

# American College of Preventive Medicine Policy Statement: Screening for Skin Cancer

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Based on a review of current literature and recommendations, the American College of Preventive Medicine presents a practice policy statement on screening for skin cancer. (Am J Prev Med 1998;14:80-82) © 1998 American Journal of Preventive Medicine

## Burden of Suffering

**N**onmelanoma skin cancers are the most common cancers in men and women in the United States. In 1996, approximately 800,000 new cases of basal and squamous cell carcinoma (nonmelanoma skin cancer—NMSC) will be diagnosed, with 2,100 deaths attributed to these cancers.<sup>1</sup> Although less common, cutaneous malignant melanoma (MM) is a more frequent cause of skin cancer death. The incidence of cutaneous malignant melanoma is increasing around the world, and currently malignant melanoma has the most rapid rise in incidence rate of all cancers in the Caucasian population.<sup>2</sup> In 1997, there were an estimated 40,300 new cases and 7,300 deaths in the United States from melanoma.<sup>3</sup> The lifetime incidence of melanoma in the United States is 1 per 90 persons.<sup>4</sup> The prevalence of MM is at least 80 per 100,000 people,<sup>5</sup> making it the eighth most common cancer in the U.S. From 1960 to 1991, 5-year survival rates for whites with MM have increased from 60% to 87%.<sup>1</sup> Mortality is reduced when lesions are detected early and promptly removed. Risk factors for NMSC include exposure to sunlight or radiation, fair skin, advancing age, and male sex. Risk factors for melanoma are more controversial, but include sun-reactive skin (Types I-II),<sup>6</sup> family history, multiple pigmented nevi, and severe childhood sunburn.<sup>7</sup>

## Description of Preventive Measures

Skin cancer screening involves a 2- to 3-minute visual inspection of the patient's entire body (total cutaneous examination or TCE), including the scalp, hands, and feet. Inclusion of questions regarding sun exposure,

sun protection, and family history of melanoma in the clinical history, as well as educating at-risk patients on signs, symptoms, and prevention of skin malignancy, is often included in TCE. TCE is preferable to examining only the sunlight-exposed areas of the body because of its ability to detect more lesions.<sup>8,9</sup> However, there is often inter-examiner disagreement regarding skin lesions during screening and a tendency to overdiagnose in the screening setting.<sup>10</sup> Although early identification of melanoma is the primary goal, identification of NMSC and precursor lesions is also important because risk factors for the two cancers are similar.<sup>11</sup> Skin self-examination and investigational screening strategies (e.g., thermography) are not discussed here.

## Evidence of Effectiveness

TCE is a noninvasive, quick, and sensitive (89%–97%) screening procedure if done by a physician qualified in the identification of skin cancers.<sup>12</sup> One study reported sensitivity of 93.3%, specificity 97.8%, positive predictive value 54%, and negative predictive value of 99.8% when TCE is conducted by dermatologists,<sup>13</sup> although other researchers report somewhat lower numbers.<sup>14</sup> In theory, prevention, education, and early detection should reduce melanoma morbidity and mortality as the cancer is external and visible, risk factors are known, and early detection of melanoma is associated with a high 5-year survival rate.<sup>12</sup> To date, no randomized clinical trial has evaluated the effectiveness of periodic screening on reducing melanoma mortality. Data in support of TCE is primarily based on numbers and stage of malignancies detected during community-wide screenings, case-control studies, and observational studies. An international observational trial in Edinburgh (1982–1990) reported increased incidence, increased percentage of thin tumors, and increased 5-year survival after implementation of a nationwide educational and screening campaign.<sup>15</sup>

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Studies of high-risk populations report that patients routinely screened by dermatologists have mean tumor thickness of detected MM that are thinner than that of historical or population-based controls.<sup>16,17</sup> In one U.S. series of the general population, 21% of those consenting to total skin examination had clinically significant lesions<sup>9</sup>; however, only a few were MM. The American Academy of Dermatology/American Cancer Society program of skin cancer screening examined 500,000 people of various risk categories between 1985 and 1991 and diagnosed more than 35,000 NMSC and 3,500 presumed melanoma, most of them in the early stages.<sup>18</sup> However, observational and case-control studies may be confounded by lead and length-time biases.<sup>19</sup>

