

OSTEOPOROSIS

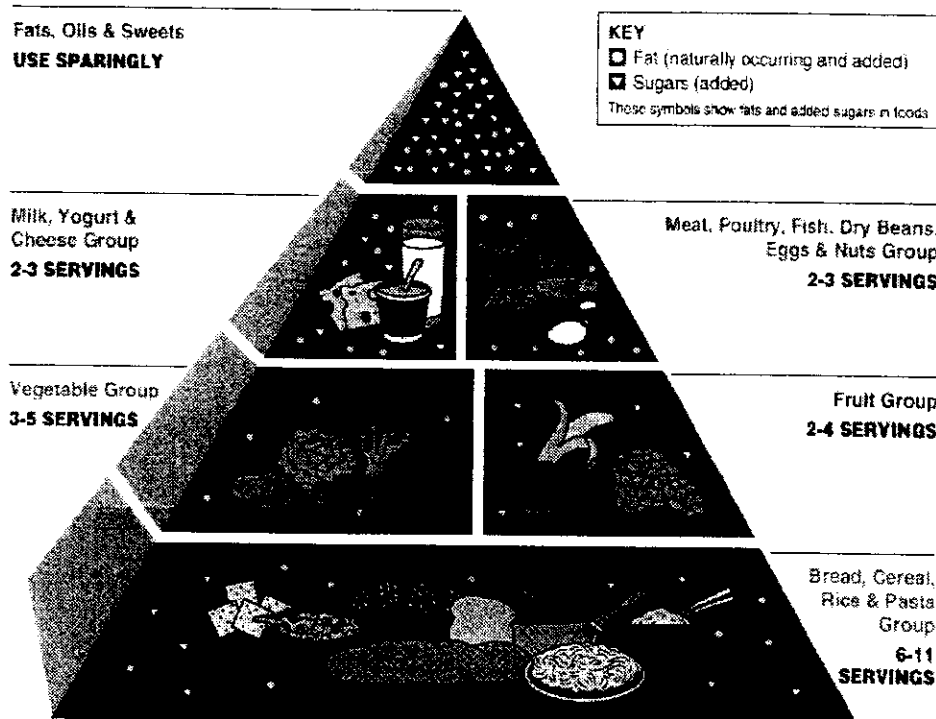
NUTRITION FOR HEALTHY BONES

The Food Guide Pyramid shows:

- How many servings of each food group you need to eat.
- That all the food groups are part of a healthy diet.

What builds strong bones?

- Eating a variety of foods.
- Calcium and vitamin D.
- Regular physical activity – especially weight-bearing activities.
- Vitamin C, vitamin K and certain minerals (like magnesium and potassium) may be involved in bone formation. All these nutrients can be found in fruits, vegetables and whole grains.

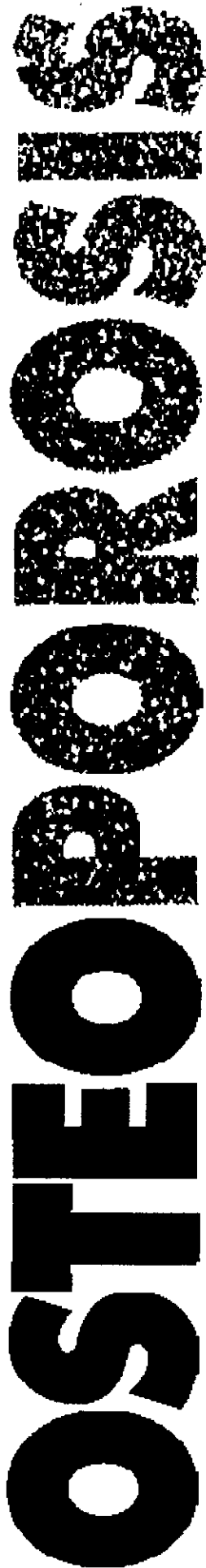


Serving Sizes

- 1 slice of bread
- 1/2 cup of cooked rice, pasta, or cereal
- 1 ounce of ready-to-eat (cold) cereal
- 1/2 cup chopped raw or cooked vegetables
- 1 cup leafy raw vegetables
- 1 piece of fruit
- 3/4 cup (6 ounces) of fruit or vegetable juice
- 1/2 cup canned or cooked fruit
- 1 cup milk or yogurt
- 1 1/2 ounces of cheese
- 2 or 3 ounces of cooked lean meat, fish, or poultry
- 1/2 cup of cooked beans
- 1 egg
- 2 Tbsp of peanut butter

