Complete Summary

GUIDELINE TITLE

Screening for skin cancer: a clinical practice guideline.

BIBLIOGRAPHIC SOURCE(S)

From L, Marrett L, Rosen C, Zwaal C, Johnston M, Bak K, Sibbald G, Fong J, Mai V. Screening for skin cancer: a clinical practice guideline. Toronto (ON): Cancer Care Ontario (CCO); 2007 Jun 19. 33 p. (Evidence-based series; no. 15-1). [79 references]

GUIDELINE STATUS

This is the current release of the guideline.

The EVIDENCE-BASED SERIES report, initially the full original Guideline, over time will expand to contain new information emerging from their reviewing and updating activities.

Please visit the Cancer Care Ontario Web site for details on any new evidence that has emerged and implications to the guidelines.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Melanoma, basal cell carcinoma, and squamous cell carcinoma of the skin

GUIDELINE CATEGORY

Counseling
Risk Assessment
Screening

CLINICAL SPECIALTY

Dermatology
Family Practice
Internal Medicine
Oncology
Preventive Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To evaluate whether primary care providers should routinely perform total-body skin examination on members of the general population to screen for melanoma, basal cell carcinoma, and squamous cell carcinoma of the skin
- To evaluate whether primary care providers should routinely counsel members of the general population to perform skin self-examination for early detection of melanoma, basal cell carcinoma, and squamous cell carcinoma of the skin
- To evaluate whether individuals at high risk for melanoma, basal cell carcinoma, and squamous cell carcinoma of the skin should be offered surveillance by a physician, including total-body skin examination and counselling to perform skin self-examination
- To determine the characteristics clinicians should assess in order to determine risk for melanoma, basal cell carcinoma, and squamous cell carcinoma of the skin

TARGET POPULATION

Members of the general population

INTERVENTIONS AND PRACTICES CONSIDERED

1. Risk assessment
2. Total-body skin examination
3. Counselling on skin self-examination

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Literature Search Strategy

Literature searching was conducted in three stages.

Stage 1: Clinical Practice Guidelines

For the first stage, the following Web sites were searched in February 2003 and August 2006 to locate existing practice guidelines published in English: Guideline Advisory Committee (http://gacguidelines.ca/), Canadian Medial Association Infobase of Clinical Practice Guidelines (http://mdm.ca/cpgsnew/cpgs/), National Guideline Clearinghouse (http://www.guideline.gov/), MEDLINE (Ovid, 1996-August 2006), National Comprehensive Cancer Network (http://www.nccn.org/), National Institute for Clinical Excellence (http://www.nice.org.uk/), American Society of Clinical Oncology (http://www.asco.org/), Scottish Intercollegiate Guidelines Network (http://www.sign.ac.uk/), Canadian Dermatology Association (http://www.dermatology.ca/), and the American Academy of Dermatology (http://www.aad.org/). The text of each guideline report was scanned for references to other guidelines.

Stage 2: Primary Evidence on Screening for Skin Cancer

The second stage was a search for systematic reviews and studies of skin cancer screening published between 1999 and August 2006. This search was conducted to find evidence published after the completion of the most recent evidence-based screening guideline found by the search above. Sources searched included MEDLINE (Ovid), EMBASE (Ovid), and the Cochrane Library (2006, Issue 3). Separate searches were conducted for systematic reviews and primary studies (clinical trials, prospective cohort studies, or case-control studies). Individual search strategies were devised for each database, using text words and subject headings such as "skin neoplasms," "skin," "cancer," "carcinoma," "squamous," "basal," "melanoma," "mass screening," physical examination," and "skin examination".

Stage 3: Risk Factors for Skin Cancer

MEDLINE, EMBASE, and personal files were searched for recent reviews and key studies on risk factors for skin cancer.

Study Selection Criteria

Inclusion Criteria

Clinical Practice Guidelines

To be considered for inclusion as evidence-based clinical practice guidelines, guideline reports were required to:

- Contain explicit recommendations about screening for skin cancer with total body skin examination or skin self-examination
- Document a systematic review of the literature
- List references for the evidence considered

Primary Evidence on Screening for Skin Cancer

Studies were eligible for the evidence review if they:

- Were clinical trials with an intervention and control group (randomized or non-randomized), comparative cohort studies, or case-control studies
- Evaluated screening using total body skin examination or skin self-examination
- Included members of the general population or individuals at increased risk of skin cancer
- Screened for melanoma, basal cell carcinoma, or squamous cell carcinoma of the skin

Ideally, guideline recommendations would be based on evidence from randomized controlled trials. In the absence of randomized trials, other types of comparative studies were included. For screening manoeuvres without evidence from comparative studies, prospective single-cohort studies were considered.

