

## Get Your Calcium-Rich Foods

The Dietary Guidelines for Americans 2005 recommends that most adults and children daily consume at least 3 cups of fat-free or low-fat milk, or equivalent amounts of yogurt or cheese. This is in combination with a healthy diet and is based on getting 2,000 calories. Children aged two to eight need 2 cups per day.



Milk is represented by the blue band on MyPyramid, USDA's latest food guide, which shows that foods from all groups are needed daily for good health.

Consuming more fat-free or low-fat milk products, along with vegetables, fruits, and whole grains has important health benefits for most Americans. Diets that include milk products tend to have a higher overall nutritional quality.

If you do not or can not consume milk, choose lactose-free and lactose-reduced products, or eat other foods that are good calcium sources. Other sources of calcium include: canned fish with bones, nuts, fruits, vegetables, dried beans, rice beverages, molasses, some leafy greens, calcium-fortified foods and beverages, and soy products, including tempeh. The amount of calcium that the body can absorb from these foods varies.

A calcium-rich diet that includes milk and milk products is important to bone health. Children and adolescents need calcium to build their peak bone mass, which is reached by age twenty. According to

the National Osteoporosis Foundation, building strong bones during childhood and adolescence can be the best defense against developing osteoporosis, or brittle bone disease, later in life. Bone mass must be maintained in later years as well.

### FOODS IN THE MILK GROUP

The milk group includes all fluid milk products and foods made from milk that retain their calcium content, such as yogurt and cheese.

**Milk:** all fluid milk—fat-free (skim), low-fat (1%), reduced fat (2%) and whole milk; flavored milks, such as chocolate and strawberry; lactose-reduced milks and lactose-free milks.

**Milk-based desserts:** puddings made with milk, frozen yogurt, ice milk and ice cream.

**Cheese:** hard natural cheeses (cheddar, mozzarella, Swiss, parmesan), soft cheeses (ricotta and cottage cheese) and processed cheeses (American).

**Yogurt:** all yogurt—fat-free, low-fat, reduced fat, and whole milk yogurt.

Note: Cream, cream cheese, and butter contain little or no calcium and are not part of this food group.

### NUTRIENTS IN MILK

**Calcium** builds stronger bones and teeth and maintains bone mass. It also helps muscles and nerves to work properly, helps the blood to clot and may help to reduce weight gain. Milk and milk products are the primary source of calcium in American diets, providing over 70% of our calcium.

**Potassium** may reduce the risk of high blood pressure and heart disease. Yogurt and fluid milk are two milk products that are good sources.

**Vitamin D** is like a key that unlocks the door and lets the body absorb calcium. It maintains proper levels of calcium and phosphorous, which helps to build and maintain bones. Good sources are: sunlight, vitamin D-fortified milk, vitamin D-fortified ready-to-eat breakfast cereals and vitamin D-fortified yogurt. It is not necessary to consume vitamin D and calcium at the same time to get the benefit of enhanced calcium absorption.

**Protein** builds, repairs and maintains all body tissues, and provides energy when carbohydrates and fats are in short supply.

### HOW MUCH IS NEEDED?

The recommended daily amount of food needed from the milk group depends on age. Older children and adults need 3 cups every day, while children ages two through eight need 2 cups.

These amounts are appropriate for people who get less than 30 minutes per day of moderate physical activity, beyond normal daily activities. If you are more physically active, you may be able to consume more while staying within your calorie needs.

The table below lists the milligrams of calcium recommended for every age level. Pregnant women and nursing mothers' needs are the same as others in their age level.

| Daily Recommendations for Calcium |              |
|-----------------------------------|--------------|
| Age                               | Calcium (mg) |
| 0 to 6 months                     | 210          |
| 7 to 12 months                    | 270          |
| 1 to 3 years                      | 500          |
| 4 to 8 years                      | 800          |
| 9 to 18 years                     | 1,300*       |
| 19 to 50 years                    | 1,000        |
| Over 50 years                     | 1,200        |

\*Growth spurt

Source: The 2004 Surgeon General's Report on Bone Health and Osteoporosis: What It Means to You.

