

OSTEOPOROSIS



Canadian
Physiotherapy
Association

Association
canadienne de
physiothérapie

Too Fit to Fracture:

Managing Osteoporosis through Exercise



Osteoporosis Canada

1-800-463-6842

www.osteoporosis.ca

Disclaimer: The information in this booklet is not meant to replace advice from your doctor. Are you new to exercise? Do you want to change your exercise program? First, speak to your healthcare provider or speak to a fitness professional who knows safe exercises for someone with osteoporosis.

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About this booklet

This booklet is for people with osteoporosis and for people who have had a fracture (broken bone) because of osteoporosis. This type of broken bone is called a fragility fracture.

Osteoporosis is a bone disease. Bones become porous and weak. Weakened bones are more likely to break. The most common breaks are in the wrist, shoulder, hip and spine (back).

Osteoporosis Canada

Osteoporosis Canada is a national charity. It helps people who have or who may develop osteoporosis. It provides information and many other services.

In this booklet, Osteoporosis Canada shows you ways to manage osteoporosis with exercise. You can find out how to start an exercise plan.

For more information about osteoporosis, go to: www.osteoporosis.ca

Bone Fit™ professionals

Osteoporosis Canada has a program called Bone Fit™. The program provides education and training to health and fitness professionals. They learn what exercises are safe and effective for people with osteoporosis. A Bone Fit™ professional can help you plan an exercise program.

Are there Bone Fit™ professionals in your area? You can check the Bone Fit™ website at: www.bonefit.ca/locator/

Osteoporosis can cause **fragility fractures**. The bone breaks easily because it is weak.

- A person might break a bone when they cough, sneeze, reach, lift or bend.
- A person might break a bone when they trip and fall.

Normal



Inside a normal bone

Osteoporosis



Inside a bone with osteoporosis

Osteoporosis Canada acknowledges the input and guidance from the Canadian Physiotherapy Association and the University of Waterloo

How active are you?

Read statements 1 to 6. Then, answer yes or no for each statement.

1. I do activities to increase muscle strength twice a week or more. For example, I lift weights or work with exercise bands. Yes No

2. Most days, I do activities that challenge my balance. For example, I do balance exercises, Tai Chi or dance. Yes No

3. On 5 days a week or more, I do physical activity for 20 to 30 minutes. My heart beats faster than when I do normal daily activities. Yes No

4. I do exercises to improve my posture every day. Yes No

5. I pay attention to my posture during the day. I try to avoid twisting or bending forward too much. Yes No

6. I make my exercises more difficult over time. I try to challenge myself. Yes No

Did you answer **no** to any of the statements? Think about adding exercises into your daily routine. You can get ideas in this booklet.

Did you answer **yes** to any of the statements? Good for you! Now, you can slowly increase how often, how long or how hard you do the activities. You can get ideas in this booklet.

What do strength exercises look like?

Here are some exercises where you work against resistance.

Do **squats** (see photo), **step-ups**, or **sit-to-stand exercises** for your legs and butt muscles.



Do **bow and arrow pulls** for your upper back and biceps (muscles in the front of your upper arm).



Choose an exercise, and learn to do the movement safely and correctly.

Each time you do the movement, it is called a **repetition (rep)**.

You often start with one **set** of 8 to 12 reps. Is it easy for you to finish 12 reps? Could you do a few more? Then, you can make the exercise a little harder.

Over time, you can do 2 or 3 sets. You often rest for 1 to 2 minutes between sets.

Do **wall pushups** for your chest and triceps (muscles in the back of your upper arm).



Do **heel raises** for your lower legs.



Do **sash exercises** for your shoulders, back and arms.



How hard should you work?

Everyone is different. So first make sure you can do the exercise safely.

After a few weeks, you can make the exercise a little harder. You want the last 2 or 3 reps to challenge you.

If you have had a spine fracture, focus on how to do the exercise safely. Try to work with a Bone Fit™ professional.

How can you increase bone and muscle strength over time?

You must make your exercise program more difficult week by week and month by month. This is called progression.

Here are some ways to progress your program:

- increase the number of reps up to 12
- increase the number of sets
- increase the resistance or make the exercise harder
- increase the number of exercises

Work with a Bone Fit™ professional

Try to work with someone who has training in the Bone Fit™ program. For example, a physical therapist or kinesiologist. They can:

- help you choose exercises
 - show you how to do the exercises correctly
 - help you make your exercise program more difficult over time
-

A **rep** (repetition) is each time you repeat an exercise movement.



Are you ready to begin an exercise plan? Research shows that it helps if you write down your plan. You will be more likely to continue to exercise.

Start your activity plan on the next page.

Start your plan

Start to write down your activity plan.
Use Worksheet A on page 24.

1. Pick at least 2 days for strength exercises.

For example, Tuesdays and Fridays.

2. Decide when you will exercise.

For example, at 10 a.m.

