

Focus On Subspecialties

Counseling on how tanning increases risk of skin cancer should begin in preteen years

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Over the past few years, trends in ultraviolet (UV) radiation-induced illness have been elucidated, and sun protection recommendations we offer patients have changed.

UV radiation is composed of three wavelengths: UVA, UVB and UVC. Because sunlight filters UVC through the ozone layer, it is not a concern for cancer. However, UVA and UVB shine on the Earth's surface and can trigger an epidermal injury response (sunburn and tanning), elastic fiber breakdown (wrinkling/photoaging), genetic mutations of and pre-cancerous damage to skin cells, which accumulate with time and can result in skin cancer formation.

An estimated one in 50 individuals in the United States will get melanoma in his or her lifetime (Rigel DS, et al. *CA Cancer J Clin.* 2010; 60:301-316). One in five Americans will develop a skin cancer, including basal cell and squamous cell carcinomas and melanomas (Stern RS. *Arch Dermatol.* 2010;146:279-282; Robinson JK. *JAMA.* 2005;294: 1541-1543).

A recent study showed a 2% yearly increase in melanoma in U.S. children from 1973-2009, with an 18% overall rise in teenagers (Wong, et al. *Pediatrics.* 2013;131:846-854).

Melanoma surveillance

Melanoma is a leading cancer in 15- to 24-year-olds. It appears on the trunk in males and the hips, thighs and legs in females. Early detection and excision save lives.

Surveillance is important with parental/self-exam and dermatologic screening using the ABCDE criteria, with a focus on new or changing pigmented lesions. A is for asymmetry, B is for border irregularity, C is for color variegation, D is for diameter 6 millimeters or greater and E is for evolution, the latter being the most utilitarian sign in children (Cordoro KM, et al. *J Am Acad Dermatol.* 2013;68:913-925).

Pediatricians also should be aware that melanomas in children can be atypical, sometimes resembling pyogenic granulomas or pink bumps. Referral to a pediatric dermatologist for evaluation and potential removal of new, growing or changing lesions is advisable.



Pediatricians can advise families on sun protection, including the need for frequent re-application of sunscreen and other precautions to help prevent skin cancer.

Sun protection

The goal of sun protection is to avoid all skin cancers in one's lifetime. Pediatricians can counsel patients to avoid the beach between 10 a.m. and 4 p.m.; wear sunglasses, wide-brimmed hats, and long-sleeved shirts and pants; and apply sunscreen frequently. In addition, clothing now is available with sun protection. It is labeled with a universal protection factor rating based on the fabric's ability to block ultraviolet radiation from passing through the fabric and reaching the skin. A rating of 15 to 24 indicates "good" UV protection; 25 to 39 is "very good"; and 40 to 50+ is "excellent."

Changes in FDA labeling of sunscreen

A long-standing discussion in pediatric dermatology has been the issue of sunscreen labeling. The sun protection factor (SPF) is a rating of only UVB protection. In 2011, the Food and Drug Administration (FDA) required manufacturers to test sunscreen products to demonstrate UVA as well as UVB protection, with UVA protective agents being labeled as "broad-spectrum."

Sunscreens with an SPF of 15 or greater indicate that they protect

against sunburn, aging and skin cancers. Since patients rarely apply an adequate amount, it may be better to choose a product with a higher SPF.

The FDA also recognized that no product stays on indefinitely in the water. Therefore, a label of water-resistant to 40 or 80 minutes is on sunscreens with staying power, reflecting the need for re-application every one to two hours when sweating, toweling or swimming.

A 2011 AAP policy statement reviewed sun protective products for children (see resources). Sunscreens/ sunblock products that contain titanium and/or zinc are recommended for children 6 months to 2 years. Other sunscreen products can be used after the age of 2 years since they contain chemicals that may be absorbed. Newborns and infants should be kept in the shade with limited, if any, sunblock applied to exposed skin. Teenagers may have fewer acne flares with noncomedogenic formulations.

Risks of indoor tanning

Recent scientific data definitively show that even one trip to a tanning bed in adolescence/early adulthood increases melanoma risk by 75%. Furthermore, the World Health Organization recently labeled tanning beds as known carcinogens.

Many states regulate tanning, but only a few ban minors from using indoor tanning beds or require parental consent. The latter is a double-edged sword because adults who tan influence their children's tanning behavior, thereby creating a permissive environment for poor sun protection habits.

Disseminating information on how indoor and outdoor tanning increases the risk for skin cancer is vital in the preteen years when the desire to tan begins. Teenagers also may be more apt to use sun protection regularly if they are told that it can prevent wrinkles, age spots and sagging later in life.



Dr. Silverberg is a member of the AAP Section on Dermatology Executive Committee.

RESOURCES

- The AAP policy statement, *Ultraviolet Radiation: A Hazard to Children and Adolescents*, is available at <http://pediatrics.aappublications.org/content/early/2011/02/28/peds.2010-3501>.
- For more information on skin cancer, visit the American Academy of Dermatology website, www.aad.org/media-resources/stats-and-facts/conditions/skin-cancer.