<http://www.surgeongeneral.gov/library/bonehealth>

Most calcium should come from the diet. Since most Americans do not get enough calcium, however, calcium fortified foods and calcium supplements can help meet their daily need.

### WHAT COUNTS AS A CUP OF MILK?

1 cup = 1 cup milk or yogurt

1½ ounces of hard natural cheese (cheddar, mozzarella, Swiss, parmesan)

2 ounces of processed cheese (American)

Other amounts that count as a cup of milk:

**Milk\*** 1 half-pint container, ½ cup evaporated milk

**Yogurt\*** 1 regular container (8 fluid ounces)

**Cheese** (choose low-fat most often) ⅓ cup shredded cheese, ½ cup ricotta cheese, 2 cups cottage cheese

**Milk-based desserts\*** 1 cup pudding made with milk, 1 cup frozen yogurt, 1½ cups ice cream

\*Choose fat-free or low-fat most often.

Some milk products are commonly available in other portion sizes that do not count as one serving, or one cup of milk. For example, one small container of yogurt is only 6 ounces, or ¾ cup milk. One scoop of ice cream is equal to ⅓ cup milk.

### CHOOSE FAT-FREE OR LOW-FAT

The Dietary Guidelines recommend that no more than 10% of total calories come from saturated fat. Therefore, focus on fat-free or low-fat versions of your favorite foods from the milk group, because they contain fewer calories and little or no solid fat. Yogurt and skim milk are excellent fat-free or low-fat choices that are rich sources of calcium. Choose light versions of yogurt that do not contain much added sugars.

Other low-fat and fat-free milk group choices include: fat-free sour cream, fat-free half-n-half, and low-fat ice cream. There are many other fat-free and low-fat milk products that contain no added sugars, making them consistent with an overall healthy diet, also. Cream cheese, cream, and butter, which are all made from milk, are not part of this food group, because they contain little or no calcium and are high in fat.

Choosing foods from the milk group that are high in saturated fats and cholesterol can raise LDL ("bad") cholesterol levels in the blood and increase your risk for coronary heart disease. Whole milk, many cheeses, and products made from them are high in saturated fat, so limit the amount you eat.

The following chart explains how the fat content is determined in the different types of fluid milk.

| Type of Milk     | Amount of Fat*               |
|------------------|------------------------------|
| Whole            | 3.25 % fat by weight         |
| Reduced-fat (2%) | 25% less fat than whole milk |
| Low-fat (1%)     | 50% less fat than whole milk |
| Fat-free (skim)  | 0.5% or less fat by weight   |

\*Amount of fat by weight, not calories.

Here is a comparison in the amount of calories, calcium, fat and cholesterol in various milk types.

| Comparison of Different Milk Types* |          |              |         |                  |
|-------------------------------------|----------|--------------|---------|------------------|
| Milk                                | Calories | Calcium (mg) | Fat (g) | Cholesterol (mg) |
| <b>Regular (8 oz.)</b>              |          |              |         |                  |
| fat-free                            | 85       | 300          | <1      | 5                |
| 1% low-fat                          | 100      | 300          | 3       | 10               |
| 2% reduced-fat                      | 120      | 295          | 5       | 20               |
| whole                               | 150      | 290          | 8       | 35               |
| buttermilk                          | 100      | 285          | 2       | 10               |
| <b>Chocolate (8 oz.)</b>            |          |              |         |                  |
| 1% low-fat                          | 160      | 285          | 2       | 5                |
| 2% reduced-fat                      | 180      | 285          | 5       | 15               |
| whole                               | 210      | 280          | 8       | 30               |
| <b>Evaporated (4 oz.)</b>           |          |              |         |                  |
| fat-free                            | 100      | 370          | <1      | 5                |
| whole                               | 170      | 330          | 10      | 35               |

\*Figures are rounded.

Source: National Dairy Council.

Do not avoid milk and milk products because of concerns that these foods lead to weight gain. Studies show that low-fat milk products may provide weight loss benefits to adults, and children who consume low-fat milk, cheese and yogurt have less body fat.