3. Add things that will remind you to exercise.

For example, holding my favourite tea cup in the morning.

4. Add ways to motivate yourself.

For example, I can hold my grandson.



My Activity Plan: Worksheet A

Start to fill out this worksheet as you read through the booklet.

Show your worksheet to your Bone Fit™ professional.

Weekly plan for:

June

(month)

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
What type of exercise will I do on each day?	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic
What time of day will I exercise?			strength at 10 a.m.			strength at 10 a.m.		
What will I use to remind me to exercise?			strength reminder: favourite tea cup			strength reminder: favourite tea cup		
What will motivate me to exercise?	I can hold my grandson.							

Part 3: How to do posture exercises



What are posture exercises?

When you do posture exercises, you pay attention to how the parts of your body line up with each other.



This photo shows good posture. The ear, shoulder, elbow, hip bone, knee and ankle line up.

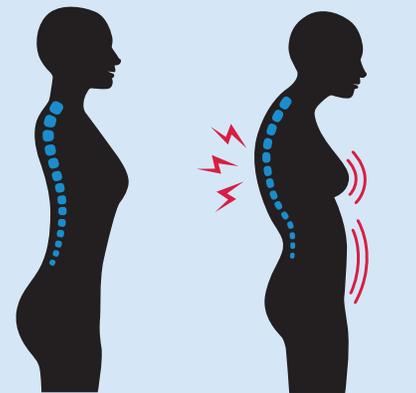


This photo shows good posture in a chair. You can use a small pillow to support your back.

Many people have some curve in their upper back. This is normal.

The upper back can curve more if you have fractures or weak back muscles.

Rounding of the back is called kyphosis (say: ki-FO-sus).



Poor posture when you bend means extra force (load) on your spine.

Why are posture exercises important?

Posture exercises work on the muscles in your back that help you stand straight. When these muscles get weak, you can develop a stooped posture (curve in your back). These muscles can help extend your back, improve your posture and protect your spine.

How often should you do posture exercises?

Do them every day.

How long should you do the exercises for?

Do them for 5 to 10 minutes every day. Also, pay attention to your posture during daily activities.

Remember to do posture exercises **every day**.



What type of posture exercises can you do?

First, learn to sit and stand with good posture. Use the tips below. Then, add the yoga pose. It helps to extend your spine.

To make the exercises harder, talk to a Bone Fit™ professional.

What tools do you need?

- mirror
- floor mat or firm mattress
- pillows (if needed)

Practise standing and sitting with good posture. Look at yourself in a mirror.

Standing posture

Balance your weight evenly on both feet. Gently pull the belly in.

Look straight ahead. Gently tuck in your chin. Pull your breastbone up slightly.



Sitting posture

Put your feet flat on the floor. Sit up straight. Gently tuck in your chin. Pull your breastbone up slightly.

Use a support for your lower back. For example, a pillow or a chair with back support.



Do a simple yoga pose called Shavasana (say: sha-VAH-suh-na).

Lie flat on your back on a firm mattress or floor mat. Place your arms on the floor with the palms up. Your legs are straight.

If straight legs are uncomfortable, put a pillow under your knees or bend your knees (see photo).



You should use a pillow under your head only if your head cannot reach the bed or floor (see photo).

Lie in this pose for 5 to 10 minutes. Focus on your breath.

Imagine your collarbones are wings. Spread your wings slightly but don't pull your shoulders back.

Add posture exercises to your plan

Go to page 24 and add posture exercises to Worksheet A.

1. Check the posture box for all 7 days.
For example, at 9 p.m. while I watch TV.
2. Decide when you will exercise.
For example, every commercial during the show.
3. Add things that will remind you to exercise.
For example, every commercial during the show.
4. Add ways to motivate yourself.
For example, I can see myself standing tall.



Here is a sample.

My Activity Plan: Worksheet A

Start to fill out this worksheet as you read through the booklet.

Show your worksheet to your Bone Fit™ professional.

Weekly plan for:

June

(month)

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
What type of exercise will I do on each day?	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic
What time of day will I exercise?	posture at 9 p.m. during TV show	posture at 9 p.m. during TV show	posture at 9 p.m. during TV show	posture at 9 p.m. during TV show	posture at 9 p.m. during TV show	posture at 9 p.m. during TV show	posture at 9 p.m. during TV show	
What will I use to remind me to exercise?	posture reminder: commercials	posture reminder: commercials	posture reminder: commercials	posture reminder: commercials	posture reminder: commercials	posture reminder: commercials	posture reminder: commercials	
What will motivate me to exercise?	I can hold my grandson.	I can see myself standing tall.						

Part 4: How to do balance exercises



Good balance can help prevent falls. It is important to keep your balance while you do daily activities. Exercises can help to improve your balance.

How do you keep your balance?

1. When you are standing, the distance between your feet is your base of support. If your feet are far apart, your base of support is large. If they are close together, your base of support is small.

