



Breast Cancer Treatment & Your Bone Health

Did you know?

Bone loss is a common side effect of breast cancer treatment

Bone loss can lead to weak bones, which are more likely to break or fracture

IN THIS GUIDE

Find out how to keep your bones healthy during and after cancer treatment

Exercise to make your bones strong

Get enough calcium & vitamin D

Quit smoking

Drink less alcohol

Keep your physical environment safe

Take your medication as prescribed

Keep track of your bone health

Talk to your care team

What should I know about my bone health?

1 Bone constantly builds and breaks down

It is a living tissue that is continuously breaking down and rebuilding. This cycle helps to keep bones strong and supportive.

2 Bone breakdown and rebuilding change with age

In young adults, bones are more dense because there is more bone rebuilding. With age, bones become less dense because there is more bone breakdown.

3 Estrogen protects against too much bone breakdown

The estrogen hormone is important for the health of female reproductive organs. Estrogen also protects bones from breaking down too much. A few years before menopause, estrogen levels begin to fall. After menopause, estrogen levels are naturally low. As such, there is less protection against bone breakdown and bones begin to lose density.

4 Too much bone breakdown can cause bone loss, weaker bones, and osteoporosis

It is normal to experience some bone breakdown with ageing and menopause. Too much breakdown means that the bones can become brittle and “porous” (osteoporosis) with have higher possibility of breaking. Osteoporosis is more likely to happen after menopause.

What is the link between breast cancer & bone health?

Some types of treatment for breast cancer lower estrogen levels

Estrogen-receptor positive breast cancers are treated with drugs or surgical procedures that block estrogen from attaching to breast cancer cells or reduce the body's estrogen levels. Some treatment types can cause a fast drop in estrogen and more bone breakdown in a shorter time. Women receiving treatment for breast cancer can lose bone more rapidly than women entering menopause naturally.

Women treated for breast cancer are more likely to have osteoporosis or weaker bones that can break easily

TREATMENT TYPES THAT CAN AFFECT ESTROGEN LEVELS AND LEAD TO WEAKER BONES

- 1 Aromatase inhibitors
Anastrozole (Arimidex)
Exemestane (Aromasin)
Letrozole (Femara)
- 2 Gonadotropin-releasing hormone agonists
Goserelin (Zoladex)
Triptorelin (Trelstar)
Leuprorelin (Lupron, Eligard)
- 3 Tamoxifen, when taken before menopause
- 4 Ovary removal
- 5 Chemotherapy treatment that causes menopausal symptoms (such as irregular or no menstrual period) or early menopause

Comparing normal bone to osteoporotic bone



This image compares the inside of a normal bone (top) and an osteoporotic bone (bottom). Note the difference in bone density

Image source: Osteoporosis (<http://blausen.com/?Topic=6776>). Blausen Medical. Retrieved on 25 January 2016.

What can I do to keep my bones healthy?

These recommendations are based on guidelines from Osteoporosis Canada, the American Cancer Society, and the American Society of Clinical Oncology.

1 Exercise to make your bones stronger

Why?

Some exercises send signals to encourage bone rebuilding. Exercise also improves balance and may prevent falls and fractures.

How much exercise do I need?

Aim for

30
minutes each day

150
minutes each week

Combine sessions of aerobic weight-bearing, strengthening, posture, and balance exercises throughout the day to keep your bones healthy and strong.

What kinds of exercises should I do?

Aerobic weight-bearing exercises

These encourage bone rebuilding by working bones against gravity

At least 5 days a week

EXAMPLES

- Brisk walking
- Light jogging
- Stair climbing
- Dancing



Strengthening exercises

These encourage bone rebuilding by activating muscles around bones

At least 2 days a week

EXAMPLES

- Lifting weights
- Using own body weight
- Exercises with elastic bands
- Pilates



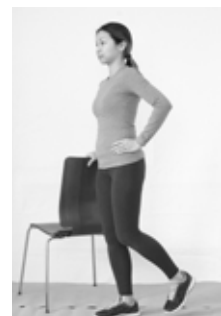
Balance exercises

These prevent falls and fractures

At least 2 days a week

EXAMPLES

- Tai chi
- Yoga
- Standing on one foot
- Posture exercises



Exercise guidelines continued on next page

Is exercising safe during breast cancer treatment?

Yes! In addition to keeping your bones healthy, exercise is safe and can help manage some other treatment side effects.

