



# Study Guide

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MED SURGERY NUR335

1. Define osteoporosis and identify which bone type is affected by osteoporosis.

Answer

- ▶ a. Osteoporosis is a metabolic bone disease characterized by abnormal bone structure that is caused by inadequate or altered biochemical reactions resulting in disorders of bone strength. Abnormalities can be genetic, mineral, vitamin, and/or structural.
- ▶ b. In osteoporosis, the mass – density of the bone - is decreased and the structural integrity of trabecular bone is impaired.

## 2. What is the difference between osteopenia and osteoporosis?

### Answer

- ▶ a. Osteopenia is decreased calcification or density of bone.
- ▶ b. Osteoporosis is a disease characterized by low bone mass and structural deterioration of bone tissue
- ▶ c. Osteopenia is not as severe as Osteoporosis. The T score for Osteopenia is between -1 and -2.5 SD and for Osteoporosis is at or below -2.5 Sd.

### 3. What is primary Osteoporosis and secondary osteoporosis?

#### Answer

- ▶ a. Primary Osteoporosis= postmenopausal women and men after 65 years of age
- ▶ b. Secondary Osteoporosis= Same symptoms as primary osteoporosis, can occur at any age, and is associated with certain diseases or medications

4. Why do postmenopausal women develop osteoporosis? What age is usually postmenopausal?

Answer

- ▶ Postmenopausal women develop osteoporosis due to estrogen deficiency. Occurs within 5-20 years following menopause. More trabecular bone is lost than cortical. Women at the age >50 years are postmenopausal.

5. Why do men develop osteoporosis later in life than women? At what age do men develop osteoporosis?

Answer

- ▶ Over the age of 65. Males present with fractures 10 years later than female due to their greater bone mass.

6. List the endocrine medical conditions that can cause osteoporosis and understand why other medical conditions you have not learned about may cause osteoporosis.

Answer

- ▶ a. Hyperparathyroidism
- ▶ b. Hyperthyroidism
- ▶ c. Diabetes
- ▶ d. Hypogonadism
- ▶ e. GH deficiency
- ▶ f. Hypercortisolism
- ▶ g. Acromegaly

7. List all the medications you have learned that cause osteoporosis.

Which Medication is the most common form of secondary osteoporosis.

Answer

- ▶ a. Heparin
- ▶ b. Furosemide
- ▶ c. Cyclosporine
- ▶ d. Tacrolimus
- ▶ e. SGLT2 Inhibitors= Canagliflozin, dapagliflozin, empagliflozin, ertugliflozin
- ▶ f. Tamoxifen
- ▶ g. Glitazones= Pioglitazone, rosiglitazone
- ▶ h. PPI's
- ▶ i. Steroids= prednisone, cortisone dexamethasone (are the most common form of secondary osteoporosis)

## 8. When should a person get a BMD?

### Answer

- ▶ BMD= postmenopausal women and men over the age of 50 who have had an adult age fracture to diagnose osteoporosis, Postmenopausal patient age 65 or older and men age over 70 or older, Postmenopausal women and men above age 50-69 based on risk factor profile

9. What is the FRAX score? When does the FRAX score recommend treatment? What does the FRAX score take into account?

Answer

- ▶ i. Women age 70 and older and men age 80 and older, if BMD T score is  $<-1.0$  at the spine, total hip or femoral neck
- ▶ ii. Women age 65-69 and men age 70-79 BMD, if T score is  $<-1.5$  at the spine, total hip or femoral neck
- ▶ iii. Postmenopausal women and men age 50 and older with no risk factors

## 10. What is a T score and a Z score?

### Answer

- ▶ a. T score: Compares bone mineral density to that of a young white healthy woman or men. Expressed as a Standard Deviation
- ▶ b. Z score: Compares bone density to other people of the same age, gender and race by the use of standard deviations.

11. What T score represents osteopenia, Osteoporosis and severe osteoporosis?

Answer

- ▶ a. Osteopenia= between -1 to -2.5 SD
- ▶ b. Osteoporosis= below -2.5
- ▶ c. Severe Osteoporosis= at or below -2.5 with one or more fracture