A walker or cane can help with balance because it increases the base of support.



2. Your balance depends on your body position and how it moves around your base of support. If you lean forward too far, you might lose your balance and fall.
3. Your balance also depends on how you react when you become unstable. For example, if you stumble on the stairs, a good reaction might be to grab a handrail. If a dog jumps up at you, a good reaction might be to take a step backward.

What are balance exercises?

Balance exercises challenge your balance. They help to improve your balance and coordination. You may fall less often which helps prevent fractures.

My Notes:



Tai Chi is a safe way to exercise. It helps your balance. If you do Tai Chi, you may fall less often.

Good **coordination** means that you can easily move different parts of your body at the same time.



These 4 types of exercises challenge your balance

1. Reduce your base of support

- Stand with feet together or on 1 leg (see photo).
- Balance on your heels only or on your toes only.
- Walk while you balance on your toes or heels only.
- Stand with 1 foot in front of the other. Your front heel touches your back toes.



2. Shift your weight

- Move your weight more to 1 foot than the other.
- Lean side to side or front to back.
- Shift your weight from toes to heels.

What tools do you need?

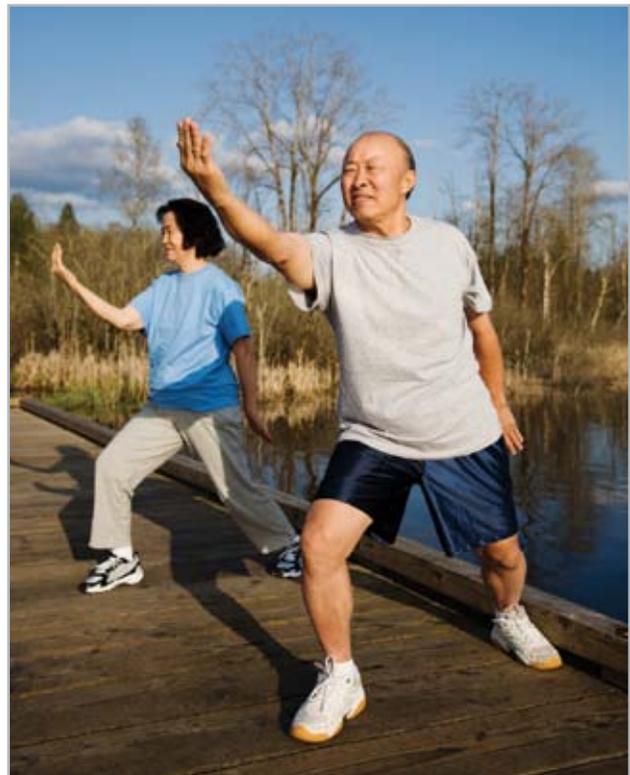
- support object (chair, counter or wall) to use or have nearby
- balls to catch
- shoes with good traction

3. Respond to things that upset your balance

- Correct your balance after something upsets your balance. For example, play catch with balls of different sizes and weights, and correct your balance.
- Balance on an unstable surface. For example, a piece of foam or a BOSU ball. A BOSU ball has a flat bottom and a round top. It doesn't roll.
- Do activities that require coordination or shifting weight while moving around.

4. Try line dancing or other types of dance.

- Do Tai Chi.
- Walk heel to toe in a line or in a figure eight.



Always use a support or have one nearby

A support object will help prevent falls during balance exercises. Hold on to a support object or have one nearby to help you.

Over time, reduce how much you hold on to the support, if you can.



What can you use for support during balance exercises?

- sturdy chair
- table
- counter
- wall

My Notes:



How often should you do balance exercises?

Try adding balance exercises into your daily activities and into your exercise routine. For example:

- Shift your weight from toes to heels while you brush your teeth. You can stand on 1 or 2 legs.
- Add balance exercises to your daily walk.

How hard should you work?

Choose exercises that are hard enough so you have to focus on your balance. But be careful not to fall.

You should make your exercises more difficult over time.

Get help

It is very important to get help from someone who knows about osteoporosis and exercise. For example, a Bone Fit™ professional can help you choose exercises that are safe for you.

Remember to do balance exercises every day.



Add balance exercises to your plan

Go to page 24 and add balance exercises to Worksheet A.

1. Check the balance box for all 7 days.
For example, morning and evening.
2. Decide what time you will exercise.
For example, when I brush my teeth.
3. Write down things that will remind you to exercise.
For example, when I brush my teeth.
4. Write down ways to motivate yourself.
For example, I can feel confident that I won't fall.



Here is a sample.

My Activity Plan: Worksheet A

Start to fill out this worksheet as you read through the booklet.

Show your worksheet to your Bone Fit™ professional.