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New Hampshire Osteoporosis Prevention and Education Program
 NH Department of Health and Human Services • Office of Community and Public Health
 Bureau of Nutrition and Health Promotion
 6 Hazen Drive • Concord, NH 03301-6527
 800-852-3345 Ext. 4830 • 603-271-4830



BOOST YOUR CALCIUM INTAKE

Breakfast

- Make hot cereals with milk or fortified soy milk instead of water
- Try a festive fruit smoothie made in the blender with ice, fruit, and yogurt or milk or fortified soy milk

Lunch and dinner

- Make cream soups with milk or evaporated milk
- Add sea vegetables to soup or a stir-fry
- Add low-fat cheese to sandwiches
- Do a stir-fry with:
 - High-calcium vegetables
 - Legumes
 - Calcium-processed tofu
- Top pasta with low fat cottage cheese or part-skim ricotta
- Saute greens in olive oil and garlic
- Try grilling marinated calcium-processed tofu
- Toss up a salad with high-calcium greens, sliced almonds, legumes and yogurt dressing

Snacks

- Try yogurt as a dip for vegetables, fruit or berries
- Eat puddings made with milk or fortified soy milk
- Blend up a peanut butter smoothie with peanut butter, banana, and yogurt or milk or fortified soy milk

Toppings

- Consider adding a little grated Parmesan cheese as a topping
- Add low fat cheese as a topping
- Try yogurt as a topping for stir-fried vegetables, baked potatoes or fruit salad

Baked goods

- Use buttermilk in place of oil – to save the fat calories and add calcium
- Add powdered milk to any baked goods – for example, pancake or waffle batter, quick breads or muffins, or yeast breads

Beverages

- Drink calcium-fortified juices and milk
- Mix calcium-fortified orange juice with seltzer water for a fizzy beverage
- Have a latte instead of your cup of coffee
- Comfort yourself with a mug of hot chocolate made with milk

If you are lactose intolerant

- Try lactose-free milk, cottage cheese or ice cream
- Remember that yogurt and cheeses can often be tolerated

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How much calcium do you need?

Use this chart to find out how much calcium you and your family need every day.

Age Group	Calcium Needed (milligrams/day)
Birth – 6 months	400
6 months – 1 year	600
1-5 years	800
6-10 years	800-1200
11-24 years	1200-1500
25-50 years	1000
Pregnant and nursing	1200-1500
51-65 years (women on HRT and men)	1000
Postmenopausal women not on HRT	1500
Over 65 years	1500
Established osteoporosis regardless of age	1500

NIH Consensus Statement, Vol.12, No.4, 1994, Optimal Calcium Intake, National Institutes of Health.

Reading food labels

Food labels can help you know how much calcium you eat. The adult Reference Daily Intake (RDI) for calcium is 1000 milligrams (mg). So, when a food label says that one serving provides 10% of the Daily Value, that means it has 100 mg of calcium.

Where can I find calcium in food?

- All age groups need at least two daily servings from the milk, yogurt, and cheese group.
- Dark greens are often listed as “next best” sources of calcium. However, you need to eat two to four servings of dark greens to get as much calcium as in 1 cup of milk.
- Soy products such as tofu or soybeans provide calcium, however, soy milk has little calcium unless it is fortified.
- Many Asian fish sauces have about 50 mg calcium in a 3-ounce serving.
- The list on the next page will help you plan your calcium intake each day.

Are there foods that remove calcium from my body?

You may lose calcium if you eat or drink a lot of:

- Meat or other foods high in animal protein
- High-sodium foods such as ham, hot dogs, luncheon meats; canned vegetable juices and sauces; salty snacks
- Coffee
- Carbonated beverages like soda

Note: Eating or drinking too little protein may lead to reduced bone – particularly in the elderly.

What if you cannot drink milk?