BEFORE STARTING A NEW EXERCISE PROGRAM

Talk to your health care team (such as your doctor, nurse, or physiotherapist) before starting

You should seek exercise guidance, especially if you have:

- Lymphedema (swelling in the arm after breast cancer treatment)
- Osteoporosis
- Metastatic cancer (cancer that has spread outside of the breast, particularly the bones)
- Difficulty moving your arm or shoulder 2 months after breast surgery or radiation therapy

ARM AND SHOULDER EXERCISES

After surgery and/or radiation therapy for breast cancer, there are exercises that can help you regain movement in your arm and shoulder. These can be downloaded through our website.

If you find it hard to move your arm and shoulder 2 months after breast surgery or radiation therapy, a physiotherapist can help you.

EXERCISE SAFETY TIPS

- Start at your own pace and progress slowly
- Listen to your body and rest when needed
- Talk to your care team if you have any changes or discomforts such as pain, swelling, or dizziness when exercising

Who can help me start an exercise program?

1 Physiotherapists

Physiotherapists use exercise interventions to prevent or manage injury and chronic ailments. They can help you create a personalized exercise plan to strengthen your bones and muscles. A physiotherapist can help you regain mobility in your arm after treatment.

2 Lymphedema therapist

Lymphedema therapists treat and manage lymphedema. If you think you have lymphedema, modifications to your exercise plan may be needed. Lymphedema can be observed as swelling in the arm on the side that surgery and/or radiation was performed.

3 Kinesiologists

Kinesiologists are specialists in exercise prescription, helping people get and stay fit. They can guide and support you by providing a plan to reach your exercise goals.

FOR MORE INFORMATION

Download our “Get Started with Bone-Healthy Exercise” guide. If you’ve recently had breast surgery or radiation therapy, download our “Recommended Exercises” guides. See also the Resources section at the end of this document.

What can I do to keep my bones healthy?

2 Get enough calcium & vitamin D

Why?

Calcium is a mineral that is essential for many bodily functions. It is absorbed in the intestine and stored in the bones. Calcium is needed to keep the bones hard and strong. Vitamin D is needed for calcium absorption.

How much do I need?

Based on Osteoporosis Canada:

WOMEN: 50 YEARS AND OLDER

Calcium	1200 mg daily
Vitamin D	800-2000 IU daily

WOMEN: LESS THAN 50 YEARS

Calcium	1000 mg daily
Vitamin D	400-1000 IU daily

These are daily recommendations of total amounts from food and supplements together. Generally, you can only absorb about 300-500 mg of calcium at once, so space out your calcium intake throughout the day.

What are good sources of calcium?

Some food products, like yoghurt, naturally contain good amounts of calcium. Some food products, such as soy milk, have calcium added to them. Calcium content can be found in the “Nutrition Facts” table on food packaging. It is presented as a percentage (%) of a daily value of 1000 mg of calcium. For example, a cup of milk that gives 30% of the daily value contains 300 mg of calcium.

CALCIUM IN FOODS

Food	Serving	Calcium
Milk	1 cup	300 mg
Yoghurt	175 ml	332 mg
Soy milk	1 cup	300 mg
Almonds	1/4 cup	93 mg
Broccoli	1/2 cup	33 mg

Download our “Get Started with Bone-Healthy Nutrition” guide for a more complete table of calcium-containing foods.

Should I take supplements?

The best way to get calcium is through food as your body will absorb it better. When this is not possible, supplements are a good alternative. Calcium can interfere with some medications. Talk to your doctor or pharmacist before taking any supplements.

What are good sources of vitamin D?

You can get vitamin D in three ways: from some skin exposure to sun, your diet, and supplements.

VITAMIN D IN FOODS

Food	Serving	Vit D
Salmon	75 g	320-700 IU
Milk	1 cup	100 IU
Cod liver oil	1 tsp	425 IU

Should I take supplements?

Not many foods contain vitamin D. In Canadian winter months, your skin won't get enough sun exposure to make the vitamin D you need. Osteoporosis Canada recommends that Canadians take a vitamin D supplement regularly. Choose a supplement that contains vitamin D3. Vitamin D3 is more effective than vitamin D2.

WHO CAN HELP ME?

Dietitians can help you understand your calcium and vitamin D needs. Pharmacists can help you choose supplements that are right for you. For more information, see the Resources section at the end of this document.

What can I do to keep my bones healthy?

