

Osteoporosis and Fracture Prevention

A Guide for Patients

What is osteoporosis?

Osteoporosis is a disease that makes your bones thin and brittle. This makes them more likely to break. Anyone can develop osteoporosis, but it is more common in older women. As many as half of all women and a quarter of men older than 50 will break a bone due to a minor fall or trauma. These fractures can be disabling and may make it hard to live independently.

Some of the risk factors include:

- being small and thin
- having a family history of a broken hip
- taking certain medicines like glucocorticoids (e.g., prednisone)
- being a white or Asian woman
- having low bone mass or bone density
- smoking now or in the past
- having more than 3 drinks of alcohol a day
- early menopause
- previous fracture from minimal trauma
- rheumatoid arthritis

Tests for osteoporosis?

Your primary healthcare provider may ask you about your risk factors for osteoporosis and for falls. They can use this information to help understand your risk of breaking your bones. Your primary healthcare provider may send you to have a scan of your bones. This is called a bone mineral density test (BMD). The primary healthcare provider can use all this information to decide if treatment is needed, and if so, what the best treatment for you is. Not everyone needs a BMD test as a standard test because of aging or going through menopause.

Lifestyle advice to reduce the chance of fractures

Nutrition: Help reduce fracture risk by having enough daily calcium, vitamin D and protein.

Exercise: Regular weight-bearing and muscle-strengthening reduce the risk of falls and fractures by improving agility, strength, posture, and balance, as well as general health benefit.

Smoking: Tobacco products are harmful to the skeleton as well as to overall health.

Alcohol: Three or more drinks per day are harmful to bone health and increase the risk of falling.

Vitamin D - How much do I need?

Patients with osteoporosis need at least 800 - 2,000 International Units (IU) of vitamin D₃ per day. Getting too much vitamin D is rare. Talk to your primary healthcare provider or pharmacist about how much vitamin D is right for you. Testing the level of vitamin D in your blood is NOT needed.

Where can I get vitamin D?

Most people need supplements to get enough vitamin D. Vitamin D is made in the skin when it is exposed to sunlight. But, being in the sun without sunscreen for more than 15 minutes can be harmful to the skin. In Canada it is hard to get enough vitamin D from sunlight during the fall, winter and spring.

Vitamin D is in very few foods. It can be found in some fish, cod-liver oil, eggs (a little) or mushrooms (small amount). In Canada, some vitamin D is added to orange juice, cow, soy, and rice milk. To

get enough vitamin D from milk, you would need to drink 10 cups a day. Further information about vitamin D in foods can be found in the BC Guidelines *Vitamin D Patient Guide* at www.bcguidelines.ca or from some of the information sources listed below.

Calcium

It is important to get enough calcium through your whole life to get the strongest bones you can, and to keep them healthy. Adults under 50 years need 1000 mg of elemental calcium a day, adults 50 years and over and those who have gone through menopause before age 50 need 1200 mg of elemental calcium a day. Many foods are rich in calcium. Below are a few examples and more information can be found from the resources listed at the end of this guide. Talk to your primary health care provider or pharmacist about how much calcium is right for you.

Examples of foods that contain calcium	
Type of Food	Estimated Elemental Calcium Content (Approximate Content)
Canned salmon (with bones)	181 mg per 85 g, or 3 oz
Sardines in oil, with bones	324 mg per 85 g, or 3 oz
Turnip greens (boiled)	99 mg per 120 ml, or ½ cup
Broccoli (raw)	21 mg per 120 ml, or ½ cup
Cow's milk (skim, 2%, homo)	291-302 mg per 240 ml, or 1 cup
Soy or rice milk	80 IU per 240 ml, or 1 cup
Some orange juices	100 IU per 240 ml, or 1 cup
Tofu (firm, made with calcium sulfate)	204 mg per 120 ml, or ½ cup
Yogurt (plain, low-fat)	415 mg per 228 g, or 8 oz
Yogurt (fruit, low-fat)	245–384 mg per 228 g, or 8 oz
Cheddar cheese	306 mg per 42.5 g, or 1.5 oz
Cottage cheese (1% milk fat)	138 mg per 240 ml, or 1 cup
Ice cream (vanilla)	21 mg per 120 ml, or ½ cup

Reminders about calcium supplements:

- The amount of calcium our bodies can actually use is called elemental calcium.
- Calcium comes in different forms, read labels carefully for the amount (mg) of elemental calcium in a supplement.
- There are different types of calcium in supplements; two of the most common forms are:
 - Calcium carbonate
 - has the most calcium that your body can absorb
 - take it with food to help your body absorb it better
 - Calcium citrate
 - has less calcium that your body can absorb
 - is easier to digest
 - generally costs more
 - usually needs more tablets to be taken per day than calcium carbonate
- Get the most absorption of any calcium supplement by dividing doses (i.e. do not take more than 500 mg of elemental calcium at one time).
- Calcium can interact with certain medicines (such as iron supplements or antibiotics); be sure to talk to your pharmacist when you start a new supplement or medicine.
- Drink lots of water when you are taking calcium supplements.

Medications

If they are right for you, your doctor may prescribe a medicine to help prevent bone fractures. There are different kinds of medicines that help put off the loss of bone, lower the risk of breaking bones, and even build bone. Enough calcium and vitamin D should always be taken while taking any medicine for osteoporosis. To get the most help from these medicines, you need to take them just as your primary healthcare provider prescribes. Always talk to your pharmacist about the best way to take your medicines.

For example: a group of medicines called bisphosphonates are commonly prescribed for osteoporosis and most are taken by mouth. These medicines must be taken very carefully.

They should be:

- Taken on an empty stomach with a full glass of plain water.
- Taken at least 30 minutes before the first food or drink (other than plain water) and/or any other medication of the day.
- Swallowed whole.

They should not be:

- Crushed, sucked, or chewed.
- Taken at the same time as food, other medications, calcium, or any beverage other than plain water. Do not eat for 2 hours before and at least 30 minutes after taking the medicine.
- Taken at bedtime or before rising for the day.
- After taking, you must not lie down for at least 30 minutes.

More information

- HealthLink BC – dietician and other health information for British Columbians telephone 8-1-1 or www.healthlinkbc.ca
- Osteoporosis Canada – information about osteoporosis and treatment telephone Toll-free 1-800-463-6842 (English), 1-800-977-1778 (French) or www.osteoporosis.ca
- BC Health and Seniors Information Line 1-800-465-4911, Victoria (250) 952-1742 and website www.seniorsbc.ca/healthcare
- Public Health Agency of Canada – tools and resources to prevent falls www.phac-aspc.gc.ca/seniors-aines/publications/public/injury-blessure/pathways-voie/section2-eng.php
- BC Guidelines: *Vitamin D Patient Guide* for information on vitamin D intake and *Frailty in the Elderly* for information on all prevention. Both found at: www.bcguidelines.ca
- BC Dairy Foundation Calcium Calculator - <http://bcdairyfoundation.ca/interactive/calcium-calculator>
- Health Canada, Canada Food Guide - www.hc-sc.gc.ca/fn-an/food-guide-aliment
- Dietician, Osteoporosis Program, BC Women's Hospital – Vancouver (604) 875-2267 www.bcwomens.ca
- BC Ministry of Health, Seniors' Falls Prevention www.health.gov.bc.ca/prevention/fallprevention.html