

Putting Prevention into Practice

An Evidence-Based Approach

Screening for High Blood Pressure in Children and Adolescents

Iris Mabry-Hernandez, MD, MPH, Medical Officer, U.S. Preventive Services Task Force Program, Agency for Healthcare Research and Quality

Symone M. Baker, MD, Preventive Medicine Resident, Uniformed Services University of the Health Sciences

Case Study

A 10-year-old boy with obesity and a family history significant for hypertension and hyperlipidemia presents to your clinic for a well-child examination. The parents are concerned about their child's risk for hypertension and ask whether they should be monitoring his blood pressure.

Case Study Questions

1. Based on the U.S. Preventive Services Task Force (USPSTF) recommendation on screening for high blood pressure in children and adolescents, which one of the following recommendations should be given to the parents?

- ☐ A. They should monitor his blood pressure at home.
- ☐ B. Their son should be screened for high blood pressure at least annually.
- ☐ C. No screening is needed at his age.
- ☐ D. There is not enough information to assess the harms and benefits of screening for high blood pressure in children.
- ☐ E. There are more concerns about secondary hypertension at his age, which requires additional testing.

2. According to the USPSTF, which one of the following is the most important risk factor for hypertension in this child?

- ☐ A. Obesity.
- ☐ B. Male sex.
- ☐ C. Age.
- ☐ D. Family history of hyperlipidemia.
- ☐ E. He does not exhibit any risk factors.

3. According to the USPSTF, clinicians should consider which of the following when deciding whether to screen for high blood pressure in children and adolescents?

- ☐ A. Pharmacologic interventions have been shown to improve outcomes as the child ages.
- ☐ B. The presence of risk factors such as family history of hypertension.
- ☐ C. Methods for measuring blood pressure in children are limited and have high false-positive rates because elevated levels in childhood usually normalize over time.
- ☐ D. Secondary hypertension is a common diagnosis among all age groups and generally presents only with clinical manifestation of high blood pressure.

Answers appear on the following page.

See related U.S. Preventive Services Task Force Recommendation Statement at <https://www.aafp.org/afp/2021/0215/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/uspstf/recommendation/blood-pressure-in-children-and-adolescents-hypertension-screening/>.

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A collection of Putting Prevention into Practice published in *AFP* is available at <https://www.aafp.org/afp/ppip>.

CME This clinical content conforms to AAFP criteria for CME. See CME Quiz on page 331.

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Answers

1. The correct answer is D. The USPSTF concludes that current evidence is insufficient to assess the balance of benefits and harms of screening for high blood pressure in children and adolescents who are asymptomatic and are not known to have hypertension.¹ There is adequate evidence about the longitudinal association between high blood pressure in children and adolescents and high blood pressure and other intermediate outcomes in adults. However, there is inadequate evidence on the effectiveness of interventions (pharmacologic, lifestyle, or combination) for the treatment of high blood pressure in children and adolescents to demonstrate reduced blood pressure or adverse health outcomes or improved intermediate outcomes (e.g., left ventricular hypertrophy).² Secondary hypertension is a rare condition in older children; children younger than six years are more likely to have a secondary cause. There is also inadequate evidence to assess the potential harms of screening and treatment in children and adolescents.

2. The correct answer is A. Although male sex is a risk factor, the most important risk factors for primary hypertension in children and adolescents are higher body mass index and family history of hypertension. There is an increasing prevalence of hypertension in this population, likely due to childhood obesity. Family history of hyperlipidemia is not mentioned in this USPSTF recommendation statement. In a separate recommendation statement, the USPSTF recommends that clinicians screen for obesity in children six years or older and refer them to or offer a comprehensive, intensive behavioral intervention to improve weight status.³

3. The correct answers are B and C. Risk factors for hypertension in children and adolescents

include higher body mass index, family history of hypertension, low birth weight, and male sex. The increasing prevalence of hypertension in children, possibly driven by childhood obesity, suggests that identification and treatment of hypertension may become a significant health care issue. However, the performance characteristics of current methods for diagnosing hypertension in childhood are limited and of concern because of high false-positive rates, with elevated blood pressure measurements that later normalize. Pharmacologic interventions have been shown to be well tolerated, but evaluation in studies has been performed only in relatively short periods (four weeks). One justification for the suggestion of screening is to identify secondary hypertension, which is relatively rare and is typically seen in children younger than six years compared with older children and adolescents. Additionally, secondary hypertension presents with other clinical manifestations.

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

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2. Gartlehner G, Vander Schaaf EB, Orr C, et al. Screening for hypertension in children and adolescents: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2020;324(18):1884-1895.
3. Grossman DC, Bibbins-Domingo K, Curry SJ, et al. Screening for obesity in children and adolescents: US Preventive Services Task Force recommendation statement. *JAMA*. 2017;317(23):2417-2426. ■