3 Quit smoking

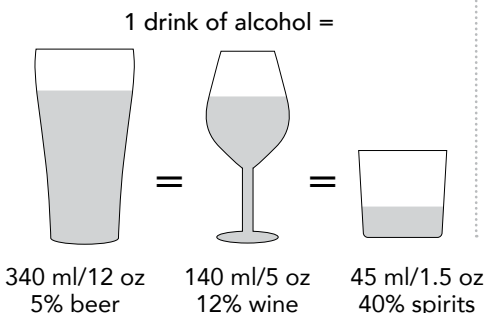
Why?

Smoking affects bone health in many ways. It causes more bone breakdown and affects bone rebuilding. Smoking damages blood vessels and the blood supply needed to keep bones healthy. It also increases the risk of second cancers.

4 Drink less alcohol

Why?

Drinking too much alcohol can affect the way that calcium is absorbed and stored in the bones. It can interfere with the bone rebuilding process. In addition, alcohol can affect your balance and increase your risk of falling and breaking a bone. Drinking too much alcohol can also increase the risk of a cancer recurrence. Breast cancer survivors are advised to limit alcohol to 1 drink per day.



WHO CAN HELP ME?

Support is available to help you quit smoking or cut down on alcohol. See the **Resources** section at the end of this document.

5 Take your osteoporosis medication as prescribed

You may already be taking medication to prevent or treat bone loss or osteoporosis. In this case, you should continue taking this medication according to instructions from your pharmacist and/or doctor.

NOT SURE YOU ARE TAKING YOUR MEDICATION PROPERLY?

There are many different medications that are used to treat osteoporosis. Some have very specific instructions, like staying upright for 30 minutes after taking the medication. If you are not sure about how to take your medication, please talk to your doctor, pharmacist, or nurse.

6 Keep your physical environment safe

Why?

Preventing falls, prevents fractures.

How can I be safer?

Keep your daily activities and home safe. Cancer and its treatment can be physically and mentally demanding. On days that you are tired, prioritize and plan the activities you want to do. This is called energy conservation.

A home safety checklist is a great way to prevent accidents and falls at home. **Download our “Get Started with Home Safety” guide** for an example.

WHO CAN HELP ME?

An occupational therapist can help you with energy conservation and home safety. For more information, see the **Resources** section at the end of this document.

What can I do to keep my bones healthy?

7 Keep track of your bone health

Ask questions!

Unfortunately, many people do not find out they have weak bones until they break a bone (fracture). You cannot feel osteoporosis, but you can feel a fracture.

The first step to healthier bones is to learn about your bone health. Talk to your care team. Use our “Breast & Bone Health Action Plan” to guide your conversation.

Find out about your risk factors and how your bone health may be affected by your treatment.

WHERE CAN I LEARN MORE ABOUT MY RISK FACTORS FOR OSTEOPOROSIS?

Try our interactive questionnaire or download our “Get Started with Learning about Your Risks for Osteoporosis” guide. For more information, see the Resource section at the end of this document.

How can I find out if my bone health was affected by my cancer treatment?

You may need to get a bone mineral density scan. Talk to your doctor about getting one. It is recommended that you get your bone mineral density checked if one or more of the following applies to you:

- You are taking an aromatase inhibitor*:
Anastrozole (*Arimidex*)
Exemestane (*Aromasin*)
Letrozole (*Femara*)
- You are taking a gonadotropin-releasing hormone agonist*:
Goserelin (*Zoladex*)
Triptorelin (*Trelstar*)
Leuprorelin (*Lupron, Eligard*)
- You are pre-menopausal and taking Tamoxifen*
- You are experiencing early menopause (before the age of 45) due to chemotherapy or surgical removal of ovaries*
- You are post-menopausal

* *In these situations, a bone mineral density scan should be repeated every 2 years.*

How do I know if I have broken a bone?

Bones can break after accidents such as falling or being hit by something. Sometimes, weaker bones can break during normal activities, without an accident.

COMMON SIGNS OF A BROKEN BONE

- pain
- swelling (bulging)
- deformity (different shape)
- redness

IF YOU THINK YOU HAVE A BROKEN BONE...

If you think you have a broken bone, seek medical help as soon as possible. Tell them if you have had cancer treatments that lower estrogen levels (e.g. tamoxifen or aromatase inhibitors).

Resources

Ready to include more bone-healthy exercise in your day?

