

Nutrition and Bone Health

Osteoporosis:

Osteoporosis is a medical condition characterized by porous, fragile bones. Ten million Americans (80% of which are women) are dealing with osteoporosis. Another 34 million Americans have osteopenia, or low bone mass, an earlier state of bone loss. Osteoporotic bones resemble Swiss cheese, whereas normal bones resemble cheddar cheese. These weaker diseased bones are at an increased risk of breaks and fractures.

Calcium's role in preventing osteoporosis:

During childhood and adolescence, bones increase in size and mass. Bones continue to grow in mass until age 30. After this age, the body breaks down bone quicker than it can build it, and gradually we start to lose bone as a normal part of aging. Calcium helps build strong bones and helps keep bones strong as we age. Our bodies do not make calcium, therefore, it is important that we take in enough calcium everyday.

Food and Nutrition Board and National Osteoporosis Foundation Recommendations:

How much do we need?

Age	Amount per day
1-3 years	700 mg
4-8 years	1000 mg
9-18 years including those that may be pregnant	1300 mg
19-50 years including those that may be pregnant	1000 mg
Men 50 to 70 years	1000 mg
Women 51 + years	1200 mg
Men 71 + years	1200 mg

Food sources of calcium:

Food	Amount of calcium
1 cup milk (Lactaid or fortified soy milk as well)	300 mg
1 cup calcium fortified orange juice	300 mg
1 ½ ounce shredded cheddar cheese	300 mg
1 cup yogurt	250-300 mg
1 ½ ounce part skim mozzarella	275 mg
½ cup calcium fortified tofu	200-300 mg
3 ounces salmon, canned with bones	200 mg
1 cup 1% cottage cheese	140 mg
½ cup collard greens	100 mg
1 cup ready to eat calcium fortified cereal	100 mg
½ cup broccoli	90 mg

Helpful Hint: Food labels list the amount calcium as a percentage (%). Drop the % sign and add a zero and that will tell you how many milligrams of calcium the product has per serving. For example, if a food label says 20% calcium that means the product has 200 mg of calcium per serving.

What about calcium supplements?

The two main sources of calcium supplements are calcium carbonate and calcium citrate.

- Calcium carbonate is less expensive, and contains 40% calcium. Examples are Tums, Oscal, and Caltrate.
- Calcium citrate contains 21% calcium so you have to take more of these than calcium carbonate. Calcium citrate is better absorbed in people who have decreased stomach acid, and may be better tolerated in those with constipation. Example is Citracal.
- Take calcium supplements with meals to increase absorption.
- Calcium is absorbed best when taken in amounts of 500-600 mg at one time. If you are taking more than, this split up your doses.
- Avoid supplements made from bone meal or oyster shell, unless they are purified. Unpurified supplements may contain toxic metals such as lead.

A Note on Vitamin D:

Vitamin D is essential for promoting calcium absorption. Without adequate Vitamin D bones can become thin, brittle, or misshapen.

The Food and Nutrition Board established an Adequate Intake amount for Vitamin D that represents a daily amount of Vitamin D that is sufficient to maintain bone health and normal calcium metabolism in healthy people.

Food and Nutrition Board and National Osteoporosis Foundation Recommendations:

Age	Amount of Vitamin D per day
Children 1 to 18 years	600 IU
Adults under 50 years old	400-800 IU
Those over 50 years old	800-1000 IU

Food sources of Vitamin D

Food	IUs per serving
Cooked salmon, 3.5 ounces	360 IU
Cooked mackerel, 3.5 ounces	345 IU
Tuna fish canned in oil, 3 ounces	200 IU
Milk, Vitamin D fortified, 1 cup	98 IU
Ready to eat cereal, fortified, 1 cup	40 IU
1 whole egg	20 IU

Vitamin D supplements:

It can be challenging to try and meet our need for Vitamin D through diet alone. The sun can help your skin produce Vitamin D, but from October-March, the sun has no effect on the body's ability to make Vitamin D. Then, in the warmer months, today's sunscreens block out the UV rays that are needed to make Vitamin D in the skin. Therefore, for most of us, a supplement will be necessary. Look for a multivitamin supplement that contains the right amount of Vitamin D for your needs.