

Osteoporosis



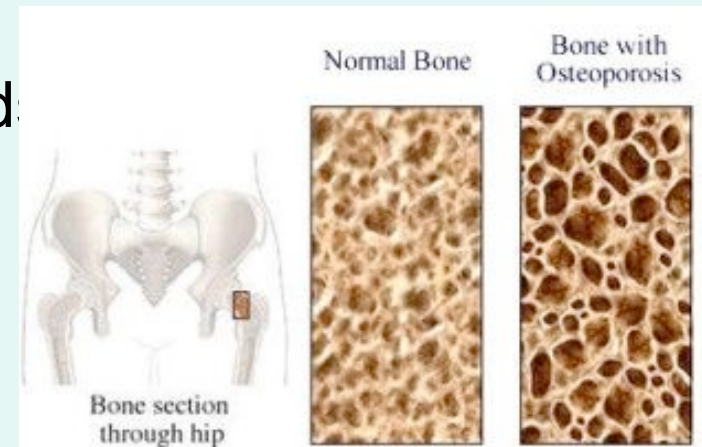
where do your bones stand?

Learning Objectives

- ❑ Students should be able to **define** osteoporosis
- ❑ Students should be able to identify some **risk factors** of osteoporosis
- ❑ Students should be able to identify some of the people in the **risk groups** for osteoporosis
- ❑ Students will become familiar with the **3 treatment solutions** for osteoporosis
- ❑ Students will be able to name the two **main prevention strategies** for osteoporosis

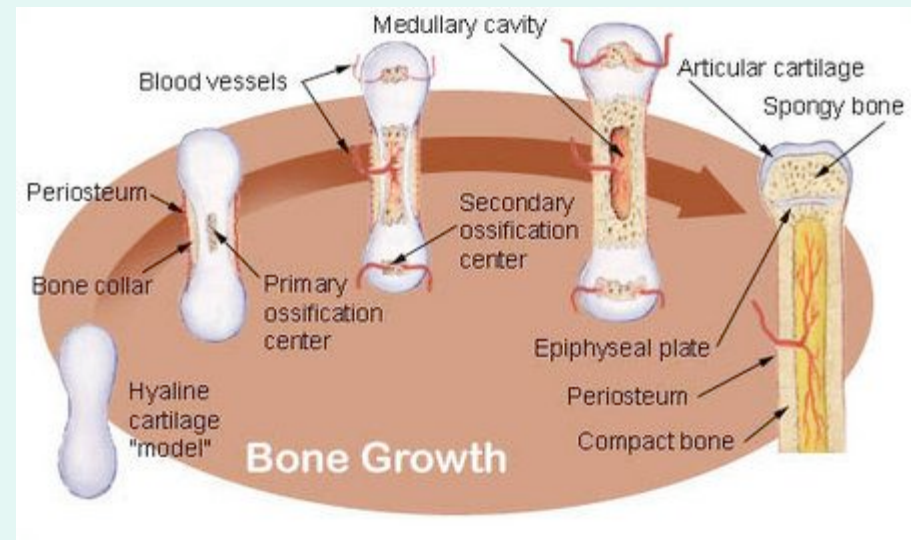
Definition

- Normally, bone mass decreases in adults as they grow older, about 0.7% per year.
- **Osteoporosis** speeds up the process of bone loss.
- There are two types of Osteoporosis: Primary and Secondary.
- **Primary** is found in older adults.
- **Secondary** can be a result from the following conditions:
 - Metabolic bone disease, such as Hyperparathyroidism
 - Malnutrition
 - Drug therapy, as with corticosteroid
 - Long periods of immobilization
 - Underweight