Weekly plan for:

June

(month)

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
What type of exercise will I do on each day?	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic
What time of day will I exercise?	posture at 9 p.m. during TV show balance in a.m. and p.m.	posture at 9 p.m. during TV show balance in a.m. and p.m.	strength at 10 a.m. posture at 9 p.m. during TV show balance in a.m. and p.m.	posture at 9 p.m. during TV show balance in a.m. and p.m.	posture at 9 p.m. during TV show balance in a.m. and p.m.	strength at 10 a.m. posture at 9 p.m. during TV show balance in a.m. and p.m.	posture at 9 p.m. during TV show balance in a.m. and p.m.	
What will I use to remind me to exercise?	posture reminder: commercials balance reminder: brushing teeth	posture reminder: commercials balance reminder: brushing teeth	strength reminder: favourite tea cup posture reminder: commercials balance reminder: brushing teeth	posture reminder: commercials balance reminder: brushing teeth	posture reminder: commercials balance reminder: brushing teeth	strength reminder: favourite tea cup posture reminder: commercials balance reminder: brushing teeth	posture reminder: commercials balance reminder: brushing teeth	
What will motivate me to exercise?	I can hold my grandson.	I can see myself standing tall.	I can feel confident that I won't fall.					

How can you increase the challenge of balance exercises over time?

As your balance improves, there are more ways to challenge your balance. For example:

1. Reduce how much you touch your support.
2. Shift your weight in standing exercises. For example, stand on one leg. Then, shift your weight between your heels and toes.
3. Close your eyes during standing-still exercises.
4. Do another activity while you do balance exercises. For example, count backwards from 100 while you walk on your toes.



These examples show how to increase the challenge of 2 exercises over time.

Standing exercise

- Stand with good posture. Hold on to a sturdy chair.
- Put the back of your right heel in front of the toes on your left foot.
- Hold for 10 seconds. Switch feet.



How to increase the challenge

1. Put only 2 fingers on the chair.
2. Remove your hand from the chair.
3. Close your eyes.

Standing to walking exercise

- Stand with good posture. Look straight ahead.
- Come up onto your toes. Hold for 5 seconds. Lower and repeat 3 times. To make it harder, do it on one foot.



How to increase the challenge

Walk a few steps on your toes. Lower your heels to the floor. Turn around. Repeat the toe walk.

Consider getting advice on what exercises are right for you or how to progress your plan.

Part 5: How to do aerobic physical activity



Aerobic physical activity

What is aerobic physical activity? It is any continuous, rhythmic activity that you do without resting. You must do it for at least 10 minutes at a time. For example, you can walk, dance, run, climb stairs and use a stair-step machine.

Your heart beats faster. You breathe harder than you do during normal daily activities.

How often should you do aerobic physical activity?

Experts recommend that **all** adults get 150 minutes of physical activity (moderate to vigorous) during the week. That means about 20 to 30 minutes per day.

How hard should you work?

The exercise should be **moderate to vigorous intensity**. You can use this scale from 0 to 10 to describe the intensity of an activity.* The scale describes how intense (hard) it feels for you to do an activity. For example, walking quickly might be hard – number 5.

	0	= nothing at all
	1	= very light
	2	= fairly light
	3	= somewhat hard
	4	
5 and 6 are moderate intensity.	5	= hard
	6	
7 and 8 are vigorous intensity.	7	= very hard
	8	
	9	= very, very hard
	10	



Aerobic physical activity is good for your overall health.

My Notes:



*Source: Borg, G.V. (1982) Psychological basis of perceived exertion. *Medicine and Science in Sports and Exercise*, 14, 377-381. American College of Sports Medicine. Note: The word moderate was removed from 3 to reduce confusion, since we define moderate as 5 or 6.

Moderate-intensity activity feels hard — 5 or 6 on the scale

For these activities, your heart beats faster, and you breathe harder. You might be able to talk during these activities. But you could not sing.

Vigorous-intensity activity feels very hard — 7 or 8 on the scale

For these activities, your heart beats faster, and you breathe faster. It is hard to talk during these activities.

Weight-bearing aerobic physical activity

Try to make many of your aerobic physical activities weight bearing. This means you are supporting the weight of your body.



For example, when you walk, your legs support your weight against gravity. This movement puts stress on your bones.

Swimming and cycling are not weight bearing. When you swim, the water supports your weight. When you cycle, the bicycle supports your weight. You can still swim and cycle. But also include activities that are weight bearing.

How hard should people with osteoporosis work?

- Low or moderate intensity exercise (3 to 6 on the scale) is good if you are new to exercise or have had a spine fracture. At first, exercise for about 10 minutes at a time.
- Moderate or vigorous intensity exercise (5 to 8 on the scale) is good if you are already active.

Talk to a healthcare professional before you begin a new exercise program.

Add up your activity for the day. You can include aerobic activities that you do for 10 minutes or longer.

- Walked quickly for 15 min.
- Swept for 10 min.
- Rode exercise bike for 10 min.

Total = 35 minutes

My Notes:



Remember to do aerobic physical activity that is weight bearing **5 or more days per week.**



Add aerobic physical activity to your plan

Go to page 24 and add aerobic physical activity that is weight bearing to Worksheet A.

