CHILDHOOD AND ADOLESCENT NUTRITION

Why Milk Matters Now

For Children and Teens

MILK MATTERS

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

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Good nutrition is important for good health and can help protect against many diseases later in life. However, one important nutrient many kids and teens don't get enough of is calcium, found mainly in milk and dairy products and in dark green, leafy vegetables and foods with added calcium. Calcium is a nutrient that helps to make bones and teeth strong and healthy. It is used in building bone mass and also helps to reduce the risk of bone fracture due to osteoporosis, a condition where bones become fragile and can break easily.

How Do We Build Strong Bones?

Our bodies continually remove and replace small amounts of calcium from our bones. If your body removes more calcium then it replaces, your bones will become weaker and have a greater chance of breaking. But by getting the recommended amount of calcium, you can help your bones stay strong.

Calcium needs are highest during the childhood and teen years, because bones are growing fast then and calcium must be added into bones to make them strong. Most of the calcium that makes bones strong is added by the age of 17. By eating and drinking foods that are good sources of calcium, children and teens can help store this important nutrient in their bones for later in life. As adults, we lose calcium. The more calcium that is in the bones when loss begins, the less likely it is that bones will become fragile and fracture easily.

How Much Calcium Do Kids Need?

Nutrition guidelines recommend that children ages 4-8 get 800 milligrams (mg) of calcium per day, or about 2 servings of Milk Group foods daily. Teens and young adults, ages 9-18, need more calcium because their bones are growing more than at other times of life. They should have 1,300 mg of calcium per day, or about 3 servings of Milk Group foods daily. One 8-ounce glass of milk has about 300 mg of calcium, so just a few glasses can go a long way towards getting the calcium needed each day.

Recommended Amount of Calcium

Age	Calcium Recommended Each Day (in milligrams)
1-3 years	500 mg
4-8 years	800 mg
9-18 years	1,300 mg

Source: Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride, The National Academy of Sciences, 1997

How Do I Know How Much Calcium a Food Has?

Food labels can tell you how much calcium is in one serving of a food. Look at the % Daily Value (DV) next to the calcium number on the food label.

- Try to eat and drink foods with 20% or more DV for calcium (like milk). These foods are good sources of calcium.
- Foods with less than 5% DV for calcium only give you a small amount of what you need each day.
- For most adults, 100% DV = 1,000 mg of calcium. But children ages 9-18 need extra calcium. This age group needs 1,300 mg (130 DV), an additional 300 mg of calcium each day. That means an extra 8-ounce glass of milk or extra servings of another calcium-rich food.

How Much Calcium Do Kids Get?

Unfortunately, most children and teens do not meet calcium recommendations. National nutrition surveys show that only 19% of teen girls and 52% of teen boys get the recommended amounts of calcium.
In fact, teenage girls only average about 740 mg of calcium per day, well below the amount needed for their normal growth and development.

Low-Fat Milk

Nutrition Facts
Serving Size 8 fl. oz. (236g)
Servings Per Container 8

Amount Per Serving	
Calories 100	**Calories from Fat** 20
	% Daily Value
Total Fat 2.5g	4%
Saturated Fat 1.5g	8%
Cholesterol 10g	3%
Sodium 130mg	5%
Total Carbohydrate 12g	4%
Dietary Fiber 0g	0%
Sugars 11g	
Protein 8g	

Vitamin A	10%	* Vitamin C	4%
Calcium	30%	* Vitamin D	25%

* Percent Daily Values are based on a 2,000 calorie diet.

Where is the Calcium?

Low-fat and fat-free milk and dairy products, such as cheese and yogurt, are excellent sources of calcium. In addition to having lots of calcium, milk and dairy products provide other essential nutrients, all necessary for good bone health and development. These include phosphorus, magnesium, and added vitamin D in milk. Other sources of calcium include dark green, leafy vegetables, such as kale, and foods like broccoli, soybeans, tofu processed with calcium, orange juice with calcium added, and other calcium-fortified foods.

What Kind of Milk is Best?

Fat-free (skim) and low-fat (1%) milk and dairy products are excellent choices because they make it easy to get enough calcium without adding a lot of extra fat and saturated fat to the diet. For example, a glass of whole milk contributes 25% ($^1/_4$) of your total saturated fat for the day, while a glass of low-fat milk contributes only 7.5% of the total saturated fat. There are now a variety of milk products available — including different levels of fat and even different flavors — but an 8-oz glass (1 cup) of any variety still contains about 300 mg of calcium.

However, babies under one year old should drink only breast milk or iron-fortified formula. Children ages one to two should drink whole milk rather than reduced fat varieties because some fats are necessary for their early growth and development. Between ages two and five, parents should gradually transition children to low-fat or fat-free milk. Beginning at age 2, children should get most of their calories from grain products; fruits; vegetables; low-fat dairy products; and beans, lean meat and poultry, fish, or nuts.

Can Everyone Drink Milk?

Lactose, the sugar found in milk and dairy foods, can cause abdominal discomfort in some people. A person with lactose intolerance has trouble digesting lactose. Lactose intolerance is not common among infants and young children, but can occur in older children, adolescents, and adults. It is more common among people of African-American, Hispanic, Asian, and American Indian and Alaskan Native descent.

For people with lactose intolerance, milk is often better digested when drunk in small amounts and when combined with other foods, such as cereal with milk. In addition, many people can eat dairy foods such as cheeses or yogurt, which cause fewer symptoms. Recent studies also show that many people who are lactose intolerant can drink 2-3 8-oz glasses of milk each day without getting any symptoms. Also, lactose-free milk products are now available in most stores and there are pills and drops that make it easier to digest milk and dairy products that have lactose in them.