- Download our “Get Started with Bone-Healthy Exercise” guide
- Try our “Exercise Program for the Prevention/Management of Osteoporosis
- If you have lymphedema, metastases, osteoporosis, or had recent surgery or cancer treatment, see a **physiotherapist** before starting a new exercise program
- Consult with a **lymphedema therapist** if you have or suspect that you have lymphedema. Go to the Lymphedema Association of Quebec website (info.lympho.ca) for more information
- Find a **kinesiologist** near you to help you start an exercise program: ask at your local gym or CLSC, or look on the Quebec Federation of Kinesiologists website (www.kinesiologue.com/annuaire – in French only)
- Contact your CLSC and enroll in the **STAND UP! program** to improve your leg strength and balance (for persons 65+ years)

Motivated to get enough calcium and vitamin D each day?

- Download our “Get Started with Bone-Healthy Nutrition” guide for a list of foods containing calcium and vitamin D
- Speak with a **dietician** to see if you are getting enough calcium and vitamin D through your diet and/or supplements: talk to your nurse or doctor about a referral, or look on the Dietitians of Canada website (www.dietitians.ca)
- Speak with your **doctor** before taking any supplements.
- Speak with your **pharmacist** for help in choosing the right calcium and vitamin D supplement
- If you are taking many medications, your pharmacist can help you plan a safe medication schedule

Want to quit smoking?

- Read more about coping with the challenges of quitting on the **I Quit Now website** (tobaccofreequebec.ca)
- Get professional and peer support to help you cut down on your smoking: call the **I Quit Now telephone hotline**: 1-866-527-7383 between Monday–Friday from 8:00 am to 9:00 pm

Resources continued on next page

Resources

Interested in cutting down on alcohol?

- Go to the Educ'alcool website (edualcool.qc.ca) for tips and information on alcohol moderation.
- If you need help to quit drinking alcohol, go to the **Alcohol Anonymous Quebec website** (aa-quebec.org) for more information on meetings and telephone helplines in your region.

Want to make your home environment safer and manage your energy better?

- Download our “Get Started with Home Safety” guide for suggestions on keeping your home safe
- Verify the safety of your home using a **home safety checklist** from the Public Health Agency of Canada **website** (www.phac-aspc.gc.ca)
- **An occupational therapist** can help you manage your energy better and ensure your home is safe: contact your CLSC to make an appointment

Interested in finding out more about your risks for osteoporosis?

- Try our interactive questionnaire or download our “Get Started with Learning about Your Risks for Osteoporosis” guide
- Go to the **Osteoporosis Canada website** (osteoporosis.ca)
- Go to the **International Osteoporosis Foundation website** (www.iofbonehealth.org)
- Talk to you care team about how your treatment may affect your bone health. Use our “**Breast & Bone Health Action Plan**” to help you keep track of your bone health

Disclaimer: This information should not be considered as medical advice. It is not to be used in place of a visit with a doctor, nurse, physiotherapist, or other healthcare professional. If you have questions about your individual medical situation, please consult with your healthcare professional.

References

1. Runowicz, CD et al (2016). “American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline.” *CA Cancer J Clin.* Jan;66(1):43-73.
2. Gralow, JR et al. (2013). “NCCN Task Force Report: Bone Health In Cancer Care.” *J Natl Compr Canc Netw* 11 Suppl 3: S1-50.
3. Rock, CL et al. (2012). “Nutrition and physical activity guidelines for cancer survivors.” *CA Cancer J Clin* 62(4): 243-274.
4. Papaioannou, A et al. (2010). “2010 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada: summary.” *CMAJ* 182(17): 1864-1873.



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The Quebec Breast Cancer Foundation is proud to promote bone health in women with breast cancer through financial support of the Breast & Bone Health Program.

What would you like to do now to improve your bone health?

To improve my bone health, I will:

- Include more bone-healthy exercises
- Get the calcium that I need
- Get the vitamin D that I need
- Learn about my risk factors for osteoporosis and fractures
- Talk to my doctor about getting a bone mineral density scan
- Other:

To reach my goal(s), I will do the following:

What _____

When _____

Where _____

How often _____

This is how sure I am that I will reach my goal(s):

0	1	2	3	4	5	6	7	8	9	10
Not sure at all		Somewhat sure					Very sure			

Some things that make reaching my goal(s) difficult:

Some things that make reaching my goal(s) easier:

www.breastandbonehealth.ca