- 1. Check 5 or more days to do these exercises.**
- 2. Decide what time you will exercise.**
For example, in the afternoon.
- 3. Write down things that will remind you to exercise.**
For example, put my running shoes next to my bed.
- 4. Write down ways to motivate yourself.**
For example, it is always hard to get started.
But I always feel so good when I am finished.



Here is a sample.

My Activity Plan: Worksheet A

Start to fill out this worksheet as you read through the booklet.

Show your worksheet to your Bone Fit™ professional.

Weekly plan for:

June

(month)

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
What type of exercise will I do on each day?	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input checked="" type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input checked="" type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input checked="" type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input checked="" type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input checked="" type="checkbox"/> aerobic	<input checked="" type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input checked="" type="checkbox"/> posture <input checked="" type="checkbox"/> balance <input checked="" type="checkbox"/> aerobic
What time of day will I exercise?	posture at 9 p.m. during TV show balance in a.m. and p.m. aerobic in afternoon	posture at 9 p.m. during TV show balance in a.m. and p.m. aerobic in afternoon	strength at 10 a.m. posture at 9 p.m. during TV show balance in a.m. and p.m.	posture at 9 p.m. during TV show balance in a.m. and p.m. aerobic in afternoon	posture at 9 p.m. during TV show balance in a.m. and p.m. aerobic in afternoon	strength at 10 a.m. posture at 9 p.m. during TV show balance in a.m. and p.m.	posture at 9 p.m. during TV show balance in a.m. and p.m. aerobic in afternoon	
What will I use to remind me to exercise?	posture reminder: commercials balance reminder: brushing teeth aerobic reminder: shoes by bed	posture reminder: commercials balance reminder: brushing teeth aerobic reminder: shoes by bed	strength reminder: favourite tea cup posture reminder: commercials balance reminder: brushing teeth	posture reminder: commercials balance reminder: brushing teeth aerobic reminder: shoes by bed	posture reminder: commercials balance reminder: brushing teeth aerobic reminder: shoes by bed	strength reminder: favourite tea cup posture reminder: commercials balance reminder: brushing teeth	posture reminder: commercials balance reminder: brushing teeth aerobic reminder: shoes by bed	
What will motivate me to exercise?	I can hold my grandson.	I can see myself standing tall.	I can feel confident that I won't fall.	It makes me feel good.				

Part 6: Flexibility exercises can also help

As people get older, joints can become stiff and less flexible. Joints can get stuck in position. For example, a person might develop a stooped, slouched posture.

How can you become more flexible?

For the chest and front shoulders, start with the yoga stretch called Shavasana (see page 8).

For the front of your hips, add some longer strides when you walk. You can also include lunges in your strength training.

For the muscles around your ankles, try a calf muscle stretch (soleus stretch).



This yoga stretch is called Shavasana.

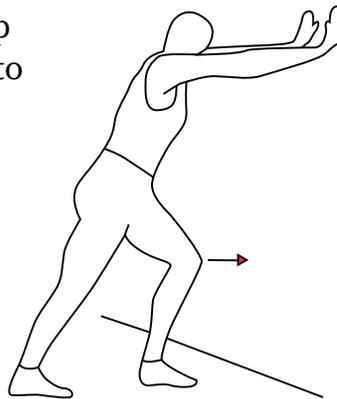
My Notes:



Calf muscle stretch

This exercise stretches the calf muscle in your lower leg and the muscles around the ankle.

1. Put both hands on the wall at about eye level.
2. Lean into the wall. One leg is forward, and one leg is back. Bend the front leg at the knee and ankle. Your knee cap just touches the wall. Try not to raise your heels off the floor.
3. Hold this stretch for 30 seconds.
4. Repeat with the other leg.



Why is stretching important? Tight muscles can restrict movement. Tight calf muscles make it hard to lift your toes when you walk. Then, you might trip.

Part 8: Tips and worksheets for your plan

This part of the booklet has an exercise guide and worksheets. You can use them to make your exercise plan.

Exercise Guide

Use the Exercise Guide on page 23 to help you make your plan:

- What types of exercises can you do?
- How often should you do them?
- How hard should you work?

Start at a level that is safe for you. Think about your fitness level and risk of fracture. Increase how hard you work over time.

