

Sun Exposure and Melanoma Survival: The Devil is in the Details

A controversial researcher is back with new data on melanoma that contradict long-held beliefs. But the study isn't perfect.

By Jonathan Wolfe, MD

Dermatologists are all familiar with the controversy surrounding a study published by Marianne Berwick, PhD in 1998, suggesting that sunscreen use actually increased melanoma risk. The controversial assertion was widely reported in the popular media. Subsequent reports in the medical literature—particularly within our specialty—identified possible flaws in its conclusions. Dermatologists countered the hype and re-stressed the role of sunscreens in maintaining healthy skin.

Recently Dr. Berwick, of the University of New Mexico School of Medicine, and colleagues published a report in *Journal of the National Cancer Institute* (97)3:195-199), concluding that “sun exposure is associated with increased survival from melanoma.” Though not as widely publicized as the sunscreen study, the current publication was picked up by some health reports. Dermatologists should be familiar with the study so that we can accurately educate confused patients and perhaps expand our own knowledge.

Against the Grain

This population-based study followed 528 subjects diagnosed with cutaneous melanoma over an average period of over five years. At enrollment, patients completed a structured questionnaire intended to quantify lifetime intermittent sun exposure index—a correlation of recreational sun exposures prior to age 15 and in 10 years prior to enrollment.

The study concludes sun exposure “was statistically significantly inversely associated with risk of death from melanoma.” Furthermore, recent and childhood sunscreen use were not “statistically significantly associated with the risk of death from melanoma.”

Clearly, these findings go against the grain of current thought in dermatology. Specifically, when dermatologists thoughtfully consider details of the study, potential confounding factors emerge. Nonetheless, this study may contribute to current or future research.

All Melanomas Not the Same

Population-based studies such as this one pose potential challenges. While they can begin to describe a hypothesis, they simply cannot show causation. The determination of lifetime intermittent sun exposure is not well described in the study. Clearly, this is a difficult concept to quantify, and it's unlikely that a questionnaire would allow for reliable determination. Recalling one's sunburn history prior to age 15 can be