### EASY WAYS TO GET YOUR CALCIUM

- Drink milk with meals and at snack time. Remember to make it fat-free or low-fat milk! Both have as much calcium as whole milk but fewer calories.
- Make instant hot cocoa with milk rather than with water.
- Use low-fat or fat-free evaporated milk in coffee and in recipes that use milk.

- Add non-fat dry milk to puddings, breads, muffins, homemade cookies, soups, or even a glass of milk. Recommended amounts are:
  - 2 Tbsps. dry milk sifted into each cup of flour in cakes, cookies or breads.
  - 3 Tbsps. dry milk per cup of fluid milk in puddings or cocoa.
  - 4 Tbsps. dry milk to each cup of hot cereal before cooking.
- Use fat-free or low-fat milk in oatmeal, hot cereals, and cream-type soups.
- Add fat-free or low-fat cheese to casseroles, soups, stews, vegetables, breakfast bagels, toast and sandwiches. Fat-free cheeses do not work well in some recipes, so you may need to experiment with various types of cheeses to find out which one works best.
- Enjoy fat-free or low-fat yogurt straight from the carton, in dips, smoothies, baked potatoes, and with fruits.
- Use flavored yogurt as a fruit salad dressing.
- Substitute plain yogurt for some or all of the sour cream in vegetable salad dressings.
- For dessert, drink a delicious smoothie made in a blender with frozen fruit and skim milk or calcium fortified juice.
- Serve milk-based desserts: frozen yogurt, puddings, tapioca, custard and ice cream.
- Make a nutritious fruit parfait dessert by layering non fat light yogurt with fresh fruit and low-fat granola. Nuts and a sprig of mint are optional.
- Make chocolate ice pop by freezing low-fat chocolate milk in ice cube trays. Place popsicle sticks into trays before freezing.
- Some fat-free puddings are good sources of calcium. Check the Nutrition Facts label and the ingredient list for calcium content.

### NUTRITION TIDBITS

- Consume calcium sources throughout the day instead of all at one time. The body can absorb about 500 mg of calcium at one time from food and/or calcium supplements.
- An 8-ounce glass of milk, whether skim, 1%, 2%, whole or chocolate, contains 280 to 300 mg of calcium. Yogurt and calcium fortified orange juice contain the same amount of calcium.

- Do you usually drink whole milk? Switching to fat-free (skim) milk will decrease your calorie and fat intake while you continue to get the same critical nutrients from milk.
- When you switch from whole milk to fat-free (skim) milk, allow your taste buds to adjust gradually. Try reduced fat (2%), then progress to low-fat (1%) and finally to fat-free (skim) milk. Another way to make the transition easier is to mix some fat-free milk with whole milk, gradually using less and less whole milk.
- Choose fat-free or low-fat yogurt and cheese. The fat in higher fat products counts as part of the allowance for discretionary calories. Added sugars in sweetened milk products such as flavored milk, yogurt, drinkable yogurt, and desserts, count as part of the discretionary calorie allowance, also.
- There are 52 mg of calcium in one tablespoon of dry milk, so add it to baked goods, puddings, soups and cereals often to increase their calcium content. Two to four tablespoons can be added to most recipes.
- Try to get all or most of your calcium from your diet rather than from supplements.
- When ordering cappuccinos and lattes, have them prepared with fat-free (skim) milk.
- Craving some chocolate? Drink a glass of low-fat or fat-free chocolate milk. Low-fat has only 160 calories, 2.5 grams of fat but about 30% of daily calcium requirements.
- Top baked potatoes with plain non-fat yogurt, which is similar to sour cream in flavor and adds a lot of calcium.
- Make lasagna with fat-free ricotta cheese.
- Use food labels to identify good sources of calcium and vitamin D.

## LACTOSE INTOLERANCE

Some people lack the enzyme lactase, which is needed to digest lactose, or milk sugar. This condition, lactose intolerance, does not involve the immune system like a food allergy does. Symptoms of lactose intolerance include gas, bloating, abdominal pain, diarrhea and nausea. The severity of symptoms is often related to how much lactose is consumed and when it is consumed in relation to other foods.