Some people cannot digest milk products. When they eat dairy foods they develop gas, bloating, cramps, or diarrhea. The enzyme lactase digests the lactose in milk and milk products. Some people’s bodies make less lactase as they age. If you have problems digesting lactose, remember to avoid calcium lactate supplements. If you are lactose intolerant, you may still be able to eat or drink:

- Cheese or milk if you eat it with a meal.
- Hard cheeses like cheddar and Swiss.
- Yogurt with an active culture.
- Reduced-lactose milk or cheese.
- Milk and cheeses that are treated with enzymes (lactase).
- Lactase chewable tablets that you eat before eating milk products.

Facts to know about vitamin D

- The skin makes vitamin D when it is exposed to the sun.
- Sunscreen and clothing block the ultraviolet light that the skin needs to make vitamin D.
- As we age, our skin produces less vitamin D.
- In New Hampshire between October and March, the sunlight is too weak for your skin to make vitamin D. To get enough vitamin D during the winter, you need to rely on food or vitamin supplements.
- Milk and some cereals are fortified with vitamin D. Check the Nutrition Information labels on those foods.

Are you getting enough vitamin D?

Vitamin D is measured in international units (IU). The Dietary Reference Intakes (DRIs) for vitamin D are:

Age Group	Vitamin D Needed (IU per day)
0-50 years	200
51-70 years	400
71+ years	600

Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride, Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, Food and Nutrition Board, Institute of Medicine.

If you do not get enough vitamin D:

- Your body can not absorb calcium.
- Bone loss may speed up.
- Your risk for fractures may increase.

I need:

_____ milligrams of calcium every day

_____ international units of Vitamin D every day

How much calcium is in your food?

Milk, Yogurt, and Cheese	Serving Size	mg per serving
Cheese, American	1 oz.	174
Cheese, Brick	1 oz.	191
Cheese, Cheddar	1 oz.	204
Cheese, Colby	1 oz.	194
Cheese, Cottage, creamed	1/2 cup	63
Cheese, Cream or Neufchatel	2 Tbsp.	23
Cheese, Feta	1 oz.	140
Cheese, Monterey	1 oz.	212
Cheese, Mozzarella	1 oz.	147
Cheese, Mozzarella, low moisture	1 oz.	163
Cheese, Mozzarella, part skim	1 oz.	183
Cheese, Mozzarella, part-skim, low-moisture	1 oz.	207
Cheese, Muenster	1 oz.	203
Cheese, Parmesan, grated	1 Tbsp.	69
Cheese, Parmesan, hard	1 oz.	336
Cheese, Ricotta, part skim	1/2 cup	337
Cheese, Ricotta, whole milk	1/2 cup	257
Cheese, Swiss	1 oz.	272
Cocoa, from mix, water added	8 oz.	91
Eggnog	8 oz.	330
Ice cream, hard, vanilla	1/2 cup	85
Ice cream, soft serve, French vanilla	1/2 cup	113
Ice milk, vanilla	1/2 cup	92
Ice milk, soft serve, vanilla	1/2 cup	138
Instant breakfast with whole milk	1 cup	470
Milk, buttermilk	8 oz.	285
Milk, chocolate, 1% or 2%	8 oz.	285
Milk, dried, skim (powdered)	1/4 cup	377
Milk, evaporated, whole, canned	4 oz.	330
Milk, goat, whole	8 oz.	325
Milk, whole (4%)	8 oz.	290
Milk, 0%, 1%, 2%	8 oz.	300
Milk, protein-fortified, 1% or 2%	8 oz.	350
Milkshake, thick, chocolate	1 avg.	320
Milkshake, thick, vanilla	1 avg.	345
Pudding (made with milk)	1/2 cup	150
Yogurt, fruit flavored, lowfat	8 oz.	300
Yogurt, plain, lowfat	8 oz.	400
Yogurt, plain, skim	8 oz.	450
Yogurt, plain, whole milk	8 oz.	274

