

# Bone Health

## Brown Health Services Patient Education Series

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### How can I keep my bones healthy and strong?

Be sure to get the recommended amount of calcium and Vitamin D. College students should have an intake of 1200 mg of calcium daily. Vitamin D helps the gastrointestinal tract absorb calcium. The recommended vitamin D intake is 800 - 1000 IU per day. Although some of our vitamin D is manufactured in our skin after exposure to sunlight, we cannot rely on the sun to produce all the vitamin D we need, especially in northern areas like New England. Diet is the best source of vitamin D. Supplements may be necessary, but vitamin D from all sources should not exceed the recommended limit. Vitamin D should be taken with food.

### What are the best sources of calcium in food?

Nutritionists believe that it is preferable to choose food over calcium supplements if possible since calcium rich foods contain many other nutrients that work with calcium to keep your bones healthy. Also, calcium from supplements is not as well absorbed by the body as calcium from dairy products.

#### Dairy Group

The dairy group is the best source and you should try to get "3 a day." About three servings of dairy (each about 300 mg) approach the daily goal of calcium. Women with osteoporosis or osteopenia need 1200 -1500 mg calcium daily, the equivalent of 4 servings of dairy. Three servings plus a 500 mg calcium supplement would also give you the needed amounts. Dairy products are a particularly good source of calcium because they are also fortified with vitamin D.

### Appropriate calcium content of selected foods

#### Milk

All types of cow's milk	1 cup	300 mg
Calcium-fortified soy milk	1 cup	300 mg
Low-lactose milk	1 cup	300 mg

#### Yogurt

Plain or flavored yogurt (top off your baked potato or add fruit to make a smoothie)	1 cup	300mg
Plain greek yogurt	5.30 oz	170 mg

#### Cheese and Ice Cream

Swiss cheese	1.5 oz	300 mg
American cheese	2 oz	300 mg
Cheddar cheese	1.5 oz	300 mg
Mozzarella cheese (skim) (top off your salad)	1.5 oz	300 mg
Parmesan cheese, grated (top off your pasta)	1 oz	300 mg
Low-fat cottage cheese	1/2 cup	80 mg
Typical ice cream	1/2 cup	90 mg

#### Meat/Protein Group

Canned Salmon with bones (good substitute for tuna)	3oz	200 mg
Almonds	1/3 cup	120 mg
Tofu (calcium-fortified)	1/2 cup	150 mg

#### Vegetable Group

Kale	1/2 cup	90 mg
Beet greens	1/2 cup	80 mg
Broccoli	1/2 cup	50 mg

(Dark green vegetables are rich in calcium, but little is absorbed. However, they are a good source of vitamin K, which is also important for bone health.)

#### Fruit Group

Orange	1 fruit	50 mg
Calcium-fortified orange juice	8 oz	300 mg

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(a very well absorbed source of calcium)

Figs, dried                                      10 figs   250 mg

### Grain Group

Enriched English muffin      1 muffin   100 mg

4-inch Pancakes made with milk (2)   70 mg

Hamburger bun                                1 bun     50 mg

6-inch corn tortilla                         1 tortilla   40 mg

Calcium fortified cereal                    1 cup     300 mg

(Start your day with cereal and milk.)

### Combination Foods

Cheese pizza                                    1 slice    220 mg

Taco Salad                                      1 salad    280 mg

Taco    1 taco     100 mg

Caffe Latte                                       12 oz     400 mg

Caffe Mocha                                    12 oz     300 mg

Cappuccino                                      12 oz     250 mg

### Should I take a calcium supplement?

If your typical diet does not allow you to consume enough calcium, calcium supplements should be taken. Multivitamins with minerals do not have the amount of calcium needed as a supplement. Calcium supplements exist in different compounds, all available over the counter. Although all of these provide calcium they have different calcium concentrations, and absorption may differ.

The best choices for calcium supplements include:

- Calcium citrate or maleate pills, especially those with vitamin D. These are more expensive but are absorbed better in general. There is some absorption on an empty stomach.
- Calcium carbonate pills, especially those that include vitamin D. These

should be taken with food in order to be absorbed.

- Remember that calcium and iron supplements (or vitamins with iron) should not be taken together as the body will preferentially absorb iron and the calcium will not be absorbed.
- If you take a multivitamin with vitamin D, check the vitamin D in your calcium supplement, too - to be sure you are not over 800 IU/ day.
- You can adjust your daily intake of a supplement, depending on your dietary intake of calcium foods for the day, to approach your goal of calcium per day.
- Women diagnosed with osteopenia (below normal bone density) or osteoporosis (more advanced bone loss), should consume a minimum of 1200 mg calcium per day through diet and supplements.

### What else can I do to keep my bones healthy?

**Get regular physical activity.** Physical activity, particularly weight-bearing exercise, applies tension to muscle and bone which encourages the body to compensate for the added stress by increasing bone density. Activities that involve the repeated action of your feet hitting the ground such as brisk walking, jogging, racket sports or aerobic dancing are the best options. Weight training on resistance machines or with free weights also strengthens bones. Swimming and bicycling promote fitness but they aren't bone builders.

**Maintain a healthy weight.** If you cut back on food to cut calories, you may come up short on calcium, too. A Word of Caution: being underweight or exercising too much

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may change one's menstrual cycle (irregular periods or none at all) by affecting hormone levels. Because hormones help deposit calcium in the bones, you lose the natural protections that hormones provide against bone loss and increase your risk for osteoporosis. A return to normal eating and exercise patterns may lead to return of normal menstrual periods and prevent further bone loss. However, those affected may live the rest of their lives with weakened bones, leading to impaired mobility, chronic pain and deformity.

**Avoid smoking.** Smoking is bad for your bones as well as your heart and lungs.

**Go easy on alcoholic drinks.** Excessive drinking interferes with calcium absorption.

**Reduce caffeine intake.** Two to three cups of caffeinated coffee daily has been shown to contribute to bone loss, particularly if calcium intake is low.

For more information on healthy eating, go to the nutrition section of our Health Education website at [www.brown.edu/bwell](http://www.brown.edu/bwell).