Some people, however, are allergic to milk and dairy products and should not eat them. For those people who cannot have any milk, calcium can come from non-dairy sources like dark green, leafy vegetables such as kale, or foods like broccoli, lime-treated tortillas, and tofu processed with calcium. There are also foods with added calcium, such as calcium-fortified orange juice, soy beverages, and some cereals. Getting calcium from food is recommended, but calcium supplements can also be a way to add necessary calcium.

Calcium Crisis: Who Gets Enough?

Age	% Meeting Recommendations for Calcium
Females 2-8 years	79%
Females 9-19 years	19%
Males 2-8 years	89%
Males 9-19 years	52%

Source: Health and Nutrition Examination Survey (NHANES), CDC, NCHS, 1988-1994

Type of Milk	Saturated Fat grams (g) PER 8-OUNCE GLASS	% Daily Value of Saturated Fat ON FOOD LABEL
Fat-free (skim)	0 g	0%
Low-fat (1%)	1.5 g	8%
Reduced fat (2%)	3 g	15%
Whole	5 g	25%
All have about 300 mg of calcium		

Solving the Calcium Crunch

Getting enough calcium is important for building strong bones and ensuring future health. Here are three things you can do to help get enough calcium and keep bones and teeth strong.

1. Think of ways to incorporate milk and other calcium rich foods into meals and snacks. For example, top a baked potato with broccoli and low-fat cheese, or dunk baby carrots into low-fat yogurt dip.
2. Keep foods with calcium in the house and put them on the table during meals and snacks.
3. Keep drinking milk throughout your life, and be sure to eat and drink other foods with calcium. These foods should be an important part of the diet your whole life long.

Where Can I Get More Information?

For more information on milk and calcium, or to view and order free materials, check out the Milk Matters Campaign website at: http://www.nichd.nih.gov/milkmatters.

To learn more about nutrition, diet recommendations, and food labels, look at these sites:

- Food Guide Pyramid — http://www.usda.gov/cnpp/pyramid2.htm
- Dietary Guidelines for Americans — http://www.usda.gov/cnpp/Pubs/DG2000/Index.htm
- Guidance on How to Understand and Use the Nutrition Facts Panel on Food Labels — http://vm.cfsan.fda.gov/~dms/foodlab.html
- Report of the 1994 NIH Consensus Development Conference on Optimal Calcium Intake: http://odp.od.nih.gov/consensus/cons/097/097_intro.htm
- To order other NICHD materials or to speak with an information specialist, contact the NICHD Information Clearinghouse, P.O. Box 3006, Rockville, MD 20847, 1-800-370-2943.

Ideas for High Calcium Meals and Snacks

BREAKFAST

- Pour low-fat or fat-free milk over your breakfast cereal
- Have a cup of yogurt
- Drink a glass of calcium-fortified orange juice
- Add low-fat milk instead of water to oatmeal and hot cereal

LUNCH

- Add low-fat or fat-free milk instead of water to creamed soups, such as tomato
- Add cheese to a sandwich or a soft corn tortilla
- Have a glass of milk instead of soda
- Make mini-pizzas or macaroni and cheese

SNACK

- Try flavored milk like chocolate or strawberry
- Have a frozen yogurt
- Try some pudding made with low-fat milk
- Make a "smoothie" with fruit, ice, and milk
- Dip fruits and vegetables into yogurt

DINNER

- Make a salad with dark green, leafy vegetables, such as spinach
- Serve broccoli or cooked, dry beans as a side dish
- Top salads, soups and stews with low-fat shredded cheese
- Add tofu made with calcium to stir fry and other dishes
- Try rice pudding made with low-fat milk for dessert

Sources include: American Dietetic Association's Complete Food and Nutrition Guide, 1996

FOOD	SERVING SIZE	AMOUNT OF CALCIUM (in milligrams)*	% DAILY VALUE ON FOOD LABEL
Plain yogurt, low-fat or fat-free	1 cup	450	45%
American cheese	2 oz	350	35%
Ricotta cheese, part skim	1/2 cup	340	34%
Fruit yogurt, low-fat or fat-free	1 cup	315	31%
Milk (fat-free, low-fat, or whole)	1 cup	300	30%
Orange juice with added calcium	1 cup	300	30%
Tofu (made with calcium)	1/2 cup	260	26%
Soy beverage with added calcium	1 cup	250-300	25-30%
Cheese pizza	1 slice	220	22%
Cheddar cheese	1 oz	200	20%
Mozarrella cheese, part skim	1 oz	180	18%
Macaroni & cheese	1/2 cup	180	18%
Salmon, canned with bones	3 oz	180	18%
White beans, boiled	1 cup	160	16%
Corn tortillas (lime treated)	3 tortillas	130	13%
Frozen yogurt (fat-free, lowfat, or whole)	1/2 cup	105	10%
Soybeans, cooked	1/2 cup	90	9%
Broccoli, cooked or fresh	1 cup	90	9%
Almonds, dry roasted	4 oz	80	8%
Bok choy, cooked or fresh	1/2 cup	80	8%
Kale, cooked	1/2 cup	45	4%

*Calcium content varies depending on ingredients for many foods. Label values are rounded.

Sources: American Dietetic Association's Complete Food and Nutrition Guide, by Roberta Larson Duff, Chronimed Publishing, 1996; Bowes and Church's Food Values of Portions Commonly Used, revised by Jean A.T. Pennington, Lippincott-Raven Publishers, 1998.

NICHD/Milk Matters Clearinghouse
P.O. Box 3006
Rockville, MD 20847
Phone: 1-800-370-2943
Fax: 301-496-7101

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