What exercises?	How often?	How hard?	How long?
Strength Use exercise bands, hand weights, own body weight, resistance training equipment.	At least 2 days a week	You should be able to do 8 to 12 reps. The last 2 to 3 reps should feel hard to do.	Do at least 2 sets of 8 to 12 reps per exercise. Include all major muscle groups.
Posture Practice good posture when you stand and sit, do Shavasana, do back exercises that extend your spine.	Every day	Be aware of your posture. Use a mirror when you exercise.	Pay attention to your posture during daily activities. Do posture exercises for 5 to 10 minutes daily.
Balance Do Tai Chi, dance, walk heel to toe, reduce base of support, shift your weight, respond to things that upset your balance.	Every day	Beginners: Do exercises where you stand in one spot. Advanced: Challenge your balance while you are moving. Try to get help to choose exercises.	Do balance exercises all at once or spread them out during the day. You can also build them into daily activities.
Aerobic physical activity Walk quickly, dance, run, climb stairs, rake leaves.	Most days (5 days or more)	Some people can do moderate to vigorous intensity – 5 to 8 on the scale. If you are new to exercise or if you have had a spine fracture, start at low to moderate intensity – 3 to 6 on the scale (see scale on page 16).	Do aerobic physical activity for about 20 to 30 minutes per day. Exercise for at least 10 minutes at a time. In total, do 150 minutes or more per week. If you are new to exercise or if you have had a spine fracture, start with 10 minutes each day.

My Activity Plan: Worksheets A and B

Use Worksheet A on page 24 to write down your plan. Then cut or tear it out of the booklet. Put it in a place where you will see it each day.

Use Worksheet B on page 25 together with your Bone Fit™ professional.

You can download and print blank sheets at www.osteoporosis.ca/osteoporosis-and-you/too-fit-to-fracture/

My Activity Plan: Worksheet A / 
Start to fill out this worksheet as you read through the booklet.
Show your worksheet to your Bone Fit™ professional.

Weekly plan for: _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
What type of exercise will I do on each day?	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic
What time of day will I exercise?								
What will I use to remind me to exercise?								
What will motivate me to exercise?								

My Activity Plan: Worksheet B / 
Fill out this worksheet with your Bone Fit™ professional.

Month: _____

	What exercises will I do? For example: wall pushups, Shavasana, standing on one leg, dancing.	How many minutes will I exercise for?	How hard will I exercise? For example: number of reps and sets, or easy, moderate, hard.	What materials will I need? For example: weights, chair.
Strength 				
Posture 				
Balance 				
Aerobic 				

Exercise Guide

What exercises?	How often?	How hard?	How long?
<p>Strength Use exercise bands, hand weights, own body weight, resistance training equipment.</p>	<p>At least 2 days a week</p>	<p>You should be able to do 8 to 12 reps. The last 2 to 3 reps should feel hard to do.</p>	<p>Do at least 2 sets of 8 to 12 reps per exercise. Include all major muscle groups.</p>
<p>Posture Practice good posture when you stand and sit, do Shavasana, do back exercises that extend your spine.</p>	<p>Every day</p>	<p>Be aware of your posture. Use a mirror when you exercise.</p>	<p>Pay attention to your posture during daily activities. Do posture exercises for 5 to 10 minutes daily.</p>
<p>Balance Do Tai Chi, dance, walk heel to toe, reduce base of support, shift your weight, respond to things that upset your balance.</p>	<p>Every day</p>	<p>Beginners: Do exercises where you stand in one spot. Advanced: Challenge your balance while you are moving. Try to get help to choose exercises.</p>	<p>Do balance exercises all at once or spread them out during the day. You can also build them into daily activities.</p>
<p>Aerobic physical activity Walk quickly, dance, run, climb stairs, rake leaves.</p>	<p>Most days (5 days or more)</p>	<p>Some people can do moderate to vigorous intensity—5 to 8 on the scale. If you are new to exercise or if you have had a spine fracture, start at low to moderate intensity — 3 to 6 on the scale (see scale on page 16).</p>	<p>Do aerobic physical activity for about 20 to 30 minutes per day. Exercise for at least 10 minutes at a time. In total, do 150 minutes or more per week. If you are new to exercise or if you have had a spine fracture, start with 10 minutes each day.</p>



My Activity Plan: Worksheet A

Weekly plan for:

Start to fill out this worksheet as you read through the booklet.

Show your worksheet to your Bone Fit™ professional.

_____ (month)

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
What type of exercise will I do on each day?	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic	<input type="checkbox"/> strength <input type="checkbox"/> posture <input type="checkbox"/> balance <input type="checkbox"/> aerobic
What time of day will I exercise?								
What will I use to remind me to exercise?								
What will motivate me to exercise?								



My Activity Plan: Worksheet B

Fill out this worksheet with your Bone Fit™ professional.

Month: _____

	What exercises will I do? For example: wall pushups, Shavasana, standing on one leg, dancing.	How many minutes will I exercise for?	How hard will I exercise? For example: number of reps and sets, or easy, moderate, hard.	What materials will I need? For example: weights, chair.
Strength 				
Posture 				
Balance 				
Aerobic 				

Part 9: Ways to stick to your exercise plan

What might get in the way of your exercise plan?

It can be hard to start and stick to an exercise plan. What can help you?

Write your ideas in the chart below.