Effectiveness of skin cancer screening is thought to be increased if targeted to high-risk persons—e.g., Caucasian patients greater than age 20 with atypical mole syndrome or congenital melanocytic nevi, patients with specific phenotypic traits (many freckles, fair complexion, blond or red hair, tendency to sunburn, inability to tan, blue eyes classified as sun-reactive skin types I or II), or patients with a history of NMSC.<sup>11</sup> Possible negative effects of screening include patient embarrassment, patient anxiety or worry, physician and patient time, unnecessary biopsies, and disfiguring scarring of skin.

### **Public Policy Considerations**

Despite the rising incidence of MM and the high prevalence of NMSC, primary-care physicians do not consistently examine the skin.<sup>20</sup> If the entire Caucasian population of the United States (186 million people) were to undergo annual screening for MM, it is theorized that the majority of the 38,000 MM detected annually would be curable; however, costs would be substantial. Directing surveillance efforts toward high-risk individuals may be the most practical and cost-effective way to reduce the mortality from MM. There is some evidence that those at highest risk of skin cancers are also those who are attracted to skin cancer screening, although women are disproportionately represented among attendees.<sup>20,21</sup> Skin cancer screening may be done in the office of the primary-care physician, by dermatologists, or through community-wide screening programs.<sup>22</sup>

### **Recommendations of Other Groups**

The American Cancer Society recommends cancer check-up including skin examination every 3 years for those aged 20–39 and annually after age 40. The American Academy of Dermatology, Skin Cancer Foundation, and the 1992 National Institutes of Health Consensus Conference on Early Melanoma recommend annual screening for all patients. The National

Cancer Institute encourages routine examination of the skin, with particular emphasis on high-risk groups. The Canadian Task Force on the Periodic Health Examination finds fair evidence to include inspection of the skin in the periodic health examination for those at high risk, such as outdoor workers and those in contact with polycyclic aromatic hydrocarbons, but fair evidence for exclusion of the general population from routine skin cancer screening. The U.S. Preventive Task Force, American Academy of Family Physicians, and American College of Obstetrics and Gynecology recommend screening only for high-risk populations with family or personal history of skin cancer, increased occupational or recreational exposure to sunlight, or clinical evidence of precursor lesions, e.g., dysplastic or congenital nevi.

### **Rationale Statement**

Malignant melanoma is an increasingly common public health problem and a deadly cancer. Because the lesion is external and visible, risk factors are known, and thin tumors are associated with a high 5-year survival rate, early detection should decrease melanoma morbidity and mortality. Large-scale screening and educational programs have been implemented worldwide, but these studies are uncontrolled, utilize volunteers, and evaluation of their effectiveness is hampered by lead and length-time bias. Observational and case-control studies suggest that screening seems to attract those at highest risk and may detect lesions at an earlier stage, thereby decreasing mortality. The efficacy of early detection and screening programs in reducing mortality from MM remains untested by randomized clinical trials. Screening campaigns have definite undesirable effects in terms of creating anxiety and incurring extra health expenditures. Research has not clarified which type of practitioners are qualified to examine skin, although studies show that dermatologists are better at identifying melanoma and atypical nevi compared to nondermatologists.<sup>23</sup>

### **Recommendations of the American College of Preventive Medicine**

The American College of Preventive Medicine (ACPM) recommends periodic total cutaneous examinations be performed, targeting populations at high risk for malignant melanoma. The ACPM, however, finds insufficient evidence to characterize periodicity of skin examinations more precisely. Those at high risk include individuals with family or personal history of skin cancer, predisposing phenotypic characteristics, and increased occupational or recreational exposure to sunlight, or clinical evidence of precursor lesions—

e.g., dysplastic or congenital nevi. The ACPM also recommends that practitioners who perform skin examinations undergo training to assure high-quality examinations and to reduce unnecessary biopsies. Further research efforts, in the form of well-conducted observational or case-controlled studies, or randomized clinical trials, are needed to better elucidate both the interval and the risk-benefit ratio of screening skin examinations for various populations.

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