

# Health Facts

*for you*

## Calcium

Calcium is important for people of all ages for good health. This handout explains how to meet your daily calcium needs.

Calcium is a mineral that helps form and maintain healthy bones and teeth. It is also needed for normal blood clotting, heart function, and to help muscles contract.

### Calcium Needs

Calcium needs are based on the amount of bone and tissue growth during phases of the life cycle. The calcium needs advised by the Food and Nutrition Board, Institute of Medicine, and the National Institute of Health are shown below.

<b>Life Stage</b>	<b>Age</b>	<b>Recommended Dietary Allowance (milligrams)</b>
Infants	0 – 6 months	210
	6 – 12 months	270
Children	1 – 3 years	500
	4 – 8 years	800
Adolescents	9 – 18 years	1300
Adults: Men and Women	19-50 years	1000
	Greater than 50 years	1200
Pregnant and Nursing Women	Less than 18 years	1300
	19-50 years	1000

### Foods That Are Good Sources of Calcium

Milk and milk products are the best sources of calcium in our diets. The vitamin D and lactose in dairy products help your body absorb calcium. Below you will find foods that are good calcium sources.

**250-300 mg of Calcium**

3 oz. sardines, canned, drained, including bones  
1 cup oyster stew—homemade with milk  
1 cup milk (whole, 2%, 1%, skim, chocolate, or made from dry milk)  
1 cup macaroni and cheese, homemade  
1 cup cocoa made with milk  
1 oz. Swiss cheese  
1/6 of 9” quiche  
1/3 cup non-fat dry milk powder  
1 cup malted milk  
8 oz. milk shake  
5 oz. tofu (soybean curd), processed with calcium sulfate  
1 cup plain or flavored yogurt\*  
8 oz. calcium-fortified juice or drink\*  
8 oz. calcium-fortified soy milk

**200-250 mg of Calcium**

1 oz. cheddar or brick cheese  
1 cup cheese soufflé  
Cheese pizza (1/8 of 15” pie)

**150-200 mg of Calcium**

1 oz. Mozzarella cheese, part skim  
1 cup cottage cheese, 2%  
½ cup bread pudding made with milk  
¾ cup creamed chipped beef  
½ cup au gratin potatoes  
1 cup macaroni and cheese, from box\*  
1 taco with beef and cheese  
1 cup cream soup made with milk  
3 oz. salmon, canned with bones

\*Calcium content varies by brand. Always check labels.

**100-150 mg of Calcium**

½ cup bokchoy, cooked  
½ cup turnip greens, cooked  
1 cup broccoli  
¾ cup mustard greens, cooked  
1 cup kale, cooked  
3 oz. herring, canned  
½ cup oysters  
¾ cup soybeans, cooked

2 oz. (25-30) almonds, whole  
 2 tbsp. grated Parmesan cheese  
 ½ cup ice cream or ice milk  
 ½ cup custard  
 ½ cup pudding, made with milk  
 1 cup sherbet  
 ½ cup frozen yogurt  
 2 pancakes (4" diameter)  
 1 waffle (7" diameter)  
 1 tbsp. blackstrap molasses  
 ½ cup rice pudding made with milk  
 1 piece cornbread (2-1/2 x 2-1/2 x 1-1/2")

**Suggested Intake of Milk and Milk Products**

Since milk and milk products are very good sources of calcium, try to include enough servings each day. The list below outlines how much you need each day.

Age	Servings per Day
<b>Infants, Children, Adolescents</b>	
1-3 year	1-2
4-8 years	3-4
9-18 years	4-5
<b>Adults</b>	
19-50 years	3-4
51-70 years	4-5
Greater than 70 years	5
<b>Pregnant and nursing women</b>	4-5

**Snacks High in Calcium**

**Yogurt Popsicles**

Mix one 8 oz. carton of plain yogurt, 6 oz. of unsweetened fruit juice concentrate and a dash of vanilla or honey, if preferred. Freeze in commercial molds or in 3 oz. paper cups, using wooden sticks or spoons as handles. Makes 5 popsicles; each contains 60 mg calcium.