1. What things might stop me from exercising?

2. Some days, something might interfere with my exercise plan.
How can I change my plan on those days?

3. Who can help me meet my goals?

4. How can these people help me?

5. Sometimes parts of the plan will not challenge me
enough. What can I do to increase the challenge?

Part 10: Ways to prevent spine fractures

How does your spine work?

There are 24 bones (vertebrae) in your spine. They are different shapes and sizes. They stack up one on top of the other and form 3 gentle curves. This alignment is called neutral spine.

The neutral spine is the strongest and safest position for the spine. The ear is right over your shoulder.

The 24 bones in the back are vertebrae (say: VER-ta-bray).

What movements can cause spine fractures if you have osteoporosis?

Here are 3 movements that can cause spine fractures.

1. Twisting

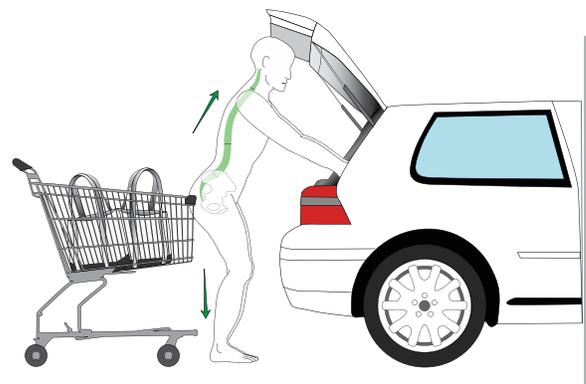
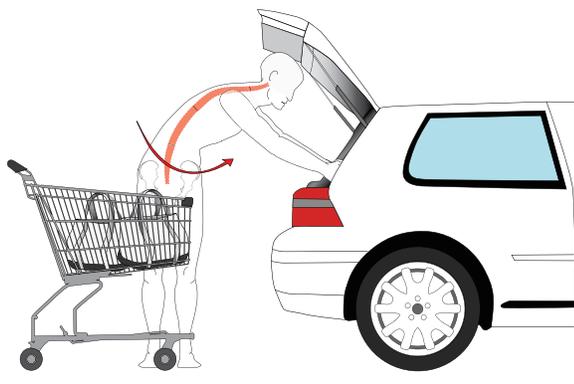
When you twist your spine, muscles pull strongly on the bones on one side of your spine. This force can break a bone in the spine.

What should you avoid (not do)?

- Avoid twisting quickly — like turning to answer the phone.
- Avoid twisting over and over again — like if you are vacuuming.
- Avoid twisting too far or while sitting — like turning to reach something behind you.
- Avoid twisting while holding a heavy object — like picking up a box and turning to the side to put it down.

My Notes:





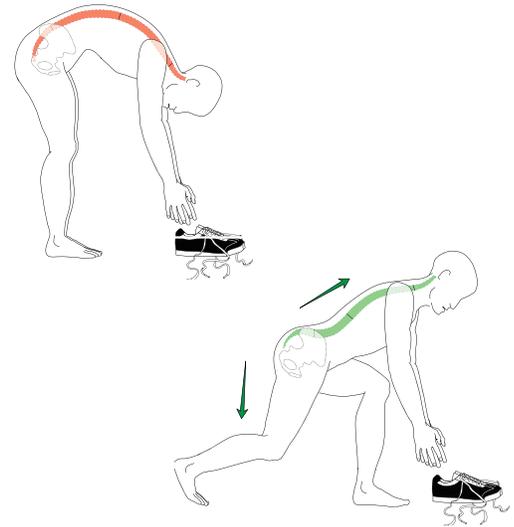
Part 10: Ways to prevent spine fractures

2. Bending

When you bend forward, you compress (squeeze together) the front part of each bone in your spine. Compressing the bones can cause a fracture.

What should you avoid (not do)?

- Avoid bending all the way forward — like picking something off the floor.
- Avoid bending over and over again — like during sit-ups.
- Avoid bending while holding something heavy — like a bag of groceries.
- Avoid bending quickly — like picking up something that you drop.

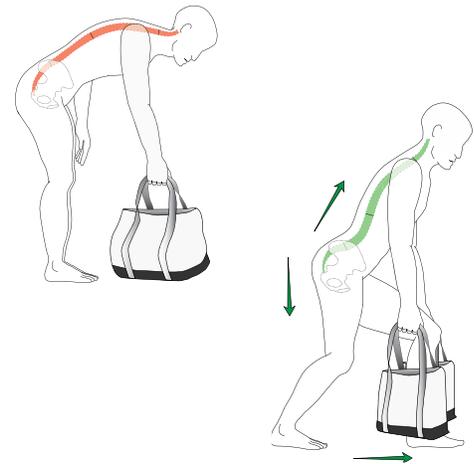


3. Holding or lifting a heavy object

Your spine must support extra weight when you carry or lift something heavy. This weight can cause a spine fracture.

What should you avoid (not do)?

