

Eating Well to Prevent or Treat Osteoporosis

Calcium and vitamin D are very important for strong, healthy, bones and teeth. When we don't get enough calcium, vitamin D or other nutrients, osteoporosis may develop. Osteoporosis is when bones become weak. Weak bones break (fracture) more easily, especially the bones of the hips, spine, wrists, pelvis, and ribs. This handout is for for adults at risk of or diagnosed with osteoporosis.

Vitamin D

- Vitamin D helps the body to:
 - absorb and use calcium from our diet and/or calcium supplements
 - increase muscle strength (which may reduce your risk of falling)
 - increase bone strength (which reduces your risk of breaking a bone)

Try to get enough vitamin D from food and supplements.

Tips to increase your vitamin D intake

- Include 2 to 3 servings of milk and/or fortified soy or rice beverage every day. One serving is equal to 1 cup (250 mL).
- Enjoy fish 2 times a week. Choose fish such as char, herring, mackerel, salmon, sardines, or trout.
- Try new recipes with foods high in vitamin D. For example, try poaching, baking, or barbequing your favourite kinds of fish.
- Our skin makes some vitamin D from sunlight. However, Canadians make little or no vitamin D from October to March. It may not be safe to get all the vitamin D you need from the sun.

Try to get as much vitamin D from foods as you can. The table below lists food sources of vitamin D.

Food sources of vitamin D (IU = International Units)

Best sources More than 200 IU per serving	Good sources About 100 IU per serving	Sources About 50 to 100 IU per serving
Fish, 2.5 oz (75 g) Herring Salmon	Milk, lactose-reduced milk, and buttermilk, fortified with vitamin D, 1 cup (250 mL) Fortified soy, rice or almond beverage, 1 cup (250 mL) Skim milk powder, 1/3 cup (75 mL) Fish, 2.5 oz (75 g) Sardines Halibut	Margarine, 1 Tbsp (15 mL) Eggs, 2 Nutrition supplement drinks such as Boost® or Ensure®, 1 cup (250 mL) Mackerel, 2.5 oz (75 g)

Nutrient amounts from Canadian Nutrient File, 2010

Vitamin D supplements

Vitamin D supplements are recommended for all adults.

Age	Recommended vitamin D intake from supplements	My healthcare provider suggests
19 to 50 years	400 to 1000 IU per day	_____ IU vitamin D per day from supplements
Over 50 years	800 to 2000 IU per day	_____ IU vitamin D per day from supplements

Osteoporosis Canada, 2010

Look for a supplement that has **vitamin D₃**. Vitamin D₃ is the best choice for most people. The label on your supplement bottle will say what form of vitamin D it has. Choose vitamin D₂ if you are looking for a vegan form of vitamin D.

Types of vitamin D supplements:

- tablets, chewables, or drops in doses of 400 to 1000 IU
- multivitamin supplements usually have between 400 and 800 IU of vitamin D
- combined calcium and vitamin D supplements usually have between 200 and 1000 IU vitamin D

Add up your vitamin D intake

Fill in the blanks below to see how much vitamin D you get every day.

My vitamin D intake from food is about _____ IU/day (Use the table of food sources of vitamin D on page 1.)	_____ IU/day	Does your total amount of vitamin D match what your healthcare provider suggests? If not, you may need to increase the amount of vitamin D you take in from food and/or supplements.
My vitamin D intake from supplements is _____ IU/day (Use the label on your supplement bottle.)	_____ IU/day	
Total = _____ IU/day		
Caution: Do not take more than 2000 IU of vitamin D per day from supplements unless your healthcare provider tells you to take more.		

Osteoporosis Canada, 2010

Calcium

Getting enough calcium helps prevent broken bones. Make sure you get the right amount of calcium everyday.

Daily calcium recommendations from food and supplements combined.	Age	Milligrams (mg)
	19 to 50 years	1000
	Over 50 years	1200

Osteoporosis Canada, 2010

Tips to increase your calcium intake

- Drink milk at meals and snack times. Once in a while, add a small amount of chocolate, strawberry, or vanilla flavouring.
- Get more calcium from your beverages and foods by adding skim milk powder.
- Have cheese as a snack or in a meal. The firmer the cheese, the more calcium is in it. To cut down on fat, choose cheeses that are lower in fat. These have the same amount of calcium as regular fat cheeses.
- Add canned salmon with the bones to soups, salads, or casseroles. Make salmon sandwiches often.

Try to get as much calcium from foods as you can. Food sources of calcium have other important nutrients in them not found in supplements, like protein, fibre, and antioxidants. The table below lists food sources of calcium.

