
PREVENTING FALLS AND FRACTURES

Falls increase the chances of fracturing a bone that has been weakened by osteoporosis. Falls can be caused by unsafe surroundings, poor vision, poor balance, drugs that increase dizziness or confusion, and medical conditions that affect gait, vision, or mental function. People with diabetes are at increased risk for falls if their diabetes has changed their vision or neuropathy has affected their balance or gait. Hypoglycemia (low blood sugar) can also increase the chances of a serious fall.

Here are some tips to lower your risk of falling:

- Make sure rooms, hallways, and stairways in your home are well lit, and keep a flashlight in your car and by your bed.
 - Leave a light on in the hall or bathroom at night so you are not stumbling in the dark if you need to go to the bathroom.
 - Keep floors, hallways, stairways, and outdoor walkways free of clutter.
 - Wear rubber-soled shoes and slippers. Do not walk in socks or stockings on smooth or slippery surfaces. Avoid shoes with high heels.
 - Use rubber bath mats in the tub and shower. Consider using a shower chair if your balance is poor.
 - Have handrails installed in stairwells and grab bars in the bathroom.
 - Use nonslip carpet pads or tack down area rugs in your home. If you use throw rugs, choose ones with a nonslip backing.
 - If you have mobility problems, consider carrying a cordless phone on your person, or use an answering machine so you are not tempted to run to answer the phone when it rings.
 - Keep your blood glucose meter and something to treat low blood glucose (such as glucose tablets) nearby when you are napping or sleeping.
 - Avoid walking on rough or uneven surfaces if your balance is poor. Watch your step at curbs, and look for misaligned areas when walking on sidewalks. Consider using a cane or walker.
 - If it's icy outside, carry a small bag of sand, salt, or kitty litter to sprinkle on slippery sidewalks and steps or wear lightweight crampons.
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THE CALCIUM CONNECTION

Calcium is a nutrient that is needed for the proper growth and development of bones. It is also required for heart contraction, nerve function, and many other cell reactions. If dietary calcium intake is too low, the body takes calcium from bones to meet other needs. Over time, this can cause calcium depletion and bone weakening.

Your body's calcium level is a function of more than just what you eat. Calcium balance is determined by how much calcium you get in your diet, how much of that calcium your body absorbs, and how much calcium your body loses each day, mostly through urine.

Intake. Research shows that low calcium intakes decrease bone mass and increase bone loss and fractures. This is a serious concern since many Americans get less than half the calcium they need to keep their bones healthy. Those people who need calcium the most—teenage girls, young women, and adults over 65—tend to have the lowest intakes.

Current recommendations for calcium intake vary by age and sex. To meet your calcium needs, try to eat at least 2 to 3 servings of low-fat dairy products or other calcium-rich foods each day. People who do not meet this goal and people with potentially higher requirements, such as older women, may need a supplement to reach their recommended daily intake for calcium.

Good sources of calcium include low-fat milk, yogurt, and cheese; dark green, leafy vegetables such as broccoli, collard greens, bok choy, and spinach; fish with edible bones such as canned sardines and salmon; calcium-fortified tofu and soy milk; almonds; and foods fortified with calcium such as orange juice, cereals, nutrition bars, breads, and rice.

If you need a calcium supplement to meet your calcium require-

ments, choose one that contains calcium citrate, calcium lactate, or calcium carbonate. Choose supplements that have the USP (United States Pharmacopeia) seal, showing they meet government guidelines for production and dissolution. Avoid "natural" calcium supplements that contain calcium from coral, oyster shells, dolomite, or bone meal, because these sources are more likely to be contaminated with lead and other dangerous substances. Calcium supplements are better absorbed when taken with meals and in moderate doses. If you need to take more than 300–500

RECOMMENDED CALCIUM INTAKES

Children

1–3 years 500 mg/day
4–8 years 800 mg/day

Boys and men

9–18 years 1300 mg/day
19–50 years 1000 mg/day
50 and older* 1200 mg/day

Girls and women

9–18 years 1300 mg/day
19–50 years 1000 mg/day
50 and older* 1200 mg/day

Upper intake limit . . . 2500 mg/day

* Some experts believe calcium intakes for men and women over 65 should be as high as 1500 mg/day.

milligrams as a supplement each day, divide your dose and have part in the morning and part in the evening with meals. Some people may need a supplement that also contains vitamin D.

Absorption. Calcium absorption is a function of how much calcium you eat and how available the calcium from that food is. Not all sources of calcium are absorbed equally. Calcium from dairy products and fortified foods is absorbed better than calcium from vegetables or supplements, though some research suggests that other nutrients in fruits and vegetables may enhance bone density.

Calcium absorption and normal bone development also depend on adequate levels of vitamin D. The primary source of vitamin D is sunshine, which the body uses to make vitamin D in the skin. Summer sun exposure of at least 15 minutes per day without sunscreen is believed to meet requirements. Sun exposure in the winter, in northern latitudes, and in polluted areas may not be as efficient. Older people and people with kidney disease do not make vitamin D well. The best food source of vitamin D is fortified milk; most other dairy products are not fortified.

Recommended intakes of vitamin D are 5 micrograms per day (200 International Units [IU]) for children and adults up to age 50; 10 micrograms per day (400 IU) for adults 50–70 years; and 15 micrograms (600 IU) for adults over 70. Studies suggest that many older people have significantly depleted levels of vitamin D and that supplements containing up to 800 IU of vitamin D and 1200 milligrams of calcium protect against fractures when taken daily. However, vitamin D can be toxic in high doses. The safe upper intake level for vitamin D is 50 micrograms per day (2,000 IU).

Other nutrients in foods can also affect calcium balance but play a smaller role than either calcium or vitamin D. High-protein and high-sodium diets can cause increased urinary calcium loss, which can negatively affect calcium balance in those with low calcium intakes. Caffeine, oxalates in vegetables like spinach, and phytates in wheat bran can bind to calcium in the intestine, decreasing its absorption, as can phosphorus from soft drinks and other foods. Too much retinol, a form of vitamin A, can interfere with calcium absorption and normal bone metabolism. Soy isoflavones, because of their similarities to estrogen, may be bone protective.