- Avoid holding heavy weights in your arms — like holding a heavy box of groceries or a child.
- Avoid lifting heavy objects into high or low storage areas — like lifting luggage into overhead storage.
- Avoid lifting heavy objects — like moving a couch.



Do exercises for your back

Do exercises for your back extensor muscles. These muscles help you stand upright. They can help protect your back when you twist, bend and lift things.

Even small changes in your posture can help to reduce stress on your spine. You may have less pain.

Part 10: Ways to prevent spine fractures

How to move more safely

Some movements can increase your risk of a spine fracture. Here are some examples of risky movements and safer ways to do these movements.

Risky ✗	Safer ✓
Bending all the way forward when you pick up an object from the floor.	Bend with your knees and hips, not the spine. Use a grabber tool.
Rotating or twisting the spine when you get out of a car or sweep the floor.	Step and turn with your feet. Twist slowly and in control. Don't over twist.
Standing on an unstable footstool, chair or ladder.	Use a wide step stool with non-slip grips on the steps and on the feet.
Lifting heavy objects into high cupboards.	Hold the object close to your body. Stand on a step stool.
Lowering bags from overhead storage areas on a plane.	Ask someone to do it for you or check your bags.
Lifting objects into low cupboards.	Avoid lowering or lifting from the floor. Store things at waist height.
Lifting or moving furniture.	Get someone else to do it.
Rotating your body but not moving your feet while you vacuum or rake.	Step to turn. Your leading foot and trunk should face the same direction.
Walking or stepping into a room or pool area that has a slippery or wet floor.	Wear shoes or slippers with good traction. Walk slowly and check the floor. Take a test step before you walk.
Twisting or bending and lifting when you make your bed.	Bend with your knees and hips, not the spine. Stand close to the bed.
Twisting or bending and lifting when you shovel snow.	Bend with your knees and hips, not the spine. Step to turn. Your leading foot and trunk should face the same direction.
Moving from lying in bed to getting out of bed.	Slide your arm out alongside your ear. Roll your whole body onto its side. Bend your knees to 90 degrees. Use your arms to push yourself up.

Part 11: Helpful resources

How to find a Bone Fit™ professional

Osteoporosis Canada has a program called Bone Fit™. The program provides education and training to health and fitness professionals — physical therapists, kinesiologists and others. They learn what exercises are safe and effective for people with osteoporosis.

A Bone Fit™ professional can help you plan an exercise program. Are there Bone Fit™ professionals in your area? Check the Bone Fit™ website at: www.bonefit.ca/locator/

The information in this booklet is not intended to replace individual medical advice.

Health and fitness professionals can get more information about the Bone Fit™ program at www.bonefit.ca.

Where to find more information about osteoporosis and exercise

Too Fit to Fracture resources

- You can download and print the booklet Too Fit to Fracture. Go to: www.osteoporosis.ca/osteoporosis-and-you/too-fit-to-fracture/
- You can download and print the 2-page handout Too Fit to Fall or Fracture. Go to: www.osteoporosis.ca/wp-content/uploads/OC-Too-Fit-to-Fall-or-Fracture.pdf
- You can watch the video series on exercise and osteoporosis. Watch as men and women with osteoporosis work with exercise professionals and learn how to exercise safely. Go to: www.osteoporosis.ca/osteoporosis-and-you/too-fit-to-fracture/video-series-on-exercise-and-osteoporosis/

Canadian Osteoporosis Patient Network (COPN) E-Newsletter resources

- You can read the 8-part exercise series called Boning Up on Exercise. Go to: www.osteoporosis.ca/osteoporosis-and-you/copn/coping-archives/copn-boning-up-on-exercise-series/
- You can read the 4-part fall prevention series called You Can Prevent Falls and the Injuries They Cause. Go to: www.osteoporosis.ca/wp-content/uploads/COPING_February_14_2014.pdf

After the Fracture resource

After the Fracture is a booklet for people who have broken a bone due to osteoporosis. Go to: www.osteoporosis.ca/after-the-fracture/

Information Line (toll free)

Osteoporosis Canada has a free information line. You can call and speak to an information counsellor. They can answer questions and send you information.

English: 1-800-463-6842

French: 1-800-977-1778

Credits: Giangregorio LM, McGill S, Wark JD, Laprade J, Heinonen A, Ashe MC, MacIntyre NJ, Cheung AM, Shipp K, Keller H, Jain R, Papaioannou A. Too Fit To Fracture: outcomes of a Delphi consensus process on physical activity and exercise recommendations for adults with osteoporosis with or without vertebral fractures. *Osteoporos Int.* 2015 Mar;26(3):891-910.

Giangregorio LM, Papaioannou A, Macintyre NJ, Ashe MC, Heinonen A, Shipp K, Wark J, McGill S, Keller H, Jain R, Laprade J, Cheung AM. Too Fit To Fracture: exercise recommendations for individuals with osteoporosis or osteoporotic vertebral fracture. *Osteoporosis Int.* 2014 Mar;25(3):821-35.

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