**Fruit Smoothie**

Mix in blender until smooth:

1 cup milk  
 ½ to ¾ cup of fresh or frozen fruit

or

1 cup fruit juice (orange, apricot, prune, etc.)  
¼ tsp. vanilla  
1-2 ice cubes  
Sprinkle with nutmeg or cinnamon, if preferred  
Contains 280 mg of calcium.

### **Fruit Nog**

1 (8 oz.) carton flavored yogurt  
¼ tsp. vanilla or almost any extract  
1 cup milk  
2 tsp. sugar (optional)  
1 cup fresh strawberries or orange sections  
2-3 ice cubes

Place all items except ice in blender. Blend at high speed until mixture is frothy. Add ice cubes one at a time and blend.  
Contains 560 mg calcium

### **Other Choices to Drinking Milk**

If milk is not your choice as a drink, you may wish to find other ways to include dairy products in your diet. Here are some ways.

- One or more teaspoons of dry milk powder can be added to scrambled eggs, soups, gravies, casseroles, milkshakes, meatloaf, muffins, cookies or bars, hot cereals, mashed potatoes, and puddings. The milk powder will not change the taste of the food, but it will add calcium and protein to your diet.
- Add grated cheese to sauces, vegetables, salads, dips, soups, rice, muffins, mashed potatoes, casseroles, meatloaf, and noodles. Give reduced fat cheese a try.
- Serve sweet or plain yogurt with fruits and desserts. Use yogurt to top cereal, pancakes, waffles, and to fill crepes.
- Add ricotta cheese to casseroles, sauces, dips, and scrambled eggs.
- Stir-fry tofu with vegetables. Tofu can be used instead of meat or used with meats in casseroles, spaghetti sauce, or lasagna.
- Drink calcium fortified orange juice or soymilk. Be sure to check the nutrition label because calcium content varies by brand.
- Other foods may also have calcium added. The nutrition facts label lists the percent of calcium in the product based on 1000 mg of calcium.

### **Lactose Intolerance and Calcium Intake**

Some people cannot eat the suggested amounts of milk and milk products because their bodies do not produce enough **lactase**, the enzyme that digests the milk sugar **lactose**. If these people drink too much milk, they may have stomach cramping, gas, and diarrhea. Lactose intolerance can occur in varying degrees. Some people can drink small amounts of milk. Some cannot drink any milk or milk products. Some tips to help with this problem are below.

- Do not eat a dairy product alone. Include it with other foods in a meal or snack.
- Yogurt and cheese often have less lactose and may settle better.
- Know how much milk and milk products you can handle in a day and stay within that limit.

Lact-Aid, a product found in drug stores without a prescription, can be added to milk before drinking to digest the lactose in the milk. This can prevent the adverse symptoms from lactose intolerance. This product allows you to have dairy products in spite of lactose intolerance.

Because milk products are the major source of calcium in our diets, it's hard for a person with lactose intolerance to get enough calcium. In this case, a calcium and vitamin D supplement may be needed. This is mainly true for people with higher calcium needs (children, pregnant and women who breastfeed).

### Calcium Supplements

If you're not meeting your daily calcium needs through your diet, you should think about adding calcium tablets. Calcium tablets take the form of calcium carbonate, calcium citrate, calcium gluconate, or calcium lactate. Only part of each tablet is calcium that your body can use. The table below compares calcium carbonate and calcium citrate supplements and the best time to take them. Calcium gluconate and calcium lactate cost more and contain less calcium per pill so you'd have to take more pills to get the same amount of calcium.

**Note:** if you are taking medicine to decrease stomach acid or use antacids on a daily basis, calcium citrate is advised instead of calcium carbonate.

<b>Calcium Citrate</b> (Citracal)	<b>Calcium Carbonate</b> (Tums, Oscal, Caltrate, Viactiv, CalBurst)
Can be taken any time during the day.	Must be taken with meals or snacks to be absorbed best
Does not require stomach acid to be absorbed.	Stomach acid is need for it to absorb. Do not take with antacids.
Gentle on the stomach.	May cause gas, constipation, and bloating
	Look for "USP" on label or box (confirms pill will dissolve in normal amount of stomach acid.)

