

Screening for High Blood Pressure: U.S. Preventive Services Task Force Reaffirmation Recommendation Statement

U.S. Preventive Services Task Force*

Description: Reaffirmation of the 2003 U.S. Preventive Services Task Force statement about screening for high blood pressure.

Methods: The U.S. Preventive Services Task Force did a targeted literature search for evidence on the benefits and harms of screening for high blood pressure.

Recommendation: Screen for high blood pressure in adults age 18 years or older. (Grade A recommendation)

Ann Intern Med. 2007;147:783-786.

www.annals.org

For author affiliation, see end of text.

*For a list of members of the U.S. Preventive Services Task Force, see the **Appendix** (available at www.annals.org).

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.

It bases its recommendations 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 policymakers 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 age 18 years and older. This is a grade A recommendation.

Rationale

Importance

Hypertension is a prevalent condition that contributes to important adverse health outcomes, including premature death, heart attack, renal insufficiency, and stroke.

Detection

The USPSTF found good evidence that blood pressure measurement can identify adults at increased risk for cardiovascular disease from high blood pressure (Figure; Tables 1 and 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 of high blood pressure causes few major harms.

USPSTF Assessment

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

CLINICAL CONSIDERATIONS

Patient Population

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 mm Hg or higher or a diastolic blood pressure of 90 mm Hg 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 1 to several weeks (1).

See also:

Print

Related article 787
Summary for Patients 2

Web-Only

Appendix
Conversion of graphics into slides
Downloadable recommendation summary

Risk Assessment

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 in persons with systolic blood pressure of 120 to 139 mm Hg or diastolic blood pressure of 80 to 90 mm Hg (2).

Pharmacologic Treatment

Various pharmacologic 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.

Nonpharmacologic Treatment

Nonpharmacologic 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 persons 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; 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 or older. The 2003 recommendation statement, the 2003 evidence report, and the current summary of the updated literature search can be found at www.preventiveservices.ahrq.gov.

RECOMMENDATIONS OF OTHER GROUPS

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

The American Heart Association issued similar recommendations for adults beginning at age 20 years (4).

The American Academy of Family Physicians strongly recommends that family physicians screen adults age 18 years or 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 age 13 years or older (6).

From the U.S. Preventive Services Task Force, Agency for Healthcare Research and Quality, Rockville, Maryland.

Disclaimer: Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

Financial Support: The USPSTF is an independent, voluntary body. The U.S. Congress mandates that the Agency for Healthcare Research and Quality support the operations of the USPSTF.

Potential Financial Conflicts of Interest: None disclosed.

Requests for Single Reprints: Reprints are available from the USPSTF Web site (www.preventiveservices.ahrq.gov).

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;147:787-91.
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]

Figure. Screening for high blood pressure: clinical summary of U.S. Preventive Services Task Force (USPSTF) Recommendation.

Annals of Internal Medicine



AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov



Screening for High Blood Pressure: Clinical Summary of U.S. Preventive Services Task Force Recommendation

Population	Adult General Population*
Recommendation	Screen for high blood pressure Grade: A
Screening Tests	High blood pressure (hypertension) is usually defined in adults as: systolic blood pressure (SBP) of 140 mm Hg or higher; or diastolic blood pressure (DBP) of 90 mm Hg or higher. Due to 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.
Screening Intervals	The optimal interval for screening adults for hypertension is not known. The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) recommends: <ul style="list-style-type: none"> • Screening every 2 years with BP <120/80 mm Hg • Screening every year with SBP of 120–139 mm Hg or DBP of 80–90 mm Hg
Suggestions for Practice	A variety of pharmacologic agents are available to treat hypertension. JNC 7 guidelines for treatment of hypertension can be accessed at www.nhlbi.nih.gov/guidelines/hypertension/jncintro.htm . The following nonpharmacologic therapies are associated with reductions in blood pressure: <ul style="list-style-type: none"> • Reduction of dietary sodium intake • Potassium supplementation • Increased physical activity, weight loss • Stress management • Reduction of alcohol intake
Other Relevant Recommendations from the USPSTF	Adults with hypertension should be screened for diabetes. Adults should be screened for hyperlipidemia (depending on age, sex, risk factors) and smoking. Clinicians should discuss aspirin chemoprevention with patients at increased risk for cardiovascular disease. These recommendations and related evidence are available at www.preventiveservices.ahrq.gov .

*This recommendation applies to adults without known hypertension. For the full recommendation statement and supporting documents, go to www.preventiveservices.ahrq.gov.

Table 1. What the U.S. Preventive Services Task Force Grades Mean and Suggestions for Practice*

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or 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 or 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 or 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. U.S. Preventive Services Task Force Levels of Certainty Regarding Net Benefit

Level of Certainty*	Description
High	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.
Moderate	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: the number, size, or quality of individual studies inconsistency of findings across individual studies limited generalizability of findings to routine primary care practice lack of coherence in the chain of evidence. 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.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: 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 that are not generalizable to routine primary care practice a lack of information on important health outcomes. More information may allow an estimation of effects on health outcomes.

* The U.S. Preventive Services Task Force (USPSTF) 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.

APPENDIX: U.S. PREVENTIVE SERVICES TASK FORCE

Members of the U.S. Preventive Services Task Force† are Ned Calonge, MD, MPH, *Chair* (Colorado Department of Public Health and Environment, Denver, Colorado); Diana B. Petitti, MD, MPH, *Vice Chair* (Department of Preventive Medicine, Keck School of Medicine, University of Southern California, Sierra Madre, California); Thomas G. DeWitt, MD (Children's Hospital Medical Center, Cincinnati, Ohio); Leon Gordis, MD, MPH, DrPH (Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland); Kimberly D. Gregory, MD, MPH (Cedars-Sinai Medical Center, Los Angeles, California); Russell Harris, MD, MPH (University of North Carolina School of Medicine, Chapel Hill, North Carolina); George Isham, MD, MS (HealthPartners, Minneapolis, Minnesota); Michael L. LeFevre, MD, MSPH (University of Missouri School of Medicine,

Columbia, Missouri); Carol Loveland-Cherry, PhD, RN (University of Michigan School of Nursing, Ann Arbor, Michigan); Lucy N. Marion, PhD, RN (Medical College of Georgia, Augusta, Georgia); Virginia A. Moyer, MD, MPH (University of Texas Health Science Center, Houston, Texas); Judith K. Ockene, PhD (University of Massachusetts Medical School, Worcester, Massachusetts); George F. Sawaya, MD (University of California, San Francisco, San Francisco, California); Albert L. Siu, MD, MSPH (Mount Sinai Medical Center, New York, New York); Steven M. Teutsch, MD, MPH (Merck & Co., West Point, Pennsylvania); and Barbara P. Yawn, MD, MSc (Olmsted Research Center, Rochester, Minnesota).

†Members of the Task Force at the time this recommendation was finalized. For a list of current Task Force members, go to www.ahrq.gov/clinic/uspstfab.htm.