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts	Serving Size	mg per serving
Beans, kidney, cooked	½ cup	35
Beans, lima, cooked	½ cup	25
Lentils, cooked	½ cup	20
Beef, fish, or poultry	3 oz.	10
Egg	1	25
Nuts, Almonds, roasted	1 oz.	80
Nuts, Brazil	8 med.	50
Nuts, Peanuts, raw	1 oz.	15
Oysters	6 med.	38
Salmon, canned (with bones)	3 oz.	180
Sardines (with bones)	2	92
Soy milk, fortified	8 oz.	Variable
Soy milk, unfortified	8 oz.	10
Tofu	1" x 2½" square	100
Vegetable		
Broccoli, cooked	½ cup	36
Greens, cooked, collard	½ cup	174
Greens, cooked, mustard	½ cup	76
Greens, cooked, turnip	½ cup	99
Kale, cooked	½ cup	47
Okra	½ cup	77
Onion, raw	½ cup	16
Potato, baked	1 med.	20
Rutabaga, cooked	½ cup	41
Squash, butternut, baked	½ cup	42
Tomato	1 med.	6
Fruit		
Apple	1 med.	10
Orange	1 med.	52
Orange juice	6 oz.	27
Orange juice, calcium-fortified	6 oz.	200
Papaya	1 med.	73
Bread, Cereal, Rice and Pasta		
Bread, corn, with enriched cornmeal	1 slice	90
Bread, white	1 slice	27
Bread, whole wheat	1 slice	20
Rice, enriched, cooked	½ cup	10
Rice milk, fortified	8 oz.	Variable
Other		
Molasses, blackstrap	1 Tbsp.	172
Macaroni and cheese	1 cup	362
Pizza, cheese	1/8 pie	220

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DO YOU NEED A CALCIUM SUPPLEMENT?

Should I take a calcium supplement?

If you do not get enough calcium in the foods you eat, calcium supplements may help boost your intake. Ask your health care provider if you need a supplement and how much. Here are the daily recommendations by age group:

Age Group	Calcium Needed (milligrams/day)
Birth – 6 months	400
6 months – 1 year	600
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Which supplements are best?

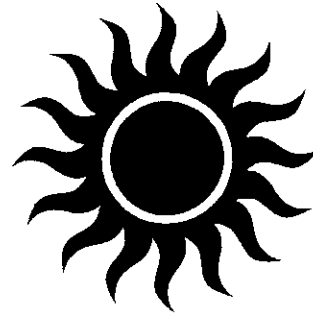
Although calcium comes in many forms, three major types can work well. If you have questions, the expert to ask is your pharmacist.

- **Calcium carbonate** (examples: Tums, Oscal)
 - This type has the highest percent of calcium.
 - Relatively well absorbed. Is better absorbed with meals.
 - Most people absorb it well when they take it with food or after eating. It may cause gas or bowel problems in some people.
 - May be more concentrated so you need fewer tablets per day.
 - Low in lead.
 - Inexpensive.
- **Calcium citrate** (example: Citracal)
 - It contains the lowest percent of calcium of the three types.
 - It's the easiest to absorb as it does not require much stomach acid. Therefore, it may be a better choice for older adults who have reduced stomach acid. If you have questions, ask your health care provider.
 - Often added to breakfast products and juices.
 - You may have to take more tablets per day to get the same effect.
 - It is also the highest priced of the three.

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- **Calcium phosphate** (example: Posture)
 - Most people absorb it well, and do not experience gas or bowel problems.
 - It does not have to be taken with food.
 - Costs more than calcium carbonate, but less than calcium citrate.



Am I getting too much calcium?

You can get too much calcium. If you take more than 2500 mg calcium per day, you could develop:

- Kidney stones
- High blood calcium
- Poor absorption of iron, zinc, or magnesium



What do I need to know when shopping for a supplement?

- Avoid supplements made with bone meal or dolomite. They may contain toxic metals like lead and mercury.
- Consider a combination supplement with vitamin D added.
- If you are lactose intolerant, do not buy calcium lactate supplements.
- Some supplements never dissolve in the stomach because they are made with fillers. If you do not buy a chewable supplement, look for the letters "USP" on the label, so you know that your tablets will dissolve in your stomach.

What can I do to make the supplements work well?

- Take small doses throughout the day – no more than 500 milligrams at a time.
- Take your doses at the same times each day, such as when you finish meals or brush your teeth.
- Take your supplement with a meal.
- Chew tablets completely before you swallow.
- Take your calcium supplement and any iron supplement four hours apart to improve absorption of both.
- Ask your health care provider if any drugs you take can reduce the amount of calcium you absorb or retain.

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If you do not get enough vitamin D:

- Your body cannot absorb calcium.
- Bone loss may speed up.
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Am I getting too much vitamin D?

Too much vitamin D is not good for you. People who get more than 2000 IU of vitamin D per day, may develop high blood calcium.