

## Regular Calcium Use Does Prevent Fractures

### A close look at two controversial studies

Calcium supplements do help prevent fractures—but only if you take them regularly. That’s the take-home message from two large, widely reported but easily misinterpreted clinical studies. The conclusions of both studies may seem to cast some doubt on the benefits of calcium for bone health. But before you throw out your calcium pills, take a closer look at the results and how they may apply to you.

First, and most important, when researchers looked only at those women who took their pills regularly, both studies show a clear reduction in fractures. And women over age 60 had better protection against fractures than younger women.

#### Women’s Health Initiative

The huge study known as the Women’s Health Initiative (WHI) involved signing up more than 36,000 women ages 50 to 79. Half were randomly assigned to take a calcium supplement (1,000 mg plus 400 IU of vitamin D) and half to take an identical-looking dummy pill, or placebo. After an average of seven years, the group taking supplements had a small but significant improvement in hip bone density. But they showed no significant reduction in hip fractures.

That finding—no additional protection against broken hips—led to negative headlines and sound bites. But buried deeper in the study was another finding: Those women who took their pills

consistently had a 29% lower risk of breaking a hip bone than women who had taken a placebo. The study also found that, in the calcium group, the risk among women over age 60 was reduced by 21%, whether or not they took the supplements every single day of the study.

Most who were assigned to take supplements also got lots of calcium and vitamin D in their daily diets, which implies that adding pills didn’t make much difference across the entire study. A majority of the women in the study—including those in the placebo group—were taking calcium supplements of their own volition, not as part of the research protocol (something that the researchers had allowed them to do). So perhaps it’s not surprising that the apparent response to the calcium supplements was somewhat blunted.

#### Australian Study

A few months later, Australian researchers reported similar results from a study of 1,460 women over age 70. Half of the women took 600 mg of calcium twice a day; the other half took a placebo. All of the women had enough vitamin D in their diets to not need supplements, according to blood tests.

After five years, there was no difference between the two groups in the number of fractures due to osteoporosis. But among those who had taken at least 80% of their pills, either calcium

or placebo, the women on calcium had 34% fewer fractures. X-rays, bone ultrasounds, and bone scans showed that women who took calcium had improvements in bones in the heel, the femoral neck, and their total body, and had better bone strength.

Were the women who took their pills more health conscious or healthier to start with? Is that why they had fewer fractures? Not likely. The researchers found no meaningful health differences between the two groups, so the lower risk of fracture really appears to be due to the calcium supplements.

#### Calcium Is Safe

Calcium is a relatively low-risk treatment. The WHI study found that the most significant side effect of daily calcium use was a 17% higher risk of kidney stones. This overall risk is relatively low (although kidney stones can be unpleasant and painful if you develop them). The Australian study found that the only side effect of calcium use was constipation and that it was not severe enough to discourage the women from continuing to take their calcium pills.

#### What To Do Now

These two studies show that if you are under a doctor’s care (and you should be if you are at risk for osteoporosis), calcium supplementation is a safe and effective therapy for reducing your risk of fractures. Your lifelong strategy

to prevent fractures due to osteoporosis should include the following:

**Don't dismiss calcium.** After age 50, you need to consume 1,200 mg of calcium every day. Low-fat milk and other dairy products are good sources of calcium. But if you're like most people, you may only get about 400 mg in your daily diet.

It's a good idea to add up the amount of calcium in your usual diet and take supplements to reach a daily intake of 1,200 mg. (See table for a simple guide.) Nutrition labels on food products tell you what percentage of the recommended daily allowance of calcium (1,000 mg) a serving of that product contains; if you multiply the percentage value given for calcium by 10, you will know the number of milligrams of calcium per serving of that food item. If you're not sure that your diet provides sufficient calcium, a 600-mg calcium supplement once or twice a day is safe.

**Make sure you are getting enough vitamin D each day.** Postmenopausal women who get at least 800 IU of vitamin D daily have a lower risk of hip fracture. Many dairy and other products now have vitamin D added to them, and you can count this toward your 600-IU daily goal.

Try to get 10 to 15 minutes of sunshine each day without sunscreen, and take either a multivitamin (most contain 400 IU of vitamin D in each tablet) or just a 400 IU vitamin D supplement. If you are not getting any sun, then

### Calcium Content of Common Food Items

Food	Portion	Calcium (mg)
Yogurt (plain, fat free)	1 cup	450
American cheese	2 ounces	348
Ricotta cheese (part skim)	½ cup	337
Cheddar cheese	1 ½ ounces	305
Milk (fat free or low fat)	1 cup	300
Orange juice with added calcium	1 cup	300
Soy beverage with added calcium	1 cup	250–300
Mozzarella cheese (part skim, low moisture)	1 ounce	207
Tofu (with calcium sulfate on ingredient list)	½ cup	204
Dark green vegetables (collards, broccoli, kale)	½ cup	90–170
Pudding made with milk	½ cup	147–160
Cheese pizza	1 slice	111–147
Frozen yogurt (fat free or low fat)	½ cup	105
Ice cream	½ cup	84
Cottage cheese	½ cup	69–78
Almonds (dry roasted)	1 ounce	71
White bread	2 slices	70

Source: Centers for Disease Control and Prevention

consider increasing the supplement dose to twice daily.

**Don't smoke cigarettes, and limit your alcohol intake.** Both smoking and heavy alcohol use weaken your bones.

**Don't forget the importance of regular exercise.** Weight-bearing exercises such as walking and resistance training help to maintain your bone strength and prevent fractures. ■