

BONE HEALTH

My Bones and Me

STARTER ACTIVITY

- On the first page of your **Workshop Guide**, write down the risk factors for bone loss and osteoporosis that you are familiar with
- Discuss these factors with someone near you
- We will review these factors later in the workshop

Agenda

1. Bone Mineral Density (BMD)
2. Understanding Fracture Risk
3. Low Bone Mass
4. What Men and Women need to know!

LEARNING OBJECTIVES

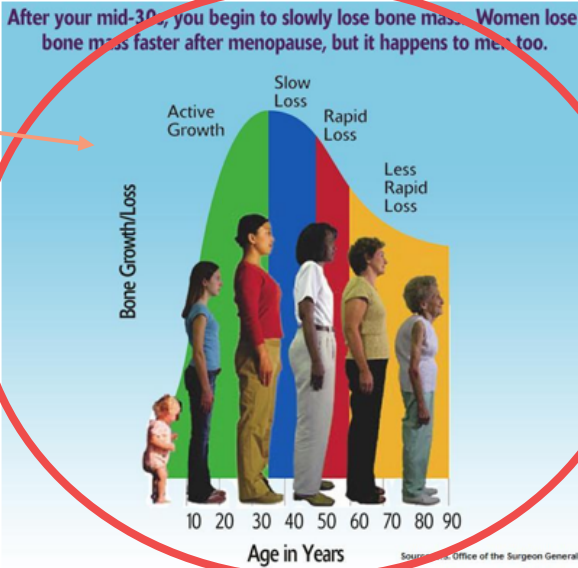
I will be able to...

- Briefly explain the significance of low bone mass
- Discuss at least one approach for treating low bone mass
- Describe how bone mineral density is measured and what it is measuring
- List a minimum of two reasons for a bone density test to be performed
- Describe how BMD tests are interpreted
- Identify the difference between my BMD and my fracture risk
- Identify a minimum of two gender-based facts about osteoporosis or low bone density

HOW TO NAVIGATE THE SLIDES

BONE GROWTH CYCLE

After your mid-30s, you begin to slowly lose bone mass. Women lose bone mass faster after menopause, but it happens to men, too.



- 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.

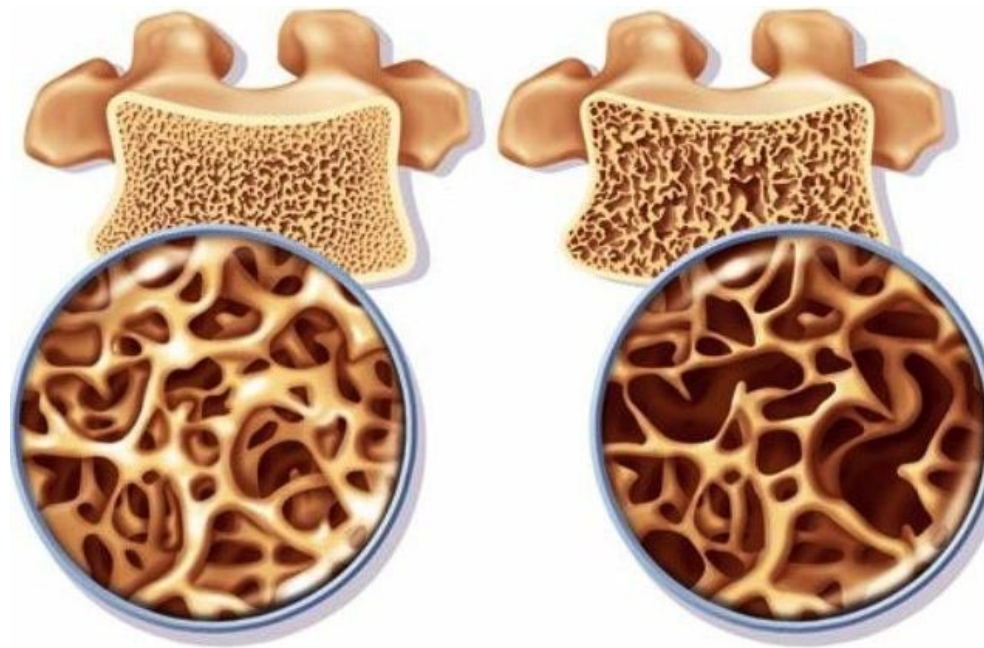
This will be your quick reference following this workshop to aid you on your bone health journey.

SECTION 1

Bone Mineral Density (BMD)

BMD

- Bone Mineral Density only measures bone quantity and not quality



I will be able to describe how bone mineral density is measured and what it is measuring.