If you have lactose intolerance, the most reliable way to get the health benefits of milk is to choose milk products that are either lactose-free or lactose-reduced (70% less lactose). Always start with small amounts of milk products containing lactose and gradually increase the portion size to determine your tolerance level. Another solution is to take the enzyme lactase before consuming a milk product or along with it.

Try dairy foods other than milk. Many hard cheeses (cheddar, Swiss, Parmesan) have less lactose than milk. Yogurt made with live, active bacteria is also a good choice.

Eat lactose-containing foods and beverages in combination with a meal or solid foods rather than alone. This slows the release of lactose into the digestive tract, making it easier to digest.

If you choose not to eat dairy products, then consume other calcium-rich foods and beverages that contain all the nutrients provided by the milk group. Calcium fortified foods and beverages provide calcium, but they may not contain the other nutrients found in milk. Use food labels to identify good sources of calcium, or refer to the chart below.

| Non-Dairy Sources of Calcium   | Amount  | Calcium (mg) |
|--------------------------------|---------|--------------|
| Calcium-fortified soymilk      | 1 cup   | 350          |
| Calcium-fortified orange juice | 1 cup   | 350          |
| Oatmeal made with milk         | 1 cup   | 300          |
| Sardines with bones (no salt)  | 3 oz.   | 325          |
| Calcium-fortified dry cereal   | 1 oz.   | 200-300      |
| Collards, cooked               | 1 cup   | 266          |
| Spinach                        | 1 cup   | 291          |
| Salmon with bones (no salt)    | 3 oz.   | 180          |
| Blackstrap molasses            | 1 Tbsp. | 172          |
| Turnip greens, cooked          | ½ cup   | 124          |
| Ocean perch                    | 3 oz.   | 116          |
| Cowpeas, cooked                | ½ cup   | 106          |
| Tofu with calcium              | 3 oz.   | 30-100       |
| Kale, cooked                   | 1 cup   | 90           |
| Almonds                        | 1 oz.   | 72           |
| Broccoli, cooked               | 1 cup   | 71           |
| Shrimp                         | 3 oz.   | 45           |
| Other veggies and most fruit   | 1 cup   | 10-60        |

For additional foods, refer to the USDA National Nutrient Database for Standard Reference, Release 18.

## OSTEOPOROSIS

Bones are like a bank account in which calcium and other minerals are deposited to make them strong. When the body needs calcium elsewhere, it withdraws calcium from the bones. Depositing enough calcium during childhood and adolescence helps build strong bones, and withdrawals will not leave you with weak bones later in life.

When you are older, you withdraw more calcium from bones than you deposit. If more calcium is withdrawn from the bones than is deposited, the bones become weaker and very brittle, resulting in a condition called osteoporosis. This leads to an increased risk of bone fractures, typically in the wrist, hip and spine.

People who are at greatest risk for osteoporosis include those who are:

- female.
- white/Caucasian/Asian.
- post menopausal women.
- older adults.
- small in body size.
- eating a diet low in calcium.
- physically inactive.
- cigarette smokers.
- drinking too much alcohol.
- using certain medications to treat chronic medical conditions. Examples: high blood cholesterol, under-active thyroid, rheumatoid arthritis. Discuss this with your doctor. Never stop or cut back on your medication on your own.

The incidence of osteoporosis is likely to rise as baby boomers age. To reduce your risk:

1. Consume adequate calcium and vitamin D.
2. Get daily exposure to sunlight so your skin can make vitamin D. Expose arms or legs for fifteen minutes, without sunscreen. If exposed longer, apply sunscreen. Since the skin makes less vitamin D after age 50 when the need for it increases, vitamin D must then come from milk and/or a supplement.

3. Maintain an active lifestyle that includes regular weight-bearing exercises, strength-training exercises, and stretching.
4. Have bone mineral density testing at the right time in life. When necessary, take appropriate medications to slow bone loss or to build bones.
5. Avoid habits that can cause early onset of bone loss: consuming too little calcium, not exercising, strict dieting, smoking and drinking too much alcohol.

For more information, visit the National Osteoporosis Foundation web site at <http://www.nof.org/osteoporosis/stats.htm>

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