

Self-Assessment Test

Looking Beyond the “Obvious” to Promote Bone Health

This program is located at www.ashpmedia.org/symposia/bonehealth



This self-assessment test has been provided as a study aid only. At the conclusion of the internet-based activity, click on “Take Post-Test” to proceed to the ASHP Learning Center and take the online activity post-test. You may print your CPE statement immediately after successful completion of the post-test and evaluation.

There are a total of 22 questions associated with this self-assessment test.

1. Implementation of the American Osteopaedic Association “Own the Bone” initiative for improving bone health resulted in significant improvement in which of the following areas?
 - a. Screening for low bone mineral density (BMD) and recommending smoking cessation.
 - b. Recommending exercise and prescribing pharmacotherapy.
 - c. Recommending fall prevention strategies and sending referral letters to primary care providers for a work up to address osteoporosis.
 - d. Recommending adequate calcium and vitamin D intake and screening for BMD.
2. Which of the following is considered a risk factor for osteoporosis and hip fractures in postmenopausal women and men age 50 and older?
 - a. Prior fracture after age 40 years.
 - b. Ever use of systemic corticosteroids.
 - c. Consumption of more than one drink of alcohol daily.
 - d. Hypertension.
3. According to World Health Organization diagnostic criteria, osteoporosis is considered severe if
 - a. The T-score is -1.0 or lower and there is evidence of fractures.
 - b. The T-score is -2.0 or lower and there is evidence of fractures.
 - c. The T-score is -2.5 or lower and there is evidence of fractures.
 - d. The T-score is -2.5 or lower with or without fractures.
4. Which of the following statements about the relationship between T-score, risk for osteoporotic fracture, and age in women is correct?
 - a. The risk for osteoporotic fracture is related to both T-score and age, and it increases with increasing age between 50 and 80 years at a given T-score.
 - b. The risk for osteoporotic fracture is related to T-score, and it is not influenced by increases in age between 50 and 80 years at a given T-score.
 - c. The risk for osteoporotic fracture is related to age only between 50 and 70 years, and it is not influenced by changes in T-score at a given age in that range.
 - d. The risk for osteoporotic fracture is not related to T-score or age between 50 and 80 years.



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5. Which of the following statements best describes the FRAX fracture risk assessment tool?
 - a. Requires a BMD score to calculate fracture risk.
 - b. Is valid only for women.
 - c. Incorporates cost-effectiveness analyses in setting treatment thresholds.
 - d. Calculates the risk of a major osteoporotic fracture and of hip fracture within 5 years.

6. According to the National Osteoporosis Foundation’s 2008 *Clinician’s Guide to Prevention and Treatment of Osteoporosis*, in which of the following patients should BMD testing be performed?
 - a. A 68-year-old man without osteoporosis risk factors.
 - b. A 53-year-old perimenopausal woman without osteoporosis risk factors.
 - c. A 62-year-old postmenopausal woman without osteoporosis risk factors.
 - d. A 78-year-old postmenopausal woman without osteoporosis risk factors.

7. In which of the following patients is initiation of treatment to reduce fracture risk indicated based on recommendations in the National Osteoporosis Foundation’s 2008 *Clinician’s Guide to Prevention and Treatment of Osteoporosis*?
 - a. Patient with a parent with hip or vertebral fracture.
 - b. Patient with T-score -2.3 at the spine with 10-year probability of hip fracture 1% and 10-year probability of major osteoporosis-related fracture 10% based on the FRAX tool.
 - c. Patient with T-score -2.3 at the spine with 10-year probability of hip fracture 2% and 10-year probability of major osteoporosis-related fracture 10% based on the FRAX tool.
 - d. Patient with T-score -2.6 at the spine with 10-year probability of hip fracture 2% and 10-year probability of major osteoporosis-related fracture 20% based on the FRAX tool.

8. Which of the following recommendations should be included in patient consultations with women about a bone healthy lifestyle?
 - a. Try to do moderate intensity exercise for 60 minutes most days of the week.
 - b. Limit daily alcohol intake to 2 or fewer servings.
 - c. Avoid all products containing caffeine.
 - d. Evaluate home for potential hazards that could cause falls.



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9. Which of the following points should be included in patient consultations about calcium supplementation to promote bone health?
 - a. Calcium supplements should be taken in divided doses because the maximum amount of elemental calcium absorbed from a single dose is 600 mg.
 - b. Calcium supplements should not be used by patients taking teriparatide.
 - c. Calcium carbonate is best absorbed when taken on an empty stomach.
 - d. Calcium carbonate may be preferred over calcium citrate for patients who are receiving a proton pump inhibitor.