Read product labels or ask your pharmacist to find out the calcium content found in that brand.

Calcium is best absorbed when taken with meals. Do not take more than 600 mg of calcium at one time. A calcium intake greater than 1500 mg is not advised. High amounts of calcium may cause kidney stones in some people.

There has been some debate about the amount of lead found in the choice of calcium tablets, mainly the ones that contain dolomite or bone meal. Yet lead had been found in some calcium tablets without these compounds. Does this mean you need to stop taking calcium tablets? For most people meeting calcium needs through adding tablets to their diet, lead toxicity should not be a problem.

**Calcium supplements offered over-the-counter include.**

<b>Supplement</b>	<b>Calcium (mg)</b>	<b>Vitamin D (IU)</b>	<b>Comment</b>
Caltrate 600	600	0	In 2 tablets
Caltrate 600 + D	600	400	In 2 tablets
Caltrate 600 + D	600	400	Chewable-2 tablets
Citracal + D	630	400	In 2 tablets
Citracal Petites + D	400	400	In 2 tablets
One-a-Day Women's	450	800	In 1 tablet
One-a-Day Women's	405	800	In 1 tablet
50+ Advantage			
One-a-Day Women's Prenatal	300	400	In 1 tablet
One a Day Men's	210	400	In 1 tablet
Os-Cal 500 + D	500	200	In 1 tablet
Os-Cal 500 + Extra D	500	400	In 1 tablet
Tums	500	0	In 1 tablet
Tums EX	750	0	In 1 tablet
Tums Ultra	1000	0	In 1 tablet.
Viactiv	500	500	In 1 Soft chew

**Vitamin D**

The body does not use calcium well if you don't get enough Vitamin D. Vitamin D helps your body absorb the calcium you consume through your diet or as a supplement. We get vitamin D from certain foods (fortified milk, fish oils, egg yolks, liver) and from sunlight. The recommended daily intake of vitamin D is 600 IU (International units), although some experts advise higher amounts of vitamin D (800 IU or 1000IU) to correct or prevent low levels of vitamin D. Many calcium tablets also have vitamin D. Be sure to check this before taking more vitamin D. Do not take more than 800 IU per day unless your doctor prescribes it, since too much vitamin D may be harmful.

## Calcium Deficiency: Osteoporosis

Osteoporosis is a disease in which bones become weak and brittle. One factor that leads to osteoporosis is a lack of calcium in the diet. When calcium intake is less than what the body needs, calcium is taken from the bones. This weakens bones and can lead to bone fractures. This is most common in women over age 35, above all if they are no longer menstruating. White men and women are at greater risk than black men and women. Women who are below normal in weight can get osteoporosis more often than women who are obese. Other risk factors include cigarette smoking and an inactive lifestyle. Signs of osteoporosis include bone pain, fractures, loss of height, and shrinking of the jawbone. Osteoporosis isn't just a concern for women. After age 65 women **and men** tend to lose bone mass at the same rate.

Although there is no cure for osteoporosis, there are steps you can take to prevent or to slow its progress:

- Eat a balanced diet rich in calcium and vitamin D
- Take part in weight bearing exercise. Before starting any exercise program, consult with your healthcare provider.
- Maintain a healthy lifestyle without smoking or drinking too much alcohol.
- Get bone density testing and medicines when needed.

If you are a patient of UW Health and have more questions or if you wish to make an appointment, please contact one of the offices below.

Nutrition Clinic  
University Station  
2880 University Avenue  
Madison, WI 53705  
(608) 263-5012

Nutrition Clinic  
UW Health West Clinic  
451 Junction Road  
Madison, WI 53717  
(608) 265-7526

Nutrition Clinic  
UW Health East Clinic  
5249 East Terrace Drive  
Madison, WI 53718  
(608) 265-0963