
The Integrated Skin Exam film: An educational intervention to promote early detection of melanoma by medical students

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Background: Knowledge of the skin cancer examination (SCE) and its practice remain relevant competency gaps among medical students.

Objective: We elaborate on a method of SCE known as the Integrated Skin Exam and discuss the development of an instructional film that illustrates its principles. We assess the tool's effect on knowledge, attitudes, and perceptions related to the SCE.

Methods: Second-year students among 8 randomized schools viewed the film and completed pre-post questionnaires.

Results: After viewing *The Integrated Skin Exam* film, students demonstrated improved melanoma knowledge, including identification of high-risk demographic groups (61% vs 42.9%, $P < .001$), high-risk anatomic sites in women (88.6% vs 46.5%, $P < .001$) and men (92.1% vs 34.8%, $P < .001$), and the ABCDEs of melanoma (98.4% vs 91.2%, $P < .001$). Students demonstrated increased confidence in the SCE (66.93% vs 16.40%, $P < .001$) and augmented intentions to practice it (99.05% vs 13.9%, $P < .001$). A greater proportion (70.4% vs 41.9%, $P < .001$) of students thought less than 3 minutes were required to integrate SCE into the routine examination.

Limitations: Longitudinal impact of the film was not assessed.

Conclusion: *The Integrated Skin Exam* film introduces an integrated approach to the SCE that addresses knowledge gaps, mitigates perceived barriers, and augments intention related to practice of the SCE. (J Am Acad Dermatol 2014;70:115-9.)

Key words: integrated skin cancer examination; medical education; medical students; melanoma.

Secondary prevention efforts for the detection of melanoma among primary care physicians (PCPs), who have the most frequent surveillance opportunity, is a practice gap.¹⁻⁴ The majority of PCPs do not routinely screen at-risk patients for

Abbreviations used:

ISE: Integrated Skin Exam
PCP: primary care physicians
SCE: skin cancer examination

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skin cancer,^{3,5} and they perform skin cancer examination (SCE) less commonly than other cancer examinations.⁶ Time constraints, lack of training in the examination, confidence in performing the SCE, and intention to practice it are barriers thwarting routine surveillance for melanoma.^{3,7,8} The Integrated Skin Exam Consortium comprised educators at 8 medical schools and was formed to narrow these gaps through interventions aimed at increasing awareness of at-risk groups and most common anatomic sites of melanoma, promoting routine integration of the SCE, and enabling identification of suspicious pigmented lesions.

Herein, we elaborate on a method of teaching the SCE known as the Integrated Skin Exam (ISE) and discuss the development of a novel widely accessible educational film (available at www.aad.org/education/medical-student-core-curriculum) that illustrates its principles. We assess the film's short-term effect on knowledge related to melanoma, confidence in performing the SCE, and the intentions for practicing it. We also assess students' perception of time involved in performing an examination for skin cancer before and upon completion of viewing the film.

METHODS

Intervention

The primary ISE team—working with a professional producer/director (Gautam Chopra, Riding Shotgun Productions, Cambridge, MA) and trained actors—scripted, shot, and produced a 14-minute instructional film titled *The Integrated Skin Exam*. The film's storyboard was designed to specifically engage students. The film aids students in identifying at-risk demographic groups and the most common anatomic sites for melanoma. It illustrates the “ugly duckling sign” for suspicious lesions, and the ABCDE detection method for melanoma. Interactive content around melanoma knowledge is related via use of illustrations, animation, and melanoma images. The film also discusses the concept of the ISE and models the clinical technique (ie, inspecting the skin of the back while auscultating lung sounds). To add context around the ISE, patients with melanoma provide testimonials around early detection through physician visits.

The instructional film was pilot tested with students at the primary study site and was presented to the Dermatology Teachers Exchange Group at the 2010 Association of Professors of Dermatology meeting.⁹ We rescripted and refilmed parts of the film based on feedback from the meeting. The final version was favorably reviewed for content and

messaging by an advisory board of dermatology educators. In addition, we produced a 6-minute abridged version by editing the full version, and this was intended for use as a booster in the third year.

Settings and participants

We recruited medical schools nationwide based on their ability to incorporate all of the components of a 2-year ISE study protocol that included 3 study arms, exposure to educational interventions, baseline and postexposure

questionnaires, along with baseline and postexposure long-term assessment through Observed Structured Clinical Examinations. Data presented herein are from the component of the overall study protocol which assesses the short-term impact of the ISE film as the educational intervention. A total of 1138 second-year students representing 8 geographically varied public and private accredited US medical schools qualified for the entire ISE study protocol. These schools were randomized to the 3 study conditions. Pre-post questionnaire data from 817 students in 6 of the schools divided between 2 of the 3 study arms that received the film intervention were used in the analysis. The 2 remaining schools in the control arm of the overall ISE protocol did not receive the film intervention and were thus excluded from this analysis. The institutional review board at each school in the Integrated Skin Exam Consortium approved this study.

Measures

The pretest and posttest assessments measured knowledge, confidence, and intentions. Knowledge of melanoma was assessed by asking questions related to identification of high-risk demographic groups and high-risk anatomic sites of melanoma in women and men, along with defining the ABCDEs of melanoma. Students were asked to rate their confidence in performing SCE on a 4-point Likert scale that included: (1) very confident, (2) moderately confident, (3) slightly confident, and (4) not at all

CAPSULE SUMMARY

- The skin cancer examination remains a relevant practice gap among medical students.
- *The Integrated Skin Exam* film improves knowledge related to melanoma detection, mitigates perceived barriers of time and lack of confidence, and augments intention to practice the skin cancer examination.
- Augmented student practice of the skin cancer examination may boost secondary melanoma prevention efforts.

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