BMD TEST

- Measures the density of minerals, like calcium, in your bone
- Takes less than 15 minutes and it is relatively painless



I will be able to describe how bone mineral density is measured and what it is measuring.

WHY DO WE USE THE BMD TEST

- Helps to predict the risk of future bone fractures
- Helps to diagnose bone loss and osteoporosis
- Can help your doctor with their assessment of your osteoporosis therapy
- Used as a part of your bone health assessment in addition to identifying other risk factors

I will be able to list a minimum of 2 reasons for a bone density test to be performed.

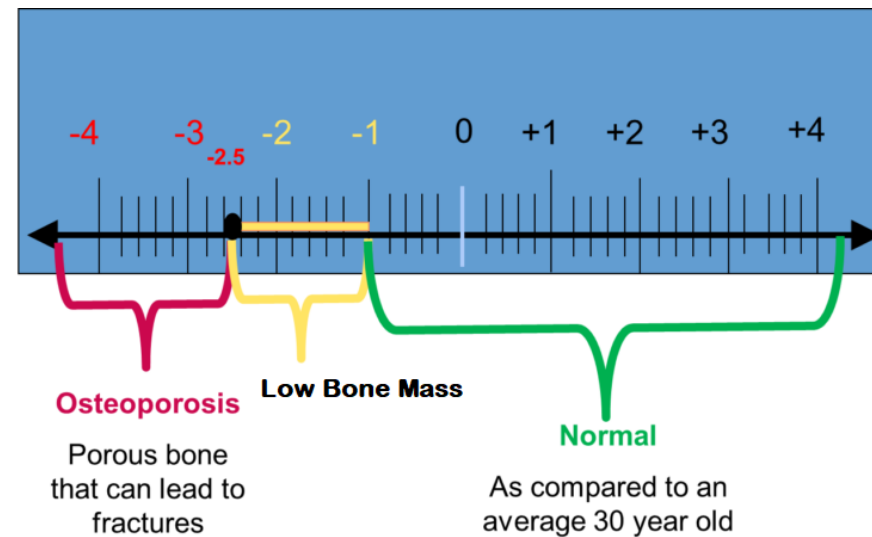
UNDERSTANDING THE BMD TEST

- Your T-Score is a comparison of your BMD Test results to the ideal or peak mineral density of a healthy 30-year-old adult (peak bone density)
 - healthy bone density is a range, not a single number
 - the lower the T-score, the lower your bone mass is compared to a 30-year-old
 - some fractures, especially hip and spine, are almost always due to osteoporosis regardless of the T-score

I will be able to describe how BMD tests are interpreted.

UNDERSTANDING THE BMD TEST

- Interpreting your T-Score
 - T-score greater than -1.0 = Normal
 - T-score between -1 and -2.5 = Low Bone Mass
 - T-score of less than -2.5 = Osteoporosis



I will be able to describe how BMD tests are interpreted.

SECTION 2

Understanding Fracture Risk

FRACTURE RISK FOR MEN AND WOMEN



Video courtesy of the National Osteoporosis Foundation

You should get a BMD Test, if you are...

- 65+
- a postmenopausal woman or man (aged 50-64) with risk factors for fracture
- under 50 with a disease or condition associated with low bone mass or bone loss

I will be able to identify the difference between my BMD and my fracture risk.

FRACTURE RISK FOR MEN AND WOMEN

FRAX - Fracture Risk Assessment Tool

Calculation Tool

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: **Canada** Name/ID: [About the risk factors](#)

Questionnaire:

1. Age (between 40 and 90 years) or Date of Birth
Age: Y: M: D:

2. Sex ☒ Male ☐ Female

3. Weight (kg)

4. Height (cm)

5. Previous Fracture ☒ No ☐ Yes

6. Parent Fractured Hip ☒ No ☐ Yes

7. Current Smoking ☒ No ☐ Yes

8. Glucocorticoids ☒ No ☐ Yes

9. Rheumatoid arthritis ☒ No ☐ Yes

10. Secondary osteoporosis ☒ No ☐ Yes

11. Alcohol 3 or more units/day ☒ No ☐ Yes

12. Femoral neck BMD (g/cm²)
Select BMD

 [Print tool and information](#)



Weight Conversion

Pounds  kg

Height Conversion

Inches  cm

00929351

Individuals with fracture risk
assessed since 1st June 2011

- can be calculated without a BMD test
- looks at your other risks to help predict overall fracture risk
- used for people over the age of 50 who are not on treatment

I will be able to identify the difference between my BMD and my fracture risk.

FRACTURE RISK FOR MEN AND WOMEN

FRAX

- Risk for Major Osteoporotic Fracture

<10% - low risk

10-20% - moderate risk

>20% - high risk

Calculation Tool

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: **Canada** Name/ID: [About the risk factors](#)

Questionnaire:

1. Age (between 40 and 90 years) or Date of Birth
Age: Date of Birth: Y: M: D:

2. Sex ☒ Male ☐ Female

3. Weight (kg)

4. Height (cm)

5. Previous Fracture ☒ No ☐ Yes

6. Parent Fractured Hip ☒ No ☐ Yes

7. Current Smoking ☒ No ☐ Yes

8. Glucocorticoids ☒ No ☐ Yes

9. Rheumatoid arthritis ☒ No ☐ Yes

10. Secondary osteoporosis ☒ No ☐ Yes

11. Alcohol 3 or more units/day ☒ No ☐ Yes

12. Femoral neck BMD (g/cm²)
Select BMD

 [Print tool and information](#)



Weight Conversion

Pounds  kg

Height Conversion

Inches  cm

00929351

Individuals with fracture risk
assessed since 1st June 2011

I will be able to identify the difference between my BMD and my fracture risk.

FRACTURE RISK FOR MEN AND WOMEN

FRAX

- Risk for Hip Fracture

<1% - low risk

1-3% - moderate risk

>3% - high risk

Calculation Tool

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: **Canada** Name/ID: [About the risk factors](#)

Questionnaire:

1. Age (between 40 and 90 years) or Date of Birth
Age: Y: M: D:

2. Sex ☒ Male ☐ Female

3. Weight (kg)

4. Height (cm)

5. Previous Fracture ☒ No ☐ Yes

6. Parent Fractured Hip ☒ No ☐ Yes

7. Current Smoking ☒ No ☐ Yes

8. Glucocorticoids ☒ No ☐ Yes

9. Rheumatoid arthritis ☒ No ☐ Yes

10. Secondary osteoporosis ☒ No ☐ Yes

11. Alcohol 3 or more units/day ☒ No ☐ Yes

12. Femoral neck BMD (g/cm²)
Select BMD

 [Print tool and information](#)



Weight Conversion

Pounds  kg

Height Conversion

Inches  cm

00929351

Individuals with fracture risk
assessed since 1st June 2011

I will be able to identify the difference between my BMD and my fracture risk.

BMD VS. FRACTURE RISK

In your groups, discuss the following questions and record your responses in the appropriate sections of the Workshop Guide provided for you.

- Why is it important to know your BMD and your fracture risk?
- What are the differences?

SECTION 3

Low Bone Mass

LOW BONE MASS

- When your bone density is lower than normal, but not low enough to be considered osteoporosis
 - T-score between -1 and -2.5 = Low Bone Mass

I will be able to briefly explain the significance of low bone mass.

WHAT IS THE SIGNIFICANCE OF LOW BONE MASS?

- In your table groups, brainstorm what would it mean to you if you had low bone mass

I will be able to briefly explain the significance of low bone mass.

SIGNIFICANCE OF LOW BONE MASS

- Does not always mean you will get osteoporosis, but it is a risk
 - As we age, we lose more bone than we replace
- there are no physical symptoms, like with osteoporosis
- more likely to break a bone than someone with normal bone density

I will be able to briefly explain the significance of low bone mass.

TREATING LOW BONE MASS

- Low Bone Mass can progress to osteoporosis
 - ensuring you intake sufficient vitamin D and calcium and engage in an appropriate exercise routine
 - Your doctor will evaluate you to see if you need medication

I will be able to discuss at least one approach for treating low bone mass.

SECTION 4

What Men and Women need to know!

WHAT MEN AND WOMEN NEED TO KNOW!

In groups of 3-4, share and compare risk factors for bone loss and osteoporosis

Compile a list of factors for men and women that can lead to bone loss and/or osteoporosis

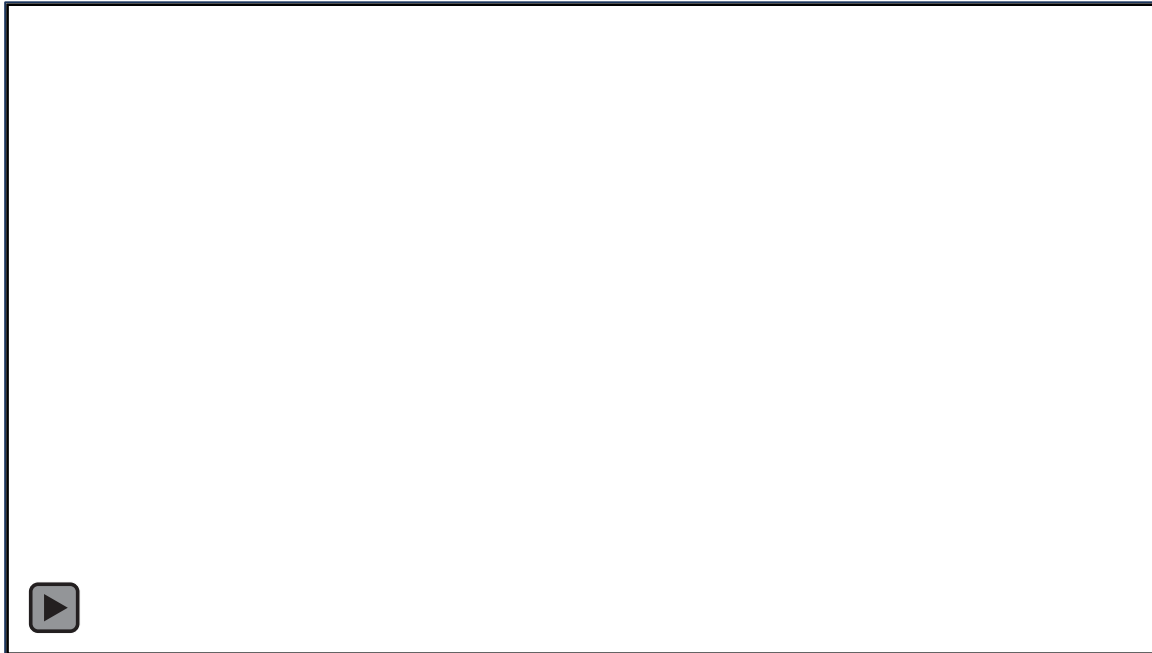
You will have **THREE MINUTES** to record your ideas in your Workshop Guide



I will be able to briefly describe the bone growth cycle.

BONE LOSS AND AGEING

- After the age of about 65, both men and women lose bone at about the same rate
- Before this, however, there are some other factors that you need to be aware of!



Video courtesy of the
National Osteoporosis
Foundation

I will be able to identify a minimum of two gender-based facts about osteoporosis or low bone density.

BONE LOSS FACTORS FOR WOMEN

- low estrogen levels lead to bone loss
 - estrogen helps protect bone
 - menopause leads to lower estrogen levels which will cause bone loss
- women's bones are generally thinner than men's bones
- osteoporosis starts earlier and gets worse faster in women because of midlife hormonal shifts
 - can lose up to 20% of bone density in the first 5-7 years after menopause

I will be able to identify a minimum of two gender-based facts about osteoporosis or low bone density.

BONE LOSS FACTORS FOR MEN

- Associated with some male-only conditions
 - abnormally low testosterone (hypogonadism)
 - low testosterone levels puts men at risk
 - certain genetic conditions
- men who break their hip or wrist are less likely than women to be treated for osteoporosis

I will be able to identify a minimum of two gender-based facts about osteoporosis or low bone density.

COOL-DOWN ACTIVITY

- In your **Workshop Guide**, complete the Cool-down Activity, answering three questions about the material discussed in this workshop
- With a partner, compare your responses

ADDITIONAL RESOURCES

Osteoporosis Canada

- osteoporosis.ca

Dr. David Hanley Osteoporosis Centre

- osteoporosiscalgary.com

National Osteoporosis Foundation

- nof.org

SPONSORS



BIBLIOGRAPHY

(n.d.). Why Should I Get Tested. Retrieved from <https://osteoporosis.ca/about-the-disease/diagnosis/why-should-i-get-tested/>.

(2020). Bone Density Exam/Testing. Retrieved from <https://www.nof.org/patients/diagnosis-information/bone-density-examtesting/>.

Centre for Metabolic Bone Diseases, University of Sheffield. (2020). FRAX Fracture Risk Assessment Tool. Retrieved from <https://www.sheffield.ac.uk/FRAX/tool.aspx?country=19>.

(2016). Understanding Bone Density Results: Your T-score and Z-score Explained. Retrieved from <https://americanbonehealth.org/bone-density/understanding-the-bone-density-t-score-and-z-score/>.

National Osteoporosis Foundation. (2014). *Healthy Bones for Life: Clinician's Guide*. (pp. 23-25).

National Osteoporosis Foundation. (2014). *Healthy Bones for Life: Patient's Guide*. (pp. 19-20).

Osteoporosis Canada. (2014). *Assessment of 10-Year Fracture Risk – Women and Men* [PDF File].