



Predictors of Sunscreen Use Among Schoolchildren Participating in the U.S. Environmental Protection Agency's SunWise Program

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Introduction

- Incidence of melanoma, the most commonly fatal form of skin cancer, continues to increase at rates higher than those of most other preventable cancers.¹
- Despite initiatives to improve sun protection among children, most children do not use sunscreen and often burn when outside during the summer.^{2,7} Tan-promoting attitudes are also highly prevalent among pre-teens and teens.⁸
- Improving sun safety behaviors is an important goal of the U.S. Environmental Protection Agency's SunWise Program. SunWise teaches children and their caregivers how to protect themselves from overexposure to the sun.

Objectives

- Because sunscreen use remains the most common form of sun protection for children, we sought to determine factors associated with their use of sunscreen.
- Determining current deficits in the use of sunscreen will be instrumental for targeting future interventions for children.

Methods

In advance of a randomized trial to improve sun protection practices in 44 U.S. schools, we conducted a pre-test survey of more than 3,500 participants ages 8 to 13.

- **Sample:** Student participants were recruited through a random sample of school nurses and health and physical education faculty who had recently registered to teach the U.S. Environmental Protection Agency's SunWise Program.
- **Measure:** The pre-test survey was derived from earlier SunWise instruments,⁹⁻¹² reviewed by educational and child development experts, and pilot tested. The survey included questions on demographics, knowledge, attitudes, sun protection practices, and barriers to wearing sunscreen.
- **Statistical Analysis:** The primary outcome variable was sunscreen use, and the responses were grouped into three levels: never/rarely (sporadic), sometimes, and often/always (routinely). In addition to assessing the basic correlates of sunscreen use, we also evaluated the joint association of sex and age with factors related to sunscreen use. Measures of associations are presented in the form of odds ratios (ORs) for sporadic vs. routinely. All analyses were performed using SAS statistical software.



EPA's SunWise Program is the first national environmental and health education program teaching sun safety to elementary and middle school children. SunWise's overall goal is to reduce the incidence of skin cancer by changing attitudes and behavior concerning sun exposure. Program features are designed to educate children about ozone layer depletion, encourage children and families to protect their skin and eyes from overexposure to UV radiation, teach simple sun protection steps, and deliver accurate, timely, and useful UV data directly to schools and communities for use in day-to-day decisions regarding personal sun safety.

For more information, visit: www.epa.gov/sunwise



Key Results

- **24% of all schoolchildren surveyed are using sunscreen only sporadically.**
- **Boys are about 33–50% less likely than girls to use sunscreen routinely, with gaps increasing by age.**
 - Compared to girls, boys report less sun protection knowledge, less common use of other forms of sun protection, and spending more time in the sun
- **Sporadic sunscreen use increases by age for both boys and girls.**
- **"I forget" is the most common reason children report for not wearing sunscreen.**
 - Older boys and girls are more likely than younger children to say that it took too long to put on sunscreen. They also are more likely to report that they forget to put on sunscreen.
- **Sporadic use of other forms of sun protection was closely related to sporadic use of sunscreen.**
 - Children who did not plan to play in the shade were two times more likely to use sunscreen sporadically.
 - Children not wearing sunglasses were two times more likely to use sunscreen sporadically.
 - Children not wearing hats were more than three times more likely to use sunscreen sporadically.
- **A significant majority of boys ages 12-13 (65%) and girls ages 12-13 (75%) stated that they like to get a tan.**
 - Compared to younger children, older boys and girls are more likely to state that they like to get tan and that people look healthier with a tan.

Discussion

- Sporadic sunscreen use is higher among boys than girls, and increases for both genders as they age.
 - The use of sunscreen decreases significantly between ages 10-11 and 12-13 for both boys and girls.
- While it is impractical for a school-based program to tailor information by gender, parents, pediatricians, and recreation leaders can provide a stronger influence for boys to counter their barriers to sun protection.
 - Further research into why boys are different from girls with regard to sunscreen and sun protection is needed.
- While promoting a comprehensive set of sun protection actions is beneficial in and of itself, the correlation between sunscreen use and wearing hats and sunglasses and seeking shade suggests sunscreen use should increase in tandem.
- Overcoming reported barriers to sunscreen use will likely require a concerted effort by pediatricians, parents, and recreation leaders, in addition to school-based efforts. Studies have clearly shown that early intervention is more successful in health promotion than interventions targeting adolescents.¹³

For more information, please contact Luke Hall-Jordan at Hall-Jordan.Luke@epa.gov

FIGURE 1: Percentage of schoolchildren using sunscreen only sporadically*

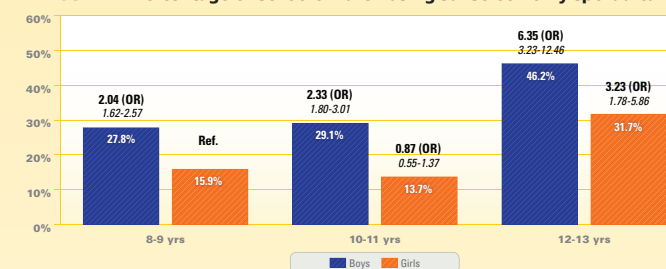


FIGURE 2: Most commonly reported barriers to sunscreen use

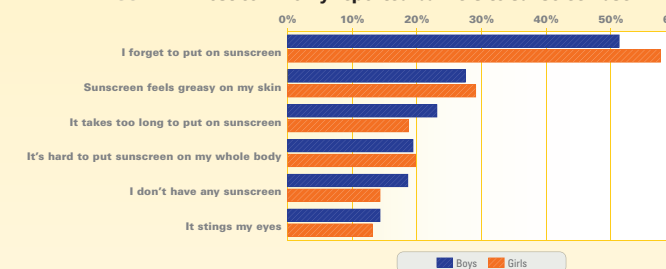


FIGURE 3: Comparison of sporadic sunscreen use among children who report using other sun protection measures sporadically versus routinely*

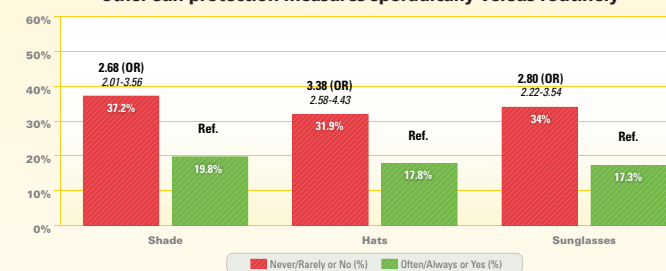
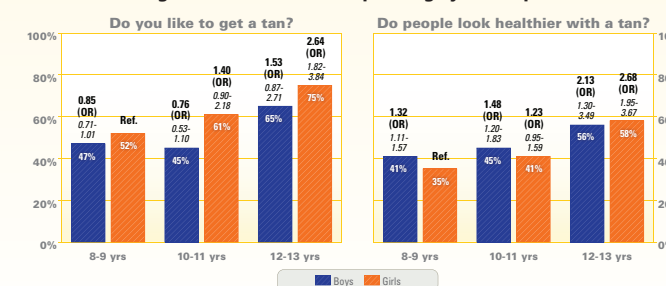


FIGURE 4: Percentage of schoolchildren responding "yes" to questions about tanning*



*Odds Ratios (ORs) compare never/rarely vs. often/always, and are adjusted for age, sex, hair color, and susceptibility. 95% Confidence Intervals are shown in italics.

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