Screening for Prostate Cancer: Recommendation and Rationale

U.S. Preventive Services Task Force*

This statement summarizes the current U.S. Preventive Services Task Force (USPSTF) recommendations on screening for prostate cancer and updates the 1996 recommendations on this topic. The complete USPSTF recommendation and rationale statement on this topic, which includes a brief review of the supporting evidence, is available through the USPSTF Web site (www.preventiveservices.ahrq.gov), the National Guideline Clearinghouse (www.guideline.gov), and in print through the Agency for Healthcare Research and Quality Publications Clearinghouse (telephone, 800-358-9295; e-mail, ahrqpubs@ahrq.gov). The complete information on which this statement is based, including tables and references, is available in the accompanying article in this issue and in the summary of the evidence and systematic evidence review on the Web sites already mentioned.

Ann Intern Med. 2002;137:915-916. www.annals.org

See related article on pp 917-929.

* For a list of the members of the U.S. Preventive Services Task Force, see the Appendix.

SUMMARY OF THE RECOMMENDATION

The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routine screening for prostate cancer using prostate-specific antigen (PSA) testing or digital rectal examination (DRE). This is a **grade I recommendation.** (See **Appendix Table 1** for a description of the USPSTF classification of recommendations.)

The USPSTF found good evidence that PSA screening can detect early-stage prostate cancer but mixed and inconclusive evidence that early detection improves health outcomes. (See **Appendix Table 2** for a description of the USPSTF classification of levels of evidence.) *Screening is associated with important harms, including frequent false-positive results and unnecessary anxiety, biopsies, and potential complications of treatment of some cases of cancer that may never have affected a patient's health. The USPSTF concludes that evidence is insufficient to determine whether the benefits outweigh the harms for a screened population.*

CLINICAL CONSIDERATIONS

Prostate-specific antigen testing and DRE can effectively detect prostate cancer in its early pathologic stages. Recent evidence suggests that radical prostatectomy can reduce prostate cancer mortality in men whose cancer is detected clinically. The balance of potential benefits (the reduction of morbidity and mortality from prostate cancer) and harms (false-positive results, unnecessary biopsies, and possible complications) of early treatment of the types of cancer found by screening, however, remains uncertain. Therefore, the benefits of screening for early prostate cancer remain unknown. Ongoing screening trials, and trials of treatment versus "watchful waiting" for cancer detected by screening, may help clarify the benefits of early detection of prostate cancer.

Despite the absence of firm evidence of effectiveness, some clinicians may opt to perform prostate cancer screening for other reasons. Given the uncertainties and controversy surrounding prostate cancer screening, clinicians should not order the PSA test without first discussing with the patient the potential but uncertain benefits and the possible harms of prostate cancer screening. Men should be informed of the gaps in the evidence, and they should be assisted in considering their personal preferences and risk profile before deciding whether to be tested.

If early detection improves health outcomes, the population most likely to benefit from screening will be men 50 to 70 years of age who are at average risk and men older than 45 years of age who are at increased risk (African-American men and those with a first-degree relative with prostate cancer) (1). Benefits may be smaller in Asian-American persons, Hispanic persons, and persons in other racial and ethnic groups that have a lower risk for prostate cancer. Older men and men with other significant medical problems who have a life expectancy of fewer than 10 years are unlikely to benefit from screening (1).

Prostate-specific antigen testing is more sensitive than DRE for the detection of prostate cancer. Prostate-specific antigen screening with the conventional cut-point of 4.0 ng/dL detects a large majority of prostate cancer; however, a significant percentage of early prostate cancer (10% to 20%) will be missed by PSA testing alone (2). Using a lower threshold to define an abnormal PSA level detects more cases of cancer at the cost of more false-positive results and more biopsies.

The yield of screening in terms of cancer detected declines rapidly with repeated annual testing (1). If screening were to reduce mortality, biennial PSA screening could yield as much benefit as annual screening.

The brief review of the evidence that is normally included in USPSTF recommendations is available in the complete recommendation and rationale statement on the USPSTF Web site (www.preventiveservices.ahrq.gov).

