but not with cheese or yogurt.
- Consider products such as lactose-reduced milk, or lactase drops or tablets.
- Use non-dairy sources of calcium such as fortified cereals, juices, soymilk, and rice milk.

WHAT ELSE CAN I DO TO MAINTAIN HEALTHY BONES?

In addition to getting enough calcium and vitamin D, to maintain strong bones you should:

- Have a good daily intake of dietary calcium and vitamin D at every age.
- Be physically active. Studies show that weight-bearing activities can help build and maintain bone in people at all ages. Weight training, walking, dancing, jogging, and racquet sports are examples.
- Avoid tobacco use and excessive use of alcohol.

SHOULD I TAKE A CALCIUM OR VITAMIN D SUPPLEMENT?

Food should be the primary source of calcium and vitamin D. But many people do not consume enough of these nutrients, especially if they are at risk for osteoporosis. If this applies to you, your doctor may recommend a supplement.

- You can find vitamin D in most multivitamins or as an individual supplement of up to 2,000 IU. Vitamin D3 is preferred but Vitamin D2 is an option for those who avoid animal products.
- There are several types of calcium supplements.
 - Calcium carbonate and calcium citrate are the most common. The body absorbs both well. You need to take calcium carbonate with food, but calcium citrate can be taken on its own. If you take any medicines that block acid, like those used for ulcers or acid reflux (heartburn), don't take calcium carbonate.
 - Calcium citrate malate is found in some juices. It is easily absorbed.
 - You may also find calcium gluconate, lactate, and phosphate as supplements to certain foods.
- Other sources of calcium such as coral calcium and dolomite are not recommended. They may contain unsafe levels of lead, mercury, or arsenic and may not be easily absorbed by your body. If you have shellfish allergies, don't take coral calcium.

If a vitamin or supplement causes constipation, gas, or other digestion problems, talk with your health care professional about what may work better for you.

Your body uses calcium best when the dose is less than 500 mg. If you are taking 1,000 mg of calcium a day, try to take it in two separate doses. For example, take 500 mg in the morning and 500 mg in the evening.

Certain medications might need to be taken at a different time of day than calcium supplements in order to enhance calcium absorption. These include thyroid hormones, tetracycline, corticosteroids, and iron pills. If you take any of these medicines, talk with your doctor about the best time to take your calcium supplement.

OTHER RESOURCES

- Connect to our website at kp.org to access health and drug encyclopedias, interactive programs, health classes, and much more.
- Contact your Kaiser Permanente Health Education Center or Department for health information, programs, and other resources.
- If you are hit, hurt, or threatened by a partner or spouse, this can seriously affect your health. There is help. Call the National Domestic Violence Hotline at 1-800-799-7233 or connect to ndvh.org.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor.

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