

Preventing Skin Cancer: High School- and College-based Interventions

Task Force Finding and Rationale Statement

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Task Force Finding and Rationale Statement

Intervention Definition

High school- and college-based interventions to promote sun-protective behaviors among adolescents and young adults include at least one of the following:

- Educational approaches (e.g., providing informational messages about ultraviolet [UV] protection to adolescents and young adults through instruction, small media, Internet, or social media). UV protection messages may be health-related, appearance-based, or both.
- Activities designed to influence behaviors of adolescents and young adults (e.g., modeling, demonstration, role playing)
- Activities intended to change knowledge, attitudes, or behaviors of teachers and parents or caregivers
- Environmental and policy approaches (e.g., providing sunscreen or shade, scheduling outdoor activities to avoid hours of peak sunlight)

Task Force Finding (May 2013)

The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of high school- and college-based interventions to prevent skin cancer by reducing exposure to ultraviolet radiation. Evidence was considered insufficient based on inconsistent results for sun protective behavioral outcomes. Interpretation of included studies also was complicated by (1) variability in interventions and evaluated outcomes; (2) short follow-up times; and (3) limitations in the design and execution of important subsets of studies.

Rationale

Basis of Finding

This Task Force finding is based on evidence from a Community Guide systematic review published in 2004 (Saraiya et al., 2004, 4 studies, search period January 1966 – June 2000) combined with more recent evidence (17 studies with 27 arms, search period June 2000 – May 2011). It updates and replaces the 2002 Task Force finding on Education and Policy Approaches in Secondary Schools and Colleges. Results presented in this statement are based on evidence from the updated search period.

The large variability in scope and intent of the interventions evaluated in this review make it difficult to draw general conclusions on the effectiveness of high school- and college-based interventions to prevent skin cancer by reducing exposure to ultraviolet radiation. Some included studies assessed the effectiveness of programs delivered to broad groups of students in natural settings. Other studies were designed to test specific skin cancer prevention messages, or ways of delivering them, and they often used participants who volunteered in exchange for required course credits. In addition, results and outcome measures varied substantially across studies, follow-up times were generally short (3 months or less), and programmatic studies tended to have relatively weak study designs.

The 17 included studies (27 study arms) from the update period assessed intervention effects on several behavioral outcomes (e.g., use of sunscreen, clothing, hats, or shade; avoidance of sun exposure during peak hours; tanning bed use), physiological outcomes (e.g., sunburns), and direct and indirect measures of sun exposure (e.g., change in skin coloration). Although results were mixed across the entire body of evidence, the subset of message-testing

interventions—usually intensive, individually-tailored interventions—showed generally favorable short-term results, including substantial reductions in tanning bed use (6 studies, each with different outcome measures).

Applicability and Generalizability Issues

The majority of evidence from the updated search period came from the United States (76%), with the remainder coming from Australia, Canada, and Italy. Most of the studies were conducted in university or college settings (82%), and of these, 30% were targeted to young women. All but one of the interventions involved educational and behavioral approaches, with the majority delivering primarily appearance-based messages. The remaining study assessed the effects of installing shade structures outside of high schools and found they increased use of shade during lunch breaks. The large majority of college interventions were small-scale message-testing trials with short follow-up periods, and only a small amount of evidence was available on the effects of larger-scale interventions delivered to overall student populations or relevant subsets.

Data Quality Issues

Studies from the updated search period had different strengths and weaknesses. Message-testing studies tended to be well-controlled individually-randomized trials, but the ability to draw conclusions about their potential public health impact was diminished by their short follow-up times and questionable generalizability to programs delivered to larger groups of students. In contrast, there were fewer studies delivered to overall student populations, and they tended to have weaker study designs (e.g., before and after designs). The ability to draw conclusions from this body of evidence was further diminished by the large number of outcomes and specific outcome measures that could not be aggregated to provide a clear picture of the consistency and magnitude of effects across interventions.

Other Benefits and Harms

No harms or additional benefits specific to this intervention were identified in the included evidence and broader literature.

Considerations for Implementation and Evidence Gaps

Older adolescents and young adults are an important group to target for interventions to reduce UV exposure as they are often resistant to using adequate sun protective measures in their outdoor activities and many are frequent users of tanning beds. High school and college settings offer convenient places to reach these populations, and they offer different opportunities and challenges for implementing interventions. Intervention approaches that are well-suited to one setting may not be the most appropriate in the other. More evidence is required to assess the effectiveness of high school- and college-based interventions to reduce UV exposure, and to determine which intervention characteristics are associated with the greatest effect.

Future studies of the potential effectiveness of high school and college-based interventions for improving public health outcomes associated with skin cancer should address the limitations identified in this review. In particular, there is a need for well-controlled studies of interventions that are delivered to broad groups of students in naturalistic settings, with follow-up times of at least six months. In addition, it would be valuable to explore ways to implement sustainable college-based interventions targeted at frequent tanning bed users and assess their effectiveness.

The data presented here are preliminary and are subject to change as the systematic review goes through the scientific peer review process.

References

Saraiya M, Glanz K, Briss PA, Nichols P, White C, et al. Interventions to prevent skin cancer by reducing exposure to ultraviolet radiation: a systematic review. *Am J Prev Med* 2004;27(5):422-66.

Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

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