

# Putting Prevention into Practice

## *An Evidence-Based Approach*

## Screening for Peripheral Artery Disease and Cardiovascular Disease Risk Assessment with the Ankle-Brachial Index

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### Case Study

A 65-year-old man presents to your office for a pre-employment physical examination. He has no concerning symptoms; his medical history reveals type 2 diabetes mellitus, which he controls through diet. He works in an office and rides his bicycle to work. He is single, an occasional smoker, and drinks alcohol socially. His family history is positive for type 2 diabetes and peripheral artery disease (PAD).

### Case Study Questions

1. Which of the patient's characteristics are important risk factors for PAD?

- A. Type 2 diabetes.
- B. Current smoking.
- C. Age.
- D. Family history of PAD.

2. The U.S. Preventive Services Task Force (USPSTF) recommendation on screening for PAD and assessing cardiovascular disease (CVD) risk with the ankle-brachial index (ABI) applies to which one of the following populations?

- A. All asymptomatic adults and adolescents.
- B. Adults at high risk for PAD or CVD.
- C. Asymptomatic adults without a diagnosis of PAD, CVD, or severe chronic kidney disease.
- D. Asymptomatic men 60 years and older.
- E. Asymptomatic women 75 years and older.

3. Which one of the following statements accurately summarizes the USPSTF's findings on screening for and treatment of PAD and assessing CVD risk with the ABI?

- A. The USPSTF found adequate evidence that use of ABI in asymptomatic patients is accurate.
- B. The USPSTF found inadequate evidence that early detection of PAD leads to clinically important benefits.
- C. The USPSTF found adequate evidence that the direct harms of screening with the ABI are moderate.
- D. The USPSTF found adequate evidence that the direct harms of treatment of PAD or CVD are significant.
- E. The USPSTF found inadequate evidence that treatment of PAD leads to clinically important benefits.

Answers appear on the following page.

**See related** U.S. Preventive Services Task Force Recommendation Statement at <https://www.aafp.org/afp/2018/1215/od1.html>.

**This PPIP** quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and supporting documents on the USPSTF website (<https://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/peripheral-artery-disease-in-adults-screening-with-the-ankle-brachial-index>.

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**CME** This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 711.

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### Answers

**1. The correct answers are A, B, and C.** Important risk factors for PAD include older age, current smoking, high blood pressure, high cholesterol levels, type 2 diabetes, obesity, and physical inactivity. Current smoking and type 2 diabetes have the strongest association. Although women tend to have a slightly lower ABI than men, the prevalence of low ABI does not seem to vary significantly by sex after adjusting for age. Among healthy U.S. men 40 to 75 years of age without a history of CVD, the risk of PAD over 25 years in the absence of four conventional cardiovascular risk factors (current smoking, high blood pressure, high cholesterol levels, or type 2 diabetes) is rare (nine cases per 100,000 men per year).<sup>1</sup>

