

Screening for High Blood Pressure

U.S. Preventive Services Task Force Reaffirmation Recommendation Statement

- The U.S. Preventive Services Task Force (USPSTF) makes recommendations about preventive care services for patients without recognized signs or symptoms of the target condition.
- Recommendations are based on a systematic review of the evidence of the benefits and harms and an assessment of the net benefit of the service.
- The USPSTF recognizes that clinical or policy decisions involve more considerations than this body of evidence alone. Clinicians and policy-makers should understand the evidence but individualize decision-making to the specific patient or situation.

Summary of Recommendations and Evidence

The U.S. Preventive Services Task Force (USPSTF) recommends screening for high blood pressure in adults aged 18 and older. **This is a grade “A” recommendation.**

Rationale

Importance. Hypertension is a very prevalent condition that contributes to significant adverse health outcomes, including premature deaths, heart attacks, renal insufficiency, and stroke.

Detection. The USPSTF found good evidence that blood pressure measurement can identify adults at increased risk for cardiovascular disease due to high blood pressure. (For a summary of the recommendation and its implications for clinical practice, go to [“Screening for High Blood Pressure: Clinical Summary of U.S. Preventive Services Task Force Recommendations.”](#) For an explanation of the USPSTF grades and levels of certainty, go to [Table 1](#) and [Table 2](#).)

Benefits of detection and early treatment. The USPSTF found good evidence that treatment of high blood pressure in adults substantially decreases the incidence of cardiovascular events.

Harms of detection and early treatment. The USPSTF found good evidence that screening and treatment for high blood pressure causes few major harms.

USPSTF assessment. The USPSTF concludes that there is high certainty that the net benefit of screening for high blood pressure in adults is substantial.

Clinical Considerations

Patient population under consideration. This recommendation applies to adults without known hypertension.

Screening tests. Office measurement of blood pressure is most commonly done with a sphygmomanometer. High blood pressure (hypertension) is usually defined in adults as a systolic blood pressure of 140 mmHg or higher, or a diastolic blood pressure of 90 mmHg or higher. Because of the variability in individual blood pressure measurements, it is recommended that hypertension be diagnosed only after 2 or more elevated readings are obtained on at least 2 visits over a period of 1 to several weeks.(1)

Assessment of risk. The relationship between systolic blood pressure and diastolic blood pressure and cardiovascular risk is continuous and graded. The actual level of blood pressure elevation should not be the sole factor in determining treatment. Clinicians should consider the patient's overall cardiovascular risk profile, including smoking, diabetes, abnormal blood lipid values, age, sex, sedentary lifestyle, and obesity, when making treatment decisions.

Screening interval. Evidence is lacking to recommend an optimal interval for screening adults for hypertension. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) recommends screening every 2 years in persons with blood pressure less than 120/80 mm Hg and every year with systolic blood pressure of 120 to 139 mm Hg or diastolic blood pressure of 80 to 90 mm Hg.(2)

Pharmacological treatment. Various pharmacological agents are available to treat high blood pressure. The JNC 7 guidelines for treatment of high blood pressure can be accessed at www.nhlbi.nih.gov/guidelines/hypertension/jncintro.htm.

Nonpharmacological treatment. Nonpharmacological therapies, such as reduction of dietary sodium intake, potassium supplementation, increased physical activity, weight loss, stress management, and reduction of alcohol intake, are associated with a reduction in blood pressure. For those who consume large amounts of alcohol (> 20 drinks per week), studies have shown that reduced drinking decreases blood pressure.

Discussion

In 2003, the USPSTF reviewed the evidence for screening for hypertension in adults and found that the benefits outweigh the harms of screening.(1) The benefits of screening for hypertension are well established and therefore the USPSTF decided to do a targeted literature search. This literature search focused on finding evidence of the direct benefits of screening, the harms of screening, and the harms of treatment of screen-detected or mild to moderate severity hypertension.(3) The USPSTF found no new substantial evidence about the benefits and harms of screening for high blood pressure that would lead them to change the previous recommendation and therefore reaffirms its recommendation that clinicians screen for high blood pressure in adults age 18 years and older. The 2003 recommendation statement, 2003 evidence report, and the current summary of the updated literature search can be found at www.preventiveservices.ahrq.gov.

Recommendations of Others

The JNC 7 calls for routine blood pressure measurement at least once every 2 years for adults with a systolic blood pressure below 120 mm Hg and a diastolic blood pressure below 80 mm Hg, and every year for systolic blood pressure 120-139 and diastolic blood pressure 80-89 mm Hg.(2)

Similar recommendations have been issued by the American Heart Association (AHA) for adults beginning at age 20 years.(4)

The American Academy of Family Physicians strongly recommends that family physicians screen adults aged 18 and older for high blood pressure.(5)

The American College of Obstetricians and Gynecologists recommends measuring blood pressure as part of the periodic assessment in women 13 years or older.(6)

References

1. Sheridan S, Pignone M, Donahue K. Screening for high blood pressure: a review of the evidence for the U.S. Preventive Services Task Force. *Am J Prev Med.* 2003;25:151-8. [PMID: 12880884]
2. Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. National Heart, Lung, and Blood Institute. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension.* 2003;42:1206-52. [PMID: 14656957]
3. Wolff T, Miller T. Evidence for the reaffirmation of the U.S. Preventive Services Task Force recommendation on screening for high blood pressure. *Ann Intern Med* 2007;147:787-791.

4. Pearson TA, Blair SN, Daniels SR, Eckel RH, Fair JM, Fortmann SP, et al. AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke: 2002 Update: Consensus Panel Guide to Comprehensive Risk Reduction for Adult Patients Without Coronary or Other Atherosclerotic Vascular Diseases. American Heart Association Science Advisory and Coordinating Committee. *Circulation*. 2002;106:388-91. [PMID: 12119259]

5. American Academy of Family Physicians. Summary of Recommendations for Clinical Preventive Services. Revision 6.0; August 2005.

6. ACOG Committee on Gynecologic Practice. ACOG Committee Opinion No. 357: Primary and preventive care: periodic assessments. *Obstet Gynecol*. 2006;108:1615-22. [PMID: 17138804]

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TABLE 1

What the USPSTF Grades Mean and Suggestions for Practice*

Grade	Grade Definitions	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is moderate or high certainty that the net benefit is small.	Offer/provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

*USPSTF = U.S. Preventive Services Task Force

TABLE 2

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The U.S. Preventive Services Task Force defines *certainty* as “likelihood that the USPSTF assessment of the net benefit of a preventive service is correct.” The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
<p>High</p>	<p>The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.</p>
<p>Moderate</p>	<p>The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as:</p> <ul style="list-style-type: none"> - the number, size, or quality of individual studies; - inconsistency of findings across individual studies; - limited generalizability of findings to routine primary care practice; or - lack of coherence in the chain of evidence. <p>As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</p>
<p>Low</p>	<p>The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of:</p> <ul style="list-style-type: none"> - the limited number or size of studies; - important flaws in study design or methods; - inconsistency of findings across individual studies - gaps in the chain of evidence; - findings not generalizable to routine primary care practice; or - a lack of information on important health outcomes. <p>More information may allow an estimation of effects on health outcomes.</p>

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