10. Which of the following represent the minimum daily intake of elemental calcium and vitamin D currently recommended by the National Osteoporosis Foundation for postmenopausal women 50 years of age or older?
 - a. 800 mg elemental calcium and 400-800 units vitamin D.
 - b. 1000 mg elemental calcium and 800-1000 units vitamin D.
 - c. 1200 mg elemental calcium and 800-1000 units vitamin D.
 - d. 2500 mg elemental calcium and 1000-2000 units vitamin D.

11. Which of the following explains the mechanism of action of denosumab in treating osteoporosis?
 - a. It binds to the receptor for activator of nuclear factor κ B (RANK) and promotes bone formation by osteoblasts.
 - b. It binds to RANK ligand (RANKL) and inhibits bone resorption by osteoclasts.
 - c. It binds to osteoprotegerin and promotes bone formation by osteoblasts.
 - d. It binds to osteoprotegerin and inhibits bone resorption by osteoclasts.

12. Which of the following statements best describes the efficacy of pharmacologic therapy for osteoporosis in postmenopausal women?
 - a. Alendronate, denosumab, risedronate, and zoledronic acid have been associated with decreased incidence of hip fractures at 3 years in large pivotal studies.
 - b. Alendronate, ibandronate, raloxifene, and zoledronic acid have been associated with decreased incidence of hip fractures at 3 years in large pivotal studies.
 - c. Teriparatide and all antiresorptive agents except calcitonin and ibandronate have been associated with decreased incidence of new vertebral fractures at 3 years in large pivotal studies.
 - d. Teriparatide and all antiresorptive agents except zoledronic acid have been associated with decreased incidence of new vertebral fractures at 3 years in large pivotal studies.



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13. Which of the following is a potential benefit of using raloxifene instead of an oral bisphosphonate for the treatment of osteoporosis in certain postmenopausal women?
 - a. Raloxifene reduces the risk of invasive breast cancer.
 - b. Raloxifene is considerably less expensive than oral bisphosphonates.
 - c. Raloxifene reduces the risk for cardiovascular disease.
 - d. Raloxifene causes no serious adverse effects.

14. Which of the following adverse effects is associated with the use of oral and intravenous bisphosphonate therapy?
 - a. Arthralgia.
 - b. Deep venous thrombosis.
 - c. Eczema.
 - d. Osteonecrosis of the jaw.

15. Which of the following agents should be reserved for patients who cannot tolerate oral bisphosphonates or who have multiple fractures or a T-score less than -3.5?
 - a. Calcitonin.
 - b. Raloxifene.
 - c. Teriparatide.
 - d. Zoledronic acid.

16. Which of the following risk factors for osteoporosis and fractures are more common in patients undergoing treatment for breast or prostate cancer compared with the general population?
 - a. Lifestyle and gastrointestinal disorders.
 - b. Hematologic disorders and rheumatic diseases.
 - c. Autoimmune diseases and medications.
 - d. Endocrine disorders and hypogonadal states.

17. According to the report of a National Comprehensive Cancer Network task force on bone health in cancer care, which of the following is the recommended frequency of dual-energy x-ray absorptiometry (DXA) scanning for a patient with breast cancer beginning hormone ablative therapy?
 - a. At baseline and every 3 months.
 - b. At baseline and every 24 months.
 - c. At baseline and every 36 months.
 - d. Not necessary because the risk of osteoporosis is very low.



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18. Which of the following agents was shown to prevent bone loss in the lumbar spine and hip in premenopausal women with breast cancer receiving a luteinizing hormone releasing hormone agonist in the Austrian Breast and Colorectal Cancer Study Group Trial-12?
- Calcitonin.
 - Raloxifene
 - Teriparatide.
 - Zoledronic acid.
19. Which of the following might be a reasonable basis for determining which women with breast cancer who are receiving aromatase inhibitors are at risk for bone loss and therefore candidates for bisphosphonate therapy?
- Aromatase inhibitor dosage.
 - Presence of osteopenia.
 - Breast cancer stage at the time of diagnosis.
 - Menopausal status at the time of diagnosis.
20. Which of the following risks is a potential limitation in the use of raloxifene for managing cancer treatment-induced bone loss (CTIBL) in patients with breast or prostate cancer?
- Osteosarcoma.
 - Osteonecrosis of the jaw.
 - Tumor progression.
 - Thrombosis.
21. Which of the following medications is of limited usefulness in the management of CTIBL in patients with breast or prostate cancer because of the risk of osteosarcoma and propagation of bone metastases?
- Calcitonin.
 - Raloxifene.
 - Teriparatide.
 - Toremifene.
22. Which of the following is a potential safety concern with the use of denosumab for the management of CTIBL?
- Osteosarcoma.
 - Osteonecrosis of the jaw.
 - Tumor progression.
 - Thrombosis.



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