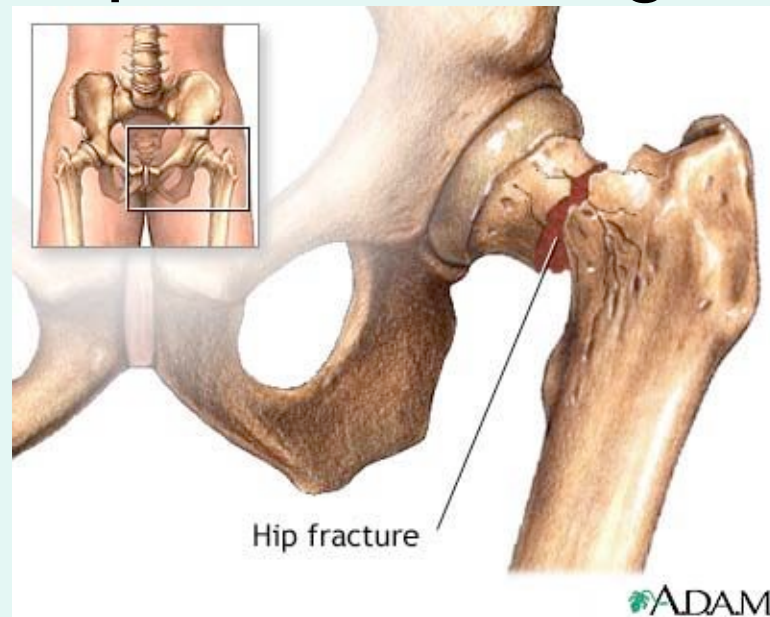
Definition, continued

- Bone loss is greater in women past menopause than in men of the same age.
- It takes the bone about 8 months to develop/redevelop. A very slow but constant process.



Definition, continued

- Bone becomes easier to break than in younger people.
- This is due to a decrease in bone cell activity and production of growth factors.



Risk Factors



1. Smoking
2. Alcohol abuse
3. Too much caffeine
4. Too much protein
5. Lack of calcium
6. Lack of sunlight exposure (helps to generate vitamin D)
7. Cola drinks, especially for women after menopause (increased loss of bone density)



Risk Groups



- Women
- People who have previously broken their hip or related bones
- People who have a family history of osteoporosis
- Women that had menopause before the age of 45
- People who have had anorexia nervosa

Risk Groups, continued

- People that have been taking Prednisone or other steroid tablets for more than three months
- If you have Rheumatoid Arthritis, Hyperthyroidism, Chronic Liver Disease, Malabsorption, or Hyperparathyroidism



Treatment



Treatment will usually include three things:

Education – part of the treatment is to educate people about the appropriate vitamin D intake and about overall nutrition.

Exercise – helps the patient maintain bone density and reduce the risk of falls.

Medication – will reduce fractures by strengthening the bones and/or prevent future bone loss.

Treatment, continued

Medications prescribed to slow or stop bone reabsorption are:

- Bisphosphonates
- Calcitonin
- Estrogen
- Receptor Modulators
- Estrogen/hormone therapy

Medications to increase bone formation are:

- Teriparatide
- Parathyroid hormone





Statistics

- Osteoporosis is **second** leading health care problem to cardiovascular disease according to the WHO (World Health Organizations).
- Patients with osteoporosis-related disabilities spend more immobile days in bed than any of the following: chronic obstructive pulmonary disease, stroke, myocardial infraction, and breast cancer.





Statistics, continued

- More women die each year as a result of an osteoporosis fracture than from breast cancer and ovarian cancer combined.
- 28 million people are affected in the U.S.
- Women are affected four times as men
- One out of every 2 women will have osteoporosis-related fracture in their life time.

Prevention

Children and young adults, particularly women should:

- Eat a good diet with enough calcium and vitamin D
- Get plenty of exercise, this will help build and maintain bone mass



Prevention, continued



The importance of exercise:

- Protects and retards against bone loss later in life
- Builds up bone mass, especially in athletic people than in non-athletic people
- Weight training exercises help with muscle contraction, which keep the skeletal muscles healthy
- All types of exercise are better than none at all
- Helps prevent cardiovascular diseases

Review Questions

1. Osteoporosis speeds up the process of _____.
2. Cola drinks are not harmful for women after menopause. T / F
3. Who is most likely to be at risk for osteoporosis? _____
4. Name the 3 treatment solutions for osteoporosis. _____,
_____, _____
5. List the 2 main prevention strategies for osteoporosis.
_____, _____