



# Effective Health Care

## Prevention and Early Detection of Skin Cancer Nomination Summary Document

### Results of Topic Selection Process & Next Steps

- The topic of prevention of skin cancer was found to be addressed by an in-process update to a 2003 AHRQ report for the U.S. Preventive Services Task Force (USPSTF). Given that the in-process AHRQ report covers this nomination, no further activity will be undertaken on this topic.
  - Helfand M, Krages K. Counseling to Prevent Skin Cancer. Summary of the Evidence for the U.S. Preventive Services Task Force. Rockville, MD: Department of Health and Human Services, Agency for Healthcare Research and Quality. 2003. (Update in process)  
<http://www.ahrq.gov/clinic/3rduspstf/skccoun/skcounsum.pdf>
  - To sign up for notification when this and other USPSTF topics are posted, please go to <http://www.ahrq.gov/clinic/prevenix.htm>.
- The topic of noninvasive diagnosis of skin cancer is not feasible for a full systematic review due to the limited data available for a review at this time; however, it will be considered for a potential technical brief by the Effective Health Care (EHC) Program.
  - To see a description of a technical brief, please go to <http://effectivehealthcare.ahrq.gov/index.cfm/research-for-policymakers-researchers-and-others/>.
  - If this topic is developed into a technical brief, key questions will be drafted and posted on the AHRQ Web site. To sign up for notification when this and other EHC Program topics are posted, please go to <http://effectivehealthcare.ahrq.gov/index.cfm/join-the-email-list1/>.

### Topic Description

**Nominator:** Anonymous individual

**Nomination Summary:** This nomination addresses the prevention and diagnosis of skin cancer and includes the effectiveness of methods for prevention of skin cancer for people who have/and have not had skin cancer and the benefits and harms associated with these prevention measures. Prevention measures specifically mentioned by the nominator include topical sunscreens (different formulations and those containing oxybenzone), special protective clothing, and vitamin D. Non-invasive diagnostic methods of interest to the nominator include epidermal genetic tape stripping, confocal microscopy, "Scent"/"odor", full body photography, and ultraviolet photography. The nominator mentions that differences in patients by racial category as well as differences between patients who have previously had skin cancer and those who have not should be considered.

Prevention:

**Population(s):** Caucasians, African-Americans, Hispanics; subpopulations of age, race, and new or recurrent cases

**Intervention(s):** Methods of preventing skin cancer (sunscreen, clothing, vitamin D)

**Comparator(s):** Other methods of skin cancer prevention, esp. different formulations of sunscreen

**Outcome(s):** Reduced skin cancer incidence and harms

Diagnosis:

**Population(s):** Caucasians, African-Americans, Hispanics; subpopulations of age, race, and skin cancer survivors

**Intervention(s):** Noninvasive diagnostic techniques

**Comparator(s):** Other noninvasive or invasive (biopsy) techniques

**Outcome(s):** Improvements in detection, screening, and diagnosis of skin cancer; reduced harms (disfigurement, misdiagnoses, side effects, cost)

**Key Questions from Nominator:**

1. How effective are topical sunscreens, special protective clothing, and vitamin D in preventing skin cancer for people who have never had skin cancer as well as people who have been treated for skin cancer?
2. In addition, what are the balance of harms and benefits of different sunscreen formulations in preventing (or promoting) the development of skin cancer, particularly those containing oxybenzone?
3. What are effective methods for prevention and early detection of skin cancers among Caucasians, African-Americans, and Hispanics?
4. How can new cancerous tumors on the skin be effectively diagnosed in skin cancer survivors, particularly in ways that can avoid unnecessary skin biopsies?
5. What is the comparative effectiveness of new, noninvasive techniques for diagnosing and preventing skin cancer?

## Considerations

- This topic has two main areas of focus:
  1. Prevention of skin cancer
  2. Noninvasive diagnosis of skin cancer
- The topic of prevention of skin cancer meets EHC Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
  - Prevention of skin cancer was found to be addressed by the 2003 AHRQ report titled *Counseling to Prevent Skin Cancer*. This report is currently being updated as a systematic review to facilitate the update of the 2003 USPSTF recommendations. Key questions from the update include:
    1. Is there direct evidence that counseling patients in sun-protective behaviors (decreasing sun exposure, avoidance of indoor tanning, and using sunscreen) reduces intermediate outcomes (sunburns, nevi, or actinic keratoses) or skin cancer (melanoma, SCC, or BCC)?
    2. Do primary care relevant counseling interventions change sun-protective behaviors (decreasing sun exposure, avoidance of indoor tanning, and using sunscreen)?

3. Do primary care relevant counseling interventions have adverse effects?
  4. Is sun exposure (intentional or unintentional), indoor tanning, or sunscreen use associated with skin cancer outcomes?
  5. Are sun-protective behaviors associated with adverse effects (e.g., increased time spent in the sun, reduced physical activity, dysphoric mood, vitamin D deficiency)?
- The topic of noninvasive diagnosis of skin cancer meets EHC Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
    - While the accessibility of the skin to simple visual inspection and the relative ease of skin biopsy have eased the way for skin cancer diagnosis, dermatologists have recently begun to incorporate novel imaging techniques into diagnostic algorithms. For skin cancer, a biopsy specimen obtained for histopathologic examination to diagnose skin cancer is considered the reference standard; however, biopsy may be a time-consuming, expensive, and sometimes mutilating and painful experience to the patient.
    - A literature scan identified a lack of guidance on the use of these noninvasive technologies in the United States. In addition, we were unable to identify any one publication that addressed all the forms of noninvasive diagnosis discussed in the nomination.
    - Given the small amount of literature on photography and the lack of literature on the other areas of the nomination (genetic tape stripping, confocal microscopy, “scent”/“odor”), it does not appear that a comparative effectiveness review on this topic would be feasible. However, the topic of noninvasive diagnosis of skin cancer may be a good candidate for a technical brief. A technical brief could outline any potential gaps in the literature related to the use of these technologies in minority groups and skin cancer survivors that may be identified during the literature review. Dermoscopy should be considered as an addition to the scope of this topic, including issues around feasibility of dermoscopy in the real world.