

Medications to Improve Bone Health Workshop Guide

Starter Activity

For the quiz below rate your knowledge on a scale from **1 (unfamiliar)** to **5 (very comfortable)** for each topic that will be covered in the workshop by circling a number in the LEFT column of the chart below.

We will return to these responses later in the workshop.

Before the Workshop	How well do you know each topic?	After the Workshop
1 2 3 4 5	Vitamin D Supplements	1 2 3 4 5
1 2 3 4 5	Calcium Supplements	1 2 3 4 5
1 2 3 4 5	Bisphosphonates ● Alendronate (Fosamax) ● Risedronate (Actonel) ● Zolendronate (Alclasta)	1 2 3 4 5
1 2 3 4 5	Denosumab ● Prolia	1 2 3 4 5
1 2 3 4 5	Hormone Therapy ● Estrogen Therapy ● Testosterone Therapy	1 2 3 4 5
1 2 3 4 5	SERMs ● Raloxifene (Evista)	1 2 3 4 5
1 2 3 4 5	Teriparatide ● Forteo	1 2 3 4 5

Vitamin D Supplements

Fill-in-the-blanks below with the appropriate keywords.

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

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 you 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



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

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- 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 make little to no vitamin D from October to March!

Key Message:

- Food and sunshine is _____ a reliable source of vitamin D
 - a daily vitamin D supplement is _____ for all ages

Calcium Supplements

Fill-in-the-blanks below with the appropriate keywords.

- Essential to help the renewing and repairing process of bones
- _____ 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

- You may need a calcium supplement if
 - you do not get enough _____ from food every day
 - you do not include any _____ in your diet
 - your healthcare provider recommends that you take a calcium supplement
- If choosing a supplement, you will need to consider the amount of _____ 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 _____ of elemental calcium)
- 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.

Bisphosphonates

Fill-in-the-blanks below with the appropriate keywords.

- Bisphosphonates are a group of medications that help _____ bone loss
- This is done by slowing down the body's rate of bone removal
- Common bisphosphonate medications:
 - Alendronate (Fosamax)
 - Risedronate (Actonel)
 - Zolendronate (Alclasta)
- 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
- Common side-effects include:
 - stomach pain, heartburn, nausea, _____ in bones and muscles
 - usually get better with time
- Less common side-effects:
 - low _____ levels (numbness, tingling, muscle spasms)
 - discuss your calcium intake with your doctor

Denosumab

Fill-in-the-blanks below with the appropriate keywords.

- Denosumab (Prolia) is an injectable medication that helps to _____ 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 _____, _____ and other sites in postmenopausal women
- 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 _____
 - discuss your calcium intake with your doctor
 - let your doctor know if you notice any signs of infection (fever, feeling unwell)

Estrogen Therapy

Fill-in-the-blanks below with the appropriate keywords.

- Commonly used to relieve the symptoms of _____
- It is an effective treatment to help reduce the risk of osteoporotic _____
- Treatment can consist of estrogen alone or estrogen and progesterone in combination
- Can reduce the risk of _____ and _____ fractures as well as other osteoporotic fractures
- Estrogen helps to build and maintain bone _____
- The estrogen levels in menopausal women _____ leading to bone density loss
 - Estrogen therapy supplements these very low hormone levels
- Used to treat osteoporosis only in _____ who also suffer from menopausal symptoms
- May increase the risk of _____, 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

Testosterone Therapy

Fill-in-the-blanks below with the appropriate keywords.

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

SERMs

Fill-in-the-blanks below with the appropriate keywords.

- SERMs are a family of medication called Selective _____ Receptor Modulators
 - The most common is Raloxifene (Evista)
- Although non-hormonal, they act like the hormone _____ 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 _____ fractures, but does _____ reduce the risk of fractures in other bones
- Common side-effects include:
 - worsening of post-menopausal symptoms (hot flashes)
 - has been shown to increase the risk of blood clots

Teriparatide

Fill-in-the-blanks below with the appropriate keywords.

- Teriparatide (Forteo) is a bone _____ 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 _____ women with osteoporosis
- Common side-effects include:
 - leg cramps, aches and pains
 - _____
 - nausea
- People with bone cancer or a bone disease called Paget's disease should not take this medication

Consolidation Activity

Review your quiz from the starter activity at the beginning of the workshop.
Complete the RIGHT SIDE of the chart to identify how comfortable you are with each topic and how much you might have learned during the workshop.

With the person next to you, discuss:

- What did you learn in the workshop?
- What did you find surprising about the workshop?
- What do you want to learn more about?
- What will you do next with this new knowledge?