Risk Factors for Skin Cancer

A comprehensive systematic review of the evidence on risk factors for skin cancer was beyond the scope of this guideline report. Instead, the panel summarized quantitative evidence available from published reviews and key primary studies.

Exclusion Criteria

- Abstracts, letters, and editorials were not eligible for inclusion in the systematic review of the evidence.
- Literature searches for primary studies on screening were not restricted by language, but searches for guidelines and information about risk factors were restricted to papers published in English.

NUMBER OF SOURCE DOCUMENTS

Three evidence-based practice guidelines, one case-control study, and two comparative studies were reviewed.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Data from screening studies were not pooled quantitatively. Only three comparative studies were found, and they had different designs, interventions, and primary outcome variables.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

This Evidence-Based Series was developed by the Skin Screening Guidelines Panel of Cancer Care Ontario's (CCO's) Program in Evidence-based Care (PEBC). The panel included dermatologists, a family physician, an epidemiologist, and Cancer Care Ontario's Acting Vice-President, Preventive Oncology.

While the panel agreed in principle with the recommendations made in the United States (U.S.), Canadian, and Australian guidelines, they decided that it was worthwhile to develop their own guideline report. The Ontario guideline integrates and updates the work done by the U.S., Canadian, and Australian groups and presents recommendations in a format consistent with other guidelines from the PEBC. The panel felt that, to be most useful to its target audience (primary care providers and dermatologists), the guideline should deal separately with the surveillance of individuals at increased risk for skin cancer and screening of the general population. The recommendations in this Ontario guideline are consistent with those from the Canadian Task Force, U.S., and Australian guidelines in that none of the guidelines recommend routine screening for skin cancer in the general population. While the other guidelines make recommendations for high-risk populations, the Ontario document has gone further in describing the high-risk population and making specific recommendations for identifying and screening this group.

There is very little evidence about the effects of screening for skin cancer on clinical outcomes. The pilot phase of a randomized trial demonstrated the feasibility of implementing a screening program consisting of community education, general practitioner education, and screening clinics to promote self-screening and whole-body screening by general practitioners. Early results detected an increase in the percentage of subjects reporting whole-body skin examination by a physician. The randomized trial and a work-place screening study both found that people were more likely to perform skin self-examination if they had undergone a whole-body skin examination by a physician. A case-control study detected a reduced risk of melanoma and reduced mortality from melanoma

associated with skin self-examination, but there are no survival data from randomized controlled trials (RCTs). Mounting an RCT with sufficient power to detect survival benefits from screening requires the commitment of significant resources over many years of follow-up. The challenges are illustrated by the aborted attempt to conduct such a trial in Australia, a country with high rates of skin cancer. There are no ongoing randomized trials and little likelihood of RCTs being initiated in the future. Given that there is limited evidence for or against the case of screening for skin cancer in the general population and the relatively low rates of skin cancer among those without known risk factors, the panel does not recommend that members of the general public undergo routine screening for skin cancer.

In addition to considering the impact of screening on melanoma mortality reduction, the guideline panel considered other potential benefits from detecting skin cancer early through screening. They noted that non-melanoma skin cancer, which is not usually lethal except in transplant patients, if diagnosed early, results in less extensive surgery and/or radiation therapy on highly visible sites such as the head and neck.

Because of personal characteristics or history, some individuals are at increased risk for skin cancer. The panel examined the evidence for a range of well-known risk factors related to phenotype, exposure to ultraviolet radiation, family or personal history of skin cancer, and medical conditions or treatments. They looked at the relative risk and assessment issues for each risk factor. The risks associated with ultraviolet radiation exposure from the sun or artificial sources vary with the frequency and intensity of exposure. Past ultraviolet radiation (UVR) exposure is difficult to quantify and, therefore, may not be useful to easily identify high-risk people for screening. A history of frequent sunburns or a tendency to burn rather than tan is a more useful indicator of risk. Some risk factors (e.g., hair colour) are more easily ascertained in the clinical setting. High risk for skin cancer associated with melanoma in a first-degree relative (especially if diagnosed at a young age), a personal history of skin cancer or organ transplantation, or long-term treatment with psoralen-ultraviolet light (PUVA) for psoriasis suggest that screening may be beneficial in these people.

