Screening for Skin Cancer

Recommendations and Rationale

U.S. Preventive Services Task Force

This statement summarizes the current U.S. Preventive Services Task Force (USPSTF) recommendation for screening for skin cancer and the supporting scientific evidence, and it updates the 1995 recommendations contained in the *Guide to Clinical Preventive Services*, second edition.[1] Explanations of the ratings and of the strength of overall evidence are given in Appendix A and in Appendix B, respectively. The complete information on which this statement is based, including evidence tables and references, is available in the article Screening for Skin Cancer[2] (which follows this recommendation) and in the Systematic Evidence Review[3] on this topic. These documents, along with reprints, can be obtained through the USPSTF Web site (www.ahrq.gov/clinic/uspstfix.htm), through the National Guideline Clearinghouse™ (www.guideline.gov), or in print through the AHRQ Publications Clearinghouse (call 1-800-358-9295 or e-mail ahrqpubs@ahrq.gov).

This first appeared in *Am J Prev Med.* 2001;20(suppl 3):44-46.

Summary of Recommendation

- The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routine screening for skin cancer using a total-body skin examination for the early detection of cutaneous melanoma, basal cell cancer, or squamous cell skin cancer. **I recommendation.**

Evidence is lacking that skin examination by clinicians is effective in reducing mortality or morbidity from skin cancer. The USPSTF could not determine the benefits and harms of periodic skin examination. (See "Clinical Considerations" for discussion of selected populations at high risk.)

Other strategies to prevent skin cancer, such as counseling to reduce risky health behaviors and performance of skin self-examination, will be addressed in a separate recommendation.

Clinical Considerations

- **Benefits from screening are unproven, even in high-risk patients.** Clinicians should be aware that fair-skinned men and women aged older than 65 years, patients with atypical moles, and those with more than 50 moles constitute known groups at substantially increased risk for melanoma.
- **Clinicians should remain alert for skin lesions with malignant features noted in the context of physical examinations performed for other purposes.** Asymmetry, border irregularity, color variability, diameter >6 mm ("A," "B," "C," "D"), or rapidly changing lesions are features associated with an increased risk of malignancy. Suspicious lesions should be biopsied.
- **The USPSTF did not examine the outcomes related to surveillance of patients with familial syndromes, such as familial atypical mole and melanoma (FAM-M) syndrome.**

Corresponding Author: Alfred O. Berg, MD, MPH, Chair, U.S. Preventive Services Task Force, c/o David Atkins, MD, MPH, Chief Medical Officer, U.S. Preventive Services Task Force, Agency for Healthcare Research and Quality, Center for Practice and Technology Assessment, 6010 Executive Boulevard, Suite 300, Rockville, MD 20852. (301) 594-4016, fax (301) 594-4027, E-mail: datkins@ahrq.gov.

Scientific Evidence

Epidemiology and Clinical Consequences

In the United States, the lifetime risk of dying of melanoma is 0.36% among men and 0.21% among women. Between 1973 and 1995 the incidence of melanoma increased from 5.7 per 100,000 to 13.3 per 100,000. Although primary prevention efforts have focused on young people, the elderly (especially elderly men) bear a disproportionate burden of morbidity and mortality from melanoma and nonmelanoma skin cancer. Men aged older than 65 years (5.2% of the U.S. population) are diagnosed with 22% of the new cases of malignant melanoma each year; women aged older than 65 years (7.4% of the population) are diagnosed with 14% of new cases. In the elderly, melanoma tends to be diagnosed at a later stage and is more likely to be lethal than it is in the general population.

Basal cell and squamous cell carcinomas, in contrast to melanoma, are very common, especially in the elderly. However, they cause limited morbidity or mortality even in the absence of formal screening.

Accuracy and Reliability of Screening Test

The most commonly advocated screening test for skin cancer is a total-body skin examination by a clinician. Although data are sparse and based entirely on studies of volunteer patients, the sensitivity and specificity of a total-body skin examination performed by a dermatologist for the diagnosis of skin cancer are reported to be high, 94% and 98%, respectively. Data regarding the accuracy of the total-body skin examination performed by nonspecialists are few, but suggest slightly lower sensitivity and much lower specificity than examinations performed by dermatologists.

Another screening strategy is to use a questionnaire or interview to assess risk factors such as family history and sun exposure and refer only high-risk patients for total-body skin examinations. Clinicians and patients can reliably measure some risk factors for melanoma, but the validity of formal risk-assessment tools to screen unselected patients in primary care has not been established.

Yield of Screening Test

While dependent on the population screened, rates of suspected melanoma in mass screening, case finding, and population-based screening range from 0 to 9 per 100 people screened, with the most common findings between 1 and 3 per 100. Rates of confirmed melanoma and melanoma in situ are commonly in the range of 1 to 4 per 1,000 people screened. One to 5% of screened patients are confirmed to have nonmelanoma skin cancer.

Effectiveness of Early Detection

There are no randomized trials or case-control studies that directly examine whether screening by clinicians is associated with improved clinical outcomes such as reduced morbidity or mortality from skin cancer. The possibility that earlier treatment as a result of screening improves health outcomes must rely on indirect evidence.

