Preventing Excess Sun Exposure: It Is Time for a National Policy

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It is now well established that childhood sun exposure is the primary risk factor for melanoma. The seminal observation linking age at exposure to risk was the finding that the incidence of melanoma increased among people who had migrated from northern latitudes to more equatorial latitudes but only among the immigrants who were children at the time of the migration (1–3). Individuals more than 15 years of age who emigrated from England and Ireland to Australia had substantially reduced risk of melanoma compared with those born in Australia. It has been confirmed that sunburns during childhood and adolescence are associated with an increased risk of melanoma (4). Lifetime exposure to ultraviolet radiation, including that incurred during adulthood, appears to play a major role in nonmelanoma skin cancer (5). To reduce the risk of both melanoma and nonmelanoma skin cancer, reduction of exposure to the sun throughout life is warranted.

The article by Autier et al. (6) in this issue of the Journal raises important questions about the use of sunscreen to reduce the risk of skin cancer. Using a rigorous double-blind, randomized, controlled design, the authors observed that participants who received high sun-protection factor (SPF) sunscreen spent more time in the sun compared with those who received lower SPF sunscreen, despite the fact that all participants were blinded to the SPF formulation that they received. This finding may help us interpret previous epidemiologic studies (5) that have suggested that individuals who use sunscreen actually have higher rates of skin cancer than those who do not use sunscreen. It is likely that individuals whose skin type and/or genetic background place them at high risk for skin cancer have a propensity to burn when they are exposed to the sun and they are thus more likely to use sunscreen. The results of this trial add further evidence to the debate regarding recommendations for use of sunscreen. This trial suggests that the use of sunscreen alone will not lead to lower exposure but rather may result in longer time spent in the sun. Furthermore, study participants used only about one quarter the amount of sunscreen that is recommended for adequate coverage. This finding suggests that the increased skin cancer rates found among sunscreen users might also be associated with inadequate use of sunscreen.

The results of this study may have a substantial impact on the public’s efforts regarding sun protection, particularly since sunscreen is widely considered by the public to provide adequate sun protection. Sunscreen use is the most common sun protection behavior currently performed in the United States, particularly by children (7). In considering the results of this study, it is important to remember that, until the second half of this century, sun exposure was avoided and at the beach clothing covered the

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body and protected the skin from the sun. Changes in patterns of sun exposure and sun protection behaviors are strongly associated with the observation that the incidence of melanoma has doubled in the United States during the past 20 years (8). The findings by Autier et al. highlight the importance of disseminating messages about other sun protection methods in addition to sunscreen to reduce overall sun exposure. It would be unfortunate indeed if the public interpreted this study as a reason not to use sunscreen but did not at the same time reduce their overall sun exposure by other means.

In other parts of the world, sun protection is viewed as a societal responsibility, and there are strong norms that encourage use of a variety of sun protection strategies. For example, Australia’s “Slip, Slop, Slap” campaign encourages children and adults to “slip on a long sleeve shirt, slop on some SPF 15+ sunscreen and slap on a broad-brimmed hat.” Routine warnings encourage avoidance of the sun and beach between 10 AM and 2 PM. In addition, clothing is rated for its ability to reduce sun exposure, and shirts made of Lycrea are the norm for children and adolescents on the beach and in the water. Why do we Americans stop with recommending sunscreen as our public health message to parents and children?

There are a number of policy initiatives that could greatly reduce the sun exposure of the U.S. population and protect children in particular. In Australia, schools have “no hat—no play” policies that restrict children who do not have hats from playing outdoors. Sunscreen is provided at public swimming pools, and many towns have installed shade cloth over play structures and toddlers’ pools in parks and at community centers. The relatively simple installation of shade cloth reduces sun exposure by 60% or more. The Australian government has also removed all taxation on sunscreens. It is noteworthy that the maximum SPF rating for sunscreens used in Australia is 15+, since the benefits above this SPF level are minimal and the cost escalates. At SPF 15, sunscreens block 94% of UV-B. Above a rating of 15, the frequency of allergic reactions increases.

In comparison with Australia, sun protection policies and environmental efforts in the United States are sorely lacking. Only 36% of child care centers that were surveyed had shade in more than half of the play area, and only 56% of the centers had adequate sun protection policies (9). One of the few national programs using an environmental intervention for sun protection has been launched by the U.S. National Weather Service and the U.S. Environmental Protection Agency (EPA). Together, these agencies have publicized the UV Index as part of television and newspaper weather reports in 58 major cities. The index provides recommendations for appropriate UV protective measures for the public according to the intensity of UV light predicted for the upcoming day. A high level of awareness of the UV Index has been reported among adults surveyed in the target cities, and almost 40% of respondents reported that they or their family had changed their sun protection practices as a result of the UV Index (10,11). This finding demonstrates both the importance and potential of public education efforts focusing on sun protection. Key targets for both policy development and public education include schools, summer camps, sporting and other outdoor events, pools, workplaces, and health care settings. State and local government authorities should seriously consider the important role that they can play in policy development, such as requiring all state-licensed day care centers and summer camps to have effective sun protection policies and performing spot checks on these organizations to be sure that they are in compliance. Such a policy has recently been implemented in Massachusetts for summer camps. Community groups and parents can also play a key role by lobbying to have shade structures at playgrounds and by planting trees to provide shade in play areas.

Evaluations of the Australian sun protection program have demonstrated statistically significant increases in sun protection behaviors—in particular, the wearing of hats and use of sunscreen—and a statistically significant decline in sunburn rates (12). Although there have been a number of research-based efforts in the United States targeting sun protection through recreational centers, schools, pools, and other community venues (13), there have been no widespread, well-coordinated implementation efforts on the order of those conducted in Australia. The lack of programs in the United States is of particular concern because skin cancer is largely preventable, and yet the incidence of melanoma is increasing by 4% per year (8). This rate portends unnecessary suffering and death by our children and our families. It is time we made a concerted effort to implement prevention strategies at the national level in the United States.

REFERENCES