Even without evidence of mortality reduction, the guideline panel thought that surveillance by dermatologists of individuals at very high risk has the potential to reduce morbidity and mortality. Earlier detection of smaller lesions should lead to less extensive surgical procedures and/or radiation therapy. In malignant melanoma, the panel assumes that surveillance will result in the detection of thinner lesions, therefore leading to a better prognosis. The very-high-risk group includes those with a cumulative cancer risk of 5% or more over a five-year period or very high odds or risk ratios compared to the general population. Since those who have undergone organ transplantation and are on chronic immunosuppressant therapy will have extensive and ongoing interaction with a health care team, the panel recommends that a member of this team with dermatological expertise or an external dermatological consultant undertake skin surveillance of these patients. It is important to note that a group of people with a higher than average risk of developing skin cancer may not warrant total-body skin examination. The panel recommends that health care providers teach these high-risk individuals to examine their own skin for signs of cancer and counsel them about skin cancer prevention.

Due to the lack of strong evidence for or against screening, the panel has recommended that screening not be offered to the general population. Based on the risk factors described in the literature and the combined clinical expertise of the panel, the group identified populations at sufficient risk for melanoma, squamous cell carcinoma (SCC), or basal cell carcinoma (BCC) of the skin for whom screening by a health care provider or self-screening by the patient is warranted.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

External Review

Following the review and discussion of Sections 1 and 2 of this Evidence-Based Series, the Skin Cancer Screening Guidelines Panel circulated the clinical practice guideline and systematic review to clinicians in Ontario for review and feedback.

Practitioner feedback was obtained through a mailed survey of 114 practitioners in Ontario (47 dermatologists, 53 family physicians, and 14 members of the Melanoma Disease Site Group). The survey consisted of 23 questions about the quality of the evidence-based recommendations and whether the draft report should be approved as a practice guideline. Written comments were invited. The practice guideline report and questionnaire were mailed on April 28, 2005. Follow-up reminders were sent at two weeks by postcard and four weeks (complete package mailed again). The results were then reviewed by the Skin Cancer Screening Guideline Panel.

Report Approval Panel

The final practice guideline report was reviewed and approved by the Program in Evidence-based Care (PEBC) Report Approval Panel in February, 2006. The Panel consists of two members, including an oncologist, with expertise in clinical and methodology issues. One member approved the guideline as written, with no comments, while the second member had minor suggestions.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Recommendations

Very limited evidence was available to inform the following recommendations on screening. No prospective studies have evaluated the impact of screening on survival, quality of life, or morbidity from treatment for skin cancer nor are there data on the adverse effects of screening for skin cancer. As experts in the treatment and epidemiology of skin cancer, the guideline panel members were aware that some individuals are at increased risk for skin cancer because of personal characteristics or history. They reviewed key papers on risk and identified groups of patients who might be expected to benefit from increased surveillance for skin cancer. Separate recommendations are offered for two groups at increased risk (very high risk and high risk) and the general population.

Very high risk of skin cancer

- Individuals with any of the following risk factors have a very high risk of skin cancer (approximately 10 or more times the risk of the general population):
    - On immunosuppressive therapy after organ transplantation
    - A personal history of skin cancer
    - Two or more first-degree relatives with melanoma
    - More than 100 nevi in total or 5+ atypical nevi
    - Have received more than 250 treatments with psoralen-ultraviolet light (PUVA) for psoriasis
    - Received radiation therapy for cancer as a child

Individuals at very high risk should be identified by their primary health care provider and offered total body skin examination by a dermatologist or a trained health care provider on a yearly basis. They should also be counselled about skin self-examination and skin cancer prevention by a health care provider (e.g., physician, nurse practitioner, or public health nurse). In case of childhood cancer survivors, the site of radiation therapy should be monitored.