Food sources of calcium (mg = milligrams)

Best sources About 300 mg of calcium	Good sources About 200 mg of calcium	Sources About 100 mg of calcium
Milk, lactose-reduced milk, and buttermilk, 1 cup (250 mL)	Sardines, canned with bones, 4	Almonds, Brazil nuts, ¼ cup (60 mL)
Milk, evaporated, undiluted, ½ cup (125 mL)	Salmon, canned with bones, 3.5 oz (105 g)	White beans, navy beans, and soybeans, ½ cup (125 mL)
Skim milk powder, ⅓ cup (75 mL)	Dried silver fish, ½ oz (15 g)	Ice cream, ½ cup (125 mL)
Fortified soy, rice or almond beverage, 1 cup (250 mL)	Soup made with milk, 1 cup (250 mL)	Frozen yogurt, ½ cup (125 mL)
Nutrition supplement drink such as Boost® or Ensure®, 1 cup (250 mL)	Fruit-flavoured yogurt, ¾ cup (175 mL)	Cooked bok choy, ½ cup (125 mL)
Hard cheese (cheddar, mozzarella), 1½ oz (50 g)	Blackstrap molasses, 1 Tbsp (15 mL)	Skim milk powder, 1 Tbsp (15 mL)
Ricotta cheese, ½ cup (125 mL)	Pudding made with milk, ½ cup (125 mL)	Cottage cheese, ¾ cup (175 mL)
Tofu made with calcium, 3.5 oz (105 g)		Roasted soybeans, ¼ cup (60 mL)
Plain yogurt, ¾ cup (175 mL)		Calcium-fortified orange juice, ½ cup (125 mL)
		Sea cucumber, 1 oz (30 g)
		Seaweed, 1 cup (250 mL)
		Dried day lily, 1 oz (30 g)

Nutrient amounts from Canadian Nutrient File, 2010

Do I need a calcium supplement?

You may need a calcium supplement if:

- you do not include any milk products in your diet or
- you do not get enough calcium from food every day (fill out the table below to see if you meet your calcium needs) or
- your healthcare provider recommends you take a calcium supplement

Calcium supplements

If you need to take a calcium supplement, look at the amount of **elemental** calcium in one dose. Elemental calcium is the calcium that your body is able to absorb and use. To absorb more calcium, limit your supplement doses to 500 mg or less of elemental calcium at one time.

Types of calcium supplements:

- Calcium carbonate: Take this form of calcium with meals so that it is better absorbed by your body.
- Calcium citrate: You may tolerate this form of calcium better. It can be taken at any time. Calcium citrate is often suggested for older adults.
- Calcium with magnesium: You do not need magnesium supplements for bone health. Your healthcare provider may suggest magnesium supplements for another reason. Too much magnesium can cause diarrhea and leg cramps. Before you take a calcium supplement with magnesium, talk to your doctor, pharmacist, or dietitian.

Calcium affects how some medicine works. Your pharmacist can tell you the best times of the day to take your medicine and supplements.

Add up your calcium intake

Fill in the blanks below to see how much calcium you get every day.

My calcium intake from food is about _____ mg/day (Use the table of food sources of calcium on page 3.)	_____ mg/day	Does your total amount of calcium match what is recommended for your age on page 3? If not, you may need to increase the amount of calcium you take in from food and/or supplements.
My calcium intake from supplements is _____ mg/day (Use the label on your supplement bottle.)	_____ mg/day	
Total = _____ mg/day		
Caution: Limit the total calcium you get from food and supplements to no more than: <ul style="list-style-type: none">• 2500 mg per day for adults 19 to 50 years• 2000 mg per day for adults over 50 years		

Institute of Medicine, 2010

Other factors that affect bone health

Other diet and lifestyle choices can affect bone health:

- Too much **caffeine, alcohol, and salt** can harm your bones.
 - Keep coffee intake to no more than 2–3 cups per day. Caffeine is also found in coffee-based drinks, colas, tea, and energy drinks.
 - Alcohol should be limited to 1 drink for women and 2 drinks for men per day. One drink is 12 oz (355 mL) of beer, 5 oz (150 mL) of wine, or 1½ oz (45 mL) of liquor.
 - Limit salt (sodium) intake to less than 2300 mg per day. Don't add salt to cooking or at the table. Use less processed and packaged foods, and read labels to find foods lower in sodium.
- Maintaining your **muscle mass** and staying at a **healthy weight** are important for bone health. Follow Canada's Food Guide and eat from all four food groups each day. If you are losing weight without trying or you have a poor appetite, talk to your healthcare provider.
- **Being active every day** is important for healthy bones. The best types of activities for building and maintaining strong bones are **weight-bearing exercises** (walking, dancing, stair climbing) and **strength training** (weight lifting and exercises using resistance bands). If you have osteoporosis, talk to your doctor before starting a physical activity program.

To learn more

Visit these websites to learn more about bone health and nutrition:

- Dietitians of Canada: www.dietitians.ca
- Osteoporosis Canada: www.osteoporosis.ca
- International Osteoporosis Foundation: www.iofbonehealth.org
- Nutrient Value of Some Common Foods: www.hc-sc.gc.ca

My action plan for bone health

There may be things that you already do to help your bone health.

Habits I will keep:

- _____
- _____
- _____
- _____
- _____
- _____

What are the habits that you want to start or stop or change?

Habits I will start, stop, or change:

- _____

- _____

Use a lifestyle journal

People who use a journal succeed at making changes more often.

- For a few days write down:
 - what you eat and drink and how much
 - any problems or feelings about the changes you are making
- Review your progress:
 - What are you doing well?
 - What do you still need to work on?
 - Do you need help to meet your goals?

Plans to meet with my dietitian or other healthcare provider

- _____

Questions to ask my dietitian or other healthcare provider

- _____

- _____

- _____