Screening consistently identifies melanomas that are, on average, thinner (ie, at an earlier stage) than those found during usual care. It is not known if this stage shift leads to decreased morbidity or mortality. A case-control study in which skin self-examination was associated with a lower incidence of lethal melanoma provides indirect evidence that the shift to earlier stages found in screening may be associated with better clinical outcomes. Evidence from studies of the consequences of delay in diagnosis is inconsistent.

Even without formal screening programs, mortality from basal cell and squamous cell carcinoma is low compared to mortality from melanoma, but early detection and treatment may reduce morbidity and disfigurement from these cancers. No studies were found that evaluated whether screening improves the outcomes of these cancers.

Potential Adverse Effects of Screening

There are no serious risks from total-body skin examination, but examination may be embarrassing to some patients and inconvenient in some settings. Screening could result in unnecessary treatment, either due to misdiagnosis or to detection of lesions that might not have caused clinical consequences. Screening also detects large numbers of benign skin conditions, which are very common in the elderly and could lead to additional biopsies and unnecessary or expensive procedures.

Discussion

Periodic total-body skin examination can increase the detection of thin (earlier stage) melanoma; however, controlled studies are needed to determine whether early detection would actually have an important effect on mortality. Additional questions remain about the ability of primary care clinicians to perform adequate examinations in the context of usual care. Studies of skin health behaviors and studies of factors associated with advanced melanoma suggest that older persons are at high risk and are unlikely to benefit from existing skin cancer prevention efforts such as public education and clinician education efforts regarding sun avoidance and/or sun protection. While it is unproven, skin cancer screening (using a risk assessment strategy with examination or referral of high-risk patients) is the most promising strategy for addressing the excess burden of disease in older persons. Since most elderly individuals consult a clinician at least yearly, case finding by clinicians focusing on the elderly may reach vulnerable individuals who may not benefit from other approaches.

Recommendations of Others

The Canadian Task Force on Preventive Health Care concluded that the evidence was insufficient to recommend for or against skin cancer screening for the general population, but suggests that regular total-body skin examination may be prudent for a subgroup of very high-risk individuals.[4] The American Cancer Society recommends skin examination as part of a cancer-related checkup every 3 years for people aged between 20 and 40 years, and on a yearly basis for anyone aged older than 40 years.[5] The American College of Preventive Medicine recommends total-body skin examination in high-risk individuals, including those with a family or personal history of skin cancer, predisposing phenotypic characteristics, and increased occupational or recreational exposure to sunlight, or clinical evidence of precursor lesions (eg, dysplastic or congenital nevi), but does not recommend routine screening.[6] The American College of Obstetricians and Gynecologists recommends yearly, or as appropriate, skin examination of women aged 13 years or older based on risk factors (increased recreational or occupational exposure to sunlight, family or personal history of skin cancer, clinical evidence of precursor lesions).[7] A National Institutes of Health (NIH) Consensus Panel recommends screening for melanoma as part of routine primary care.[8] The Australian National Health and Medical Research Council does not recommend mass screening or screening of high-risk people for melanoma.[9] All of these organizations advise public or patient education to change behaviors that may increase the risk of skin cancer, including sun avoidance, sun protection and skin self-examination.

References

1. U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services*. 2nd ed. Washington, DC: Office of Disease Prevention and Health Promotion, U.S. Government Printing Office; 1996.

2. Helfand M, Jahon SM, Eden KB, Frame PS, Orleans CT. Screening for skin cancer. *Am J Prev Med.* 2001;47-58.

3. Helfand M, Mahon S, Eden K. *Screening for Skin Cancer*. Systematic Evidence Review No. 2 (Prepared by the Oregon Health & Science University Evidence-based Practice Center under Contract No. 290-97-0018). AHRQ Publication No. 01-S002. Rockville, MD: Agency for Healthcare Research and Quality. April 2001. (Available on the AHRQ Web site at: www.ahrq.gov/clinic/serfiles.htm).

4. Feightner JW. Prevention of skin cancer. In: Canadian Task Force on the Periodic Health Examination. *Canadian Guide to Clinical Preventive Health Care.* Ottawa: Health Canada, 1994; 850-859.

5. American Cancer Society. Melanoma: Detection and Symptoms. Available at: http://www3.cancer.org/cancerinfo/. Accessed February 15, 2001.

6. Ferrini RL, Perlman M, Hill L. American College of Preventive Medicine policy statement: screening for skin cancer. *Am J Prev Med.* 1998;14:80-82.

7. American College of Obstetricians and Gynecologists Committee on Gynecologic Practice. Primary and preventive care: periodic assessments. Committee opinion no. 246. Washington, DC: American College of Obstetricians and Gynecologists; 2000.

8. NIH Consensus Development Panel on Early Melanoma. Diagnosis and treatment of early melanoma. *JAMA.* 1992;268:1314-1319.

9. National Health and Medical Research Council. *Guidelines for Preventive Interventions in Primary Health Care: Cardiovascular Disease and Cancer*. Report of the Assessment of Preventive Activities in the Health Care System Initiative. Canberra, Australia: National Health and Medical Research Council, Commonwealth of Australia; 1996.

Appendix A
U.S. Preventive Services Task Force - Recommendations and Ratings

The Task Force grades its recommendations according to one of 5 classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms):

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.*

Appendix B
U.S. Preventive Services Task Force - Strength of Overall Evidence

The USPSTF grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor):

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.

AHRQ Pub. No. 02-502A
April 2001