High risk of skin cancer

- Individuals with two or more of the main identified susceptibility factors are at a high risk for skin cancer (roughly 5 times the risk of the general population):
    - A first-degree relative with melanoma
    - Many (50-100) nevi
    - One or more atypical (dysplastic) nevi
    - Naturally red or blond hair
    - A tendency to freckle
    - Skin that burns easily and tans poorly or not at all

  Other factors that may influence the risk of skin cancers that are environmental include an outdoor occupation, a childhood spent at less than

latitude 35°, the use of tanning beds during teens and twenties, and radiation therapy as an adult.

Individuals at high risk should be identified by their primary health care provider and counselled about skin self-examination (specifically focused on the site of radiation for those having had therapeutic radiation) and skin cancer prevention by a health care provider (e.g., physician, nurse practitioner, or public health nurse). High-risk individuals should be seen once a year by a health care provider trained in screening for skin cancers.

The general population not at increased risk of skin cancer

- There is at this time no evidence for or against skin cancer screening of the general population at average risk of developing skin cancer.
- Based on the limited evidence available at present, routine total body skin examination by primary care providers is not recommended for individuals at average or low risk for skin cancer (i.e., those not included in the increased risk groups described above).
- Based on the limited evidence available at present, routine counselling on skin self-examination by primary care providers is not recommended for individuals at average or low risk for skin cancer.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on evidence-based practice guidelines, one case-control study, and two comparative studies.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- The pilot phase of a randomized trial demonstrated the feasibility of implementing a screening program consisting of community education, general practitioner education and screening clinics to promote self-screening and whole-body screening by general practitioners. Early results detected an increase in the percentage of subjects reporting whole-body skin examination by a physician.
- The randomized trial and a work-place screening study both found that people were more likely to perform skin self-examination if they had undergone a whole-body skin examination by a physician.
- A case-control study detected a reduced risk of melanoma and reduced mortality from melanoma associated with skin self-examination.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Care has been taken in the preparation of the information contained in this document. Nonetheless, any person seeking to apply or consult the evidence-based series is expected to use independent medical judgment in the context of individual clinical circumstances or seek out the supervision of a qualified clinician. Cancer Care Ontario makes no representation or guarantees of any kind whatsoever regarding their content or use or application and disclaims any for their application or use in any way.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

From L, Marrett L, Rosen C, Zwaal C, Johnston M, Bak K, Sibbald G, Fong J, Mai V. Screening for skin cancer: a clinical practice guideline. Toronto (ON): Cancer Care Ontario (CCO); 2007 Jun 19. 33 p. (Evidence-based series; no. 15-1). [79 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Mar 15 (revised 2007 Jun 19)

GUIDELINE DEVELOPER(S)

Program in Evidence-based Care - State/Local Government Agency [Non-U.S.]

GUIDELINE DEVELOPER COMMENT

The Program in Evidence-based Care (PEBC) is a Province of Ontario initiative sponsored by Cancer Care Ontario and the Ontario Ministry of Health and Long-Term Care.

SOURCE(S) OF FUNDING

Cancer Care Ontario
Ontario Ministry of Health and Long-Term Care

GUIDELINE COMMITTEE

Skin Cancer Screening Guideline Panel

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

For a current list of past and present members, please see the Cancer Care Ontario Web site.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Members of the panel disclosed information on potential conflicts of interest. None of the principal authors of this report identified any conflicts. One panel member has acted as a consultant to pharmaceutical companies, but that was not considered to be in conflict with this screening guideline.

GUIDELINE STATUS

This is the current release of the guideline.

The EVIDENCE-BASED SERIES report, initially the full original Guideline, over time will expand to contain new information emerging from their reviewing and updating activities.

Please visit the Cancer Care Ontario Web site for details on any new evidence that has emerged and implications to the guidelines.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Cancer Care Ontario Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Screening for skin cancer: a clinical practice guideline. Summary. Toronto (ON): Cancer Care Ontario (CCO), 2006 Mar 15. Various p. (Practice guideline; no. 15-1). Electronic copies: Available in Portable Document Format (PDF) from the Cancer Care Ontario Web site.
- Browman GP, Levine MN, Mohide EA, Hayward RSA, Pritchard KI, Gafni A, et al. The practice guidelines development cycle: a conceptual tool for practice guidelines development and implementation. J Clin Oncol 1995;13(2):502-12.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on June 30, 2006. The updated information was verified by the guideline developer on July 7, 2006. This NGC summary was updated by ECRI Institute on October 2, 2007.

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DISCLAIMER

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