

Putting Prevention into Practice

An Evidence-Based Approach

Screening for Osteoporosis

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► See related U.S. Preventive Services Task Force Recommendation Statement on page 1197.



This clinical content conforms to AAFP criteria for evidence-based continuing medical education (EB CME). See CME Quiz on page 1153.

The case study and answers to the following questions on screening for osteoporosis are based on the recommendations of the U.S. Preventive Services Task Force (USPSTF), an independent panel of experts in primary care and prevention that systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services. More detailed information on this subject is available in the USPSTF Recommendation Statement and systematic evidence review on the USPSTF Web site (<http://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <http://www.uspreventiveservices.taskforce.org/uspstf/uspstf.htm>.

Case Study

A 59-year-old black woman presents for a routine well visit. She reports that her 60th birthday is in a few days, and asks if she should make an appointment to be screened for osteoporosis. She also asks whether her husband, who is 66 years of age, should be screened as well.

Case Study Questions

1. According to the U.S. Preventive Services Task Force (USPSTF) recommendation, which one of the following is the most appropriate response to the patient's question about screening for osteoporosis?
 - A. Advise her that she does not need to be screened for osteoporosis until she is 65 years of age.
 - B. Determine her risk factors for osteoporosis and discuss her values and preferences about screening.
 - C. Advise her to be screened for osteoporosis because of her age.
 - D. Advise her that she does not need to be screened for osteoporosis because of her race.
 - E. Advise her to be screened for osteoporosis because of her race.
2. Which of the following statements about screening methods for osteoporosis are correct?
 - A. Dual-energy x-ray absorptiometry (DXA) and quantitative ultrasonography are the bone measurement tests most commonly used to screen for osteoporosis.
 - B. Quantitative ultrasonography is less expensive and more portable than DXA.
 - C. DXA predicts fractures of the femoral neck, hip, and spine more effectively than quantitative ultrasonography of the calcaneus.
 - D. Current diagnostic and treatment criteria for osteoporosis rely on DXA measurements only.
3. Which one of the following statements about osteoporosis in men is correct?
 - A. Current evidence suggests that men should be screened for osteoporosis beginning at 70 years of age.
 - B. In recent years, routine screening of men for osteoporosis has become a widespread practice.
 - C. Hip fractures are as common in men as in women.
 - D. Death is uncommon after hip fracture in men.
 - E. Current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis in men.

Answers appear on the following page.

Answers

1. The correct answer is B. The USPSTF recommends screening for osteoporosis in women 65 years or older, and in younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman with no additional risk factors. For women 50 to 64 years of age, the USPSTF urges clinicians to determine patients' risk factors for osteoporosis and to discuss their values and preferences about screening. Risk factors include low body mass index, alcohol use, smoking, parental history of hip fracture, and increased age, among others. Several instruments to predict risk of low bone mineral density and fractures have been validated for use in postmenopausal women; the USPSTF used the World Health Organization's fracture risk assessment (FRAX) tool to estimate 10-year risk of fracture.

In general, estimated fracture risks for nonwhite women are lower than those for white women of the same age. However, the USPSTF's recommendation to screen women 65 years or older for osteoporosis applies to all racial and ethnic groups.

2. The correct answers are A, B, and D. The bone measurement tests most commonly used to screen for osteoporosis are DXA of the hip and lumbar spine, and quantitative ultrasonography of the calcaneus. Quantitative ultrasonography is less expensive and more portable than DXA, does not expose patients to ionizing radiation, and can feasibly be implemented in primary care settings. Quantitative ultrasonography of the calcaneus predicts fractures of the femoral neck, hip, and spine as effectively as DXA. However, current diagnostic and treatment criteria for osteoporosis rely on DXA measurements only, and quantitative ultrasonography measurements are not interchangeable with DXA measurements.

For quantitative ultrasonography to be relevant and clinically useful, a method for converting or adapting results of quantitative ultrasonography to the DXA scale will need to be developed.

3. The correct answer is E. The USPSTF concluded that the current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis in men, regardless of age. The USPSTF identified the absence of randomized trials of primary fracture prevention in men who have osteoporosis as a critical gap in the evidence. Multiple instruments to predict risk of low bone mineral density and fractures have been developed and validated for use in postmenopausal women, but few have been validated for use in men.

Bone measurement tests may potentially detect osteoporosis in a large number of men and prevent a substantial part of the burden of fractures and fracture-related illness in this population.

Treatments that have been proven effective in women cannot necessarily be presumed to have similar effectiveness in men; because of a lack of studies, the USPSTF found inadequate evidence that drug therapies reduce the risk of fractures in men who have no previous osteoporotic fractures.

Routine screening of men is currently not a widespread practice. Although hip fractures are less common in men than in women, more than one-third of men who experience a hip fracture will die within one year.

SOURCES

U.S. Preventive Services Task Force. Screening for osteoporosis: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2011;154(5):356-364.

Nelson HD, Haney EM, Dana T, Bougatsos C, Chou R. Screening for osteoporosis: an update for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2010;153(2):99-111. ■