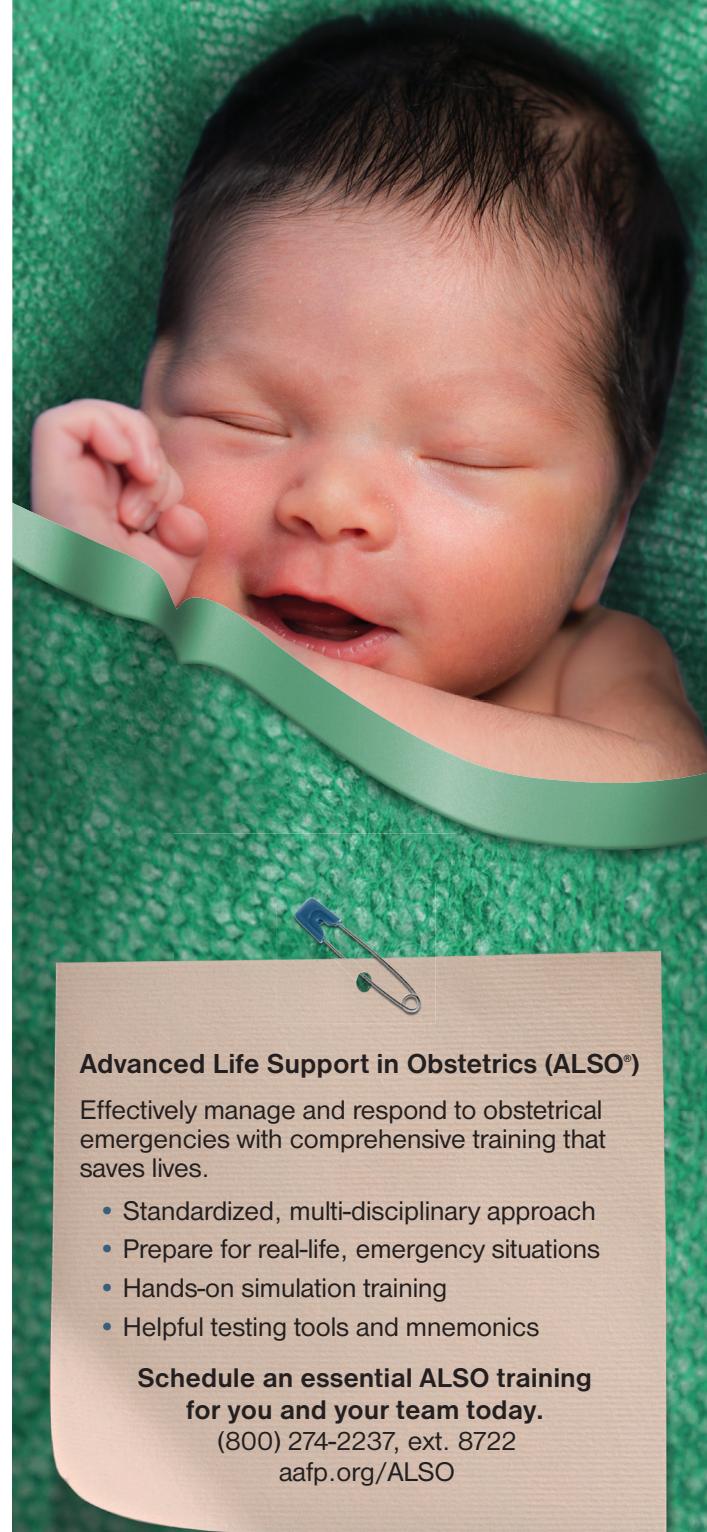
**2. The correct answer is C.** This USPSTF recommendation applies to asymptomatic adults without a known diagnosis of PAD, CVD, or severe chronic kidney disease. The recommendation does not apply to patients with risk factors. Symptoms of PAD include intermittent claudication and clinical signs of disease such as femoral bruit, pulse abnormalities, and ischemic skin changes. Patients who have these signs are not included in the recommendation and may benefit from further evaluation and treatment.

**3. The correct answer is B.** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for PAD and CVD risk with the ABI in asymptomatic adults. The USPSTF found inadequate evidence that screening for and treatment of PAD in asymptomatic patients leads to clinically important benefits in preventing the progression of PAD or preventing CVD events.<sup>2</sup> The USPSTF also found inadequate evidence on the accuracy of using the ABI as a screening test in asymptomatic patients. The USPSTF found adequate evidence that the direct harms of screening are minimal. Other harms may include false-positive test results, exposure to gadolinium or contrast media if magnetic resonance angiography or computed tomography angiography is used to confirm a diagnosis of PAD, anxiety, labeling, and opportunity costs. The harms of preventive treatment for PAD or CVD include bleeding (with aspirin use) and possibly diabetes (with statin use).

The views expressed in this work are those of the authors and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences, the Department of Defense, or the U.S. government.

### References

1. Guirguis-Blake JM, Evans CV, Redmond N, Lin JS. Screening for peripheral artery disease using the ankle-brachial index: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2018;320(2):184-196.
2. US Preventive Services Task Force. Screening for peripheral artery disease and cardiovascular disease risk assessment with the ankle-brachial index: US Preventive Services Task Force recommendation statement. *JAMA*. 2018;320(2):177-183. ■



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