

Medications to Improve Bone Health

Starter Activity

- Please, find the Quiz on the first page of your **Medications to Improve Bone Health - Workshop Guide**
- Complete the LEFT SIDE of the chart indicating how familiar you are with the topics that will be discussed today
- We will return to this quiz at the end of the workshop



Agenda

1. Vitamin D and Calcium Supplements
2. Bisphosphonates
3. Denosumab
4. Hormone Therapy
5. SERMs
6. Teriparatide



Learning Objectives

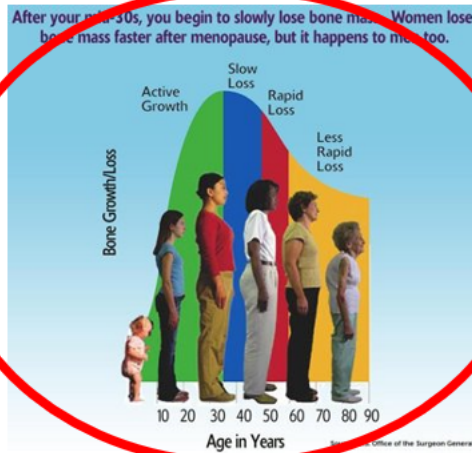
I will be able to...

- Briefly describe how each medication or therapy works
- Describe how these medications are taken
- Identify common side effects for each medication or therapy
- Identify medications that increase my risk of having a fracture



How to navigate the slides

Bone Growth Cycle



bones are living tissue and are constantly changing

- This process is called "modelling"

I will be able to briefly describe the bone growth cycle

slide title

slide image

key information

learning objective



Workshop Guide

As we progress through this workshop, please ensure to complete the appropriate sections of the Workshop Guide provided for you.

This will be your quick reference following this workshop to aid you on your bone health journey.



Vitamin D and Calcium Supplements

Why is Vitamin D so important?

- Helps your body absorb and use calcium from your diet and/or supplements
- Increases bone strength which reduces the risk of breaking a bone
- Increases muscle strength which may reduce the risk of falling

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Recommended Daily Vitamin D Intake

Take a Vitamin D supplement every day

Recommended vitamin D supplement
19–50 years at risk of osteoporosis: 400–1000 IU (10–25 µg) a day
19–50 years with osteoporosis: 800–2000 IU (20–50 µg) a day
Over 50 years: 1000–2000 IU (25–50 µg) a day
My healthcare provider suggests _____ IU vitamin D a day.

(IU = International Units, µg = micrograms)

- Check the label of your supplement bottle for the type of vitamin D it contains
 - vitamin D₃ is already converted to the active form of vitamin that your body uses.
- Do not exceed more than 2000 IU of vitamin D each day from supplements unless your healthcare provider tells you to take more

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Vitamin D Sources

- Choose foods with vitamin D such as milk, fortified soy beverage, halibut, salmon, sardines, trout, and eggs
- Our skin makes vitamin D from sunlight
 - Albertans and people who live in the north make little to no vitamin D from October to March!

Key Message:

- Food and sunshine is NOT a reliable source of vitamin D
 - a daily vitamin D supplement is recommended for all ages



Why is Calcium Important?

- Essential to helping the renewing and repairing process of bones stay balanced
- Reduces the risk of breaking a bone
- Recommended daily calcium intake

Age	<u>Recommended calcium from food and supplements</u>
19–50 years	1000 mg (milligrams) a day
Over 50 years	1200 mg a day

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Calcium Supplements

- You may need a calcium supplement if
 - you do not get enough calcium from food every day
 - you do not include any dairy in your diet
 - your healthcare provider recommends that you take a calcium supplement

I will be able to briefly describe how each medication or therapy works.
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Calcium Supplements

- If choosing a supplement, you will need to consider the amount of 'elemental' calcium in your total amount of calcium not just what you see on the front of the bottle
- The body can only absorb a certain amount of calcium at one time (about 500 mg of elemental calcium)

I will be able to briefly describe how each medication or therapy works.
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Calcium Supplements

- Talk to your healthcare provider if you think you need a calcium supplement, and which type might be right for you (e.g. choosing between calcium citrate or phosphate)
- Side effects: constipation, mild stomach upset
- Cautions: calcium can interact with a number of nutrients and other medications
 - Discuss with your pharmacist or other healthcare professional when you should be taking your supplement.

I will be able to briefly describe how each medication or therapy works.

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Bisphosphonates

What are Bisphosphonates?

- Bisphosphonates are a group of medications that help slow bone loss
- This is done by slowing down the body's rate of bone removal
- Common bisphosphonate medications:
 - Alendronate (Fosamax)
 - Risedronate (Actonel)
 - Zolendronate (Alclasta)

I will be able to briefly describe how each medication or therapy works.
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Safety Precautions for Bisphosphonates

- There are quite a few drug interactions and safety precautions to keep in mind when taking bisphosphonates
 - it is important to talk to your doctor or pharmacist if you have any questions when taking this medication
- For example:
 - Taking the medication with food can completely negate their benefit
 - Taking the medication and not staying upright can be extremely dangerous to patients by causing damage to their esophagus

I will be able to briefly describe how each medication or therapy works.
I will be able to describe how these medications are taken.



What are side-effects of bisphosphonates?

- Common side-effects include:
 - stomach pain, heartburn, nausea, pain in bones and muscles
 - usually get better with time
- Less common side-effects:
 - low calcium levels (numbness, tingling, muscle spasms)
 - discuss your calcium intake with your doctor
 - Serious side effects include the medication being caught in the throat if not taken with water. This can lead to damage and bleeding.

I will be able to identify common side effects for each medication or therapy.
I will be able to identify medications that increase my risk of having a fracture.



Denosumab

What is Denosumab?

- Denosumab (Prolia) is an injectable medication that helps to slow bone loss
 - This is accomplished by slowing down the cells in your body responsible for removing bone, slowing or even reversing this process
- It reduces the risk of fractures of the spine, hip and other sites in postmenopausal women

I will be able to briefly describe how each medication or therapy works.
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What are side-effects of denosumab?

- Common side-effects include:
 - pain in muscles or joints, rash
 - pain in muscles and joints usually gets better with time, talk to your doctor if it interferes with your ability to do regular activities
 - if a rash develops, see your doctor
- Less common side-effects:
 - low calcium levels (numbness, tingling, muscle spasms), increased risk of infection
 - discuss your calcium intake with your doctor
 - let your doctor know if you notice any signs of infection (fever, feeling unwell)

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Hormone Therapy

What is Estrogen Therapy?

- Commonly used to relieve the symptoms of menopause
- It is an effective treatment to help reduce the risk of osteoporotic fractures
- Treatment can consist of estrogen alone or estrogen and progesterone in combination
- Can reduce the risk of spine and hip fractures as well as other osteoporotic fractures

I will be able to briefly describe how each medication or therapy works.
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What is Estrogen Therapy?

- Estrogen helps to build and maintain bone density
- The estrogen levels in menopausal women decrease leading to bone density loss
 - Estrogen therapy supplements these very low hormone levels
- Used to treat osteoporosis only in women who also suffer from menopausal symptoms

I will be able to briefly describe how each medication or therapy works.
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Are there any side-effects?

- May increase the risk of heart attack, stroke, blood clots and breast cancer
 - other options should be explored first unless the woman is also suffering from significant menopausal symptoms
- Side-effects can include:
 - depression, headaches, breast tenderness, premenstrual syndrome (PMS), weight gain

I will be able to identify common side effects for each medication or therapy.
I will be able to identify medications that increase my risk of having a fracture.



What about Testosterone Therapy?

- Used to treat hypogonadism in men
- There is no evidence that testosterone can reduce fractures in men, even in men with low testosterone levels
 - Testosterone has been shown to increase bone mass density

I will be able to briefly describe how each medication or therapy works.
I will be able to describe how these medications are taken.



SERMs

What are SERMs?

- SERMs are a family of medication called Selective Estrogen Receptor Modulators
 - The most common is Raloxifene (Evista)
- Although non-hormonal, they act like the hormone estrogen in some parts of the body, such as the bones
 - In other parts, like the uterus and breasts, they block the effects of estrogen
- Reduces the risk of spine fractures, but does not reduce the risk of fractures in other bones

I will be able to briefly describe how each medication or therapy works.
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What are side-effects of SERMs?

- Common side-effects include:
 - worsening of post-menopausal symptoms (hot flashes)
 - has been shown to increase the risk of blood clots

I will be able to identify common side effects for each medication or therapy.
I will be able to identify medications that increase my risk of having a fracture.



Teriparatide

What is Teriparatide?

- Teriparatide (Forteo) is a bone formation agent that targets the body's bone-building cells and stimulates them to start building new bone
- It is the only bone building medication available in Canada
- Teriparatide can be used in postmenopausal women with osteoporosis

I will be able to briefly describe how each medication or therapy works.
I will be able to describe how these medications are taken.



What are side-effects of Teriparatide?

- Common side-effects include:
 - leg cramps, aches and pains
 - dizziness
 - nausea
- People with bone cancer or a bone disease called Paget's disease should not take this medication

I will be able to identify common side effects for each medication or therapy.
I will be able to identify medications that increase my risk of having a fracture.



Cool-down Activity

- Review your “Medications to Improve Bone Health” Quiz from the starter activity in your **Medications to Improve Bone Health - Workshop Guide**
- Complete the RIGHT SIDE of the chart to identify what you have learned during the workshop
- With the person next to you, discuss:
 - what you learned in the workshop
 - what you found surprising in the workshop
 - what do you want to learn more about
 - what you will do next with this new knowledge



Additional Resources

Osteoporosis Canada

- osteoporosis.ca

Dr. David Hanley Osteoporosis Centre

- osteoporosiscalgary.com

National Osteoporosis Foundation

- nof.org



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