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BONE HEALTH

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

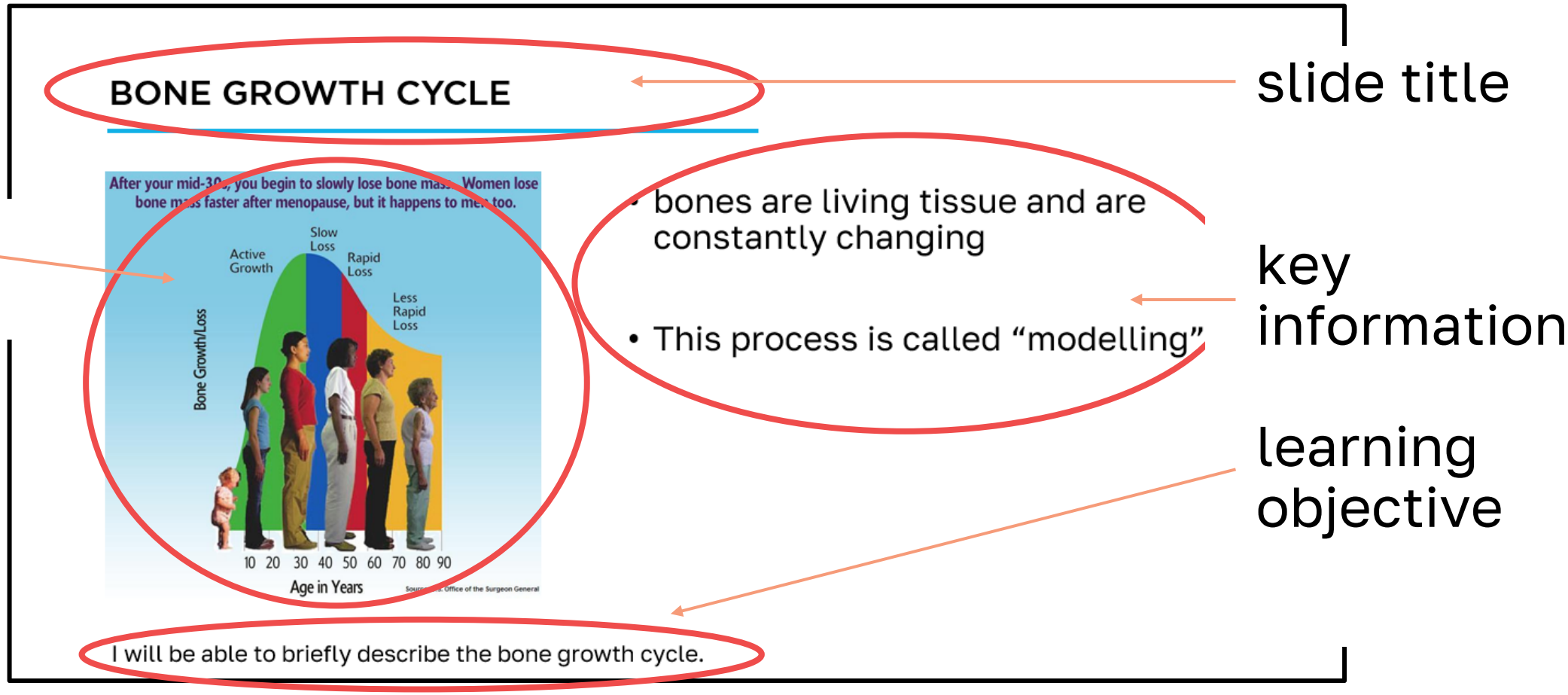
1. Vitamin D and Calcium Supplements
2. Bisphosphonates
3. Denosumab
4. Hormone Therapy
5. SERMs
6. Teriparatide

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



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.

SECTION 1

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

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

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 D_3 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.
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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	Recommended calcium from food and supplements
19–50 years	1000 mg (milligrams) a day
Over 50 years	1200 mg a day

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

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.
I will be able to describe how these medications are taken.

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.
I will be able to describe how these medications are taken.

SECTION 2

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.
I will be able to describe how these medications are taken.

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.

SECTION 3

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.
I will be able to describe how these medications are taken.

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)

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

SECTION 4

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.
I will be able to describe how these medications are taken.

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.
I will be able to describe how these medications are taken.

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.

SECTION 5

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.
I will be able to describe how these medications are taken.

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.

SECTION 5

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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