RECOMMENDATIONS OF OTHERS

Most major U.S. medical organizations recommend that clinicians discuss with patients the potential benefits and possible harms of PSA screening, consider patient preferences, and individualize the decision to screen. They generally agree that the most appropriate candidates for screening include men older than 50 years of age and younger men at increased risk for prostate cancer but that screening is unlikely to benefit men who have a life expectancy of fewer than 10 years. These organizations include the American Academy of Family Physicians, the American Cancer Society, the American College of Physicians–American Society of Internal Medicine, the American Medical Association, and the American Urological Association (3–7). None of these organizations endorses universal or mass screening for any group of men. In 1994, the Canadian Task Force on Preventive Health Care recommended against the routine use of PSA or transrectal ultrasonography as part of the periodic health examination (8); while recognizing the limitations of DRE, it concluded that the evidence was insufficient to recommend that physicians discontinue use of DRE in men 50 to 70 years of age. The Canadian Task Force is in the process of updating its recommendations.

APPENDIX

Members of the U.S. Preventive Services Task Force are Alfred O. Berg, MD, MPH, *Chair* (University of Washington, Seattle, Washington); Janet D. Allan, PhD, RN, *Vice-Chair* (Dean, School of Nursing, University of Maryland, Baltimore, Baltimore, Maryland); Paul Frame, MD (Tri-County Family Medicine, Cohocton, and University of Rochester, Rochester, New York); Charles J. Homer, MD, MPH (National Initiative for Children's Healthcare Quality, Boston, Massachusetts); Mark S. Johnson, MD, MPH (University of Medicine and Dentistry of New Jersey–New Jersey Medical School, Newark, New Jersey); Jonathan D. Klein, MD, MPH (University of Rochester School of Medicine, Rochester, New York); Tracy A. Lieu, MD, MPH (Harvard Pilgrim Health Care and Harvard Medical School, Boston, Massachusetts); Cynthia D. Mulrow, MD, MSc (University of Texas Health Science Center, San Antonio, Texas [member and affiliation at time recommendation was finalized]); C. Tracy Orleans, PhD (The Robert Wood Johnson Foundation, Princeton, New Jersey); Jeffrey F. Peipert, MD, MPH (Women and Infants' Hospital, Providence, Rhode Island); Nola J. Pender, PhD, RN (University of Michigan, Ann Arbor, Michigan); Albert L. Siu, MD, MSPH (Mount Sinai School of Medicine, New York, New York); Steven M. Teutsch, MD, MPH (Merck & Co., Inc., West Point, Pennsylvania); Carolyn Westhoff, MD, MSc (Columbia University, New York, New York); and Steven H. Woolf, MD, MPH (Virginia Commonwealth University, Fairfax, Virginia).

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Appendix Table 1. **U.S. Preventive Services Task Force Grades and Recommendations***

Grade	Recommendation
A	The USPSTF strongly recommends that clinicians routinely provide [the service] to eligible patients. *The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.*
B	The USPSTF recommends that clinicians routinely provide [the service] to eligible patients. *The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.*
C	The USPSTF makes no recommendation for or against routine provision of [the service]. *The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.*
D	The USPSTF recommends against routinely providing [the service] to asymptomatic patients. *The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.*
I	The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. *Evidence that the [service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.*

* The U.S. Preventive Services Task Force (USPSTF) grades its recommendations according to one of five classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms).

Appendix Table 2. **U.S. Preventive Services Task Force Grades for Strength of Overall Evidence***

Grade	Definition
Good	Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes
Fair	Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies; generalizability to routine practice; or indirect nature of the evidence on health outcomes
Poor	Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes

* The U.S. Preventive Services Task Force (USPSTF) grades the quality of the overall evidence for a service on a three-point scale (good, fair, poor).

References

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2. **Harris RP, Lohr KN, Beck R, Fink K, Godley P, Bunton A.** Screening for Prostate Cancer. Systematic Evidence Review No. 16 (Prepared by the Research Triangle Institute—University of North Carolina Evidence-based Practice Center under Contract no. 290-97-0011). Rockville, MD: Agency for Healthcare Research and Quality, December 2001. Available on the AHRQ Web site at www.ahrq.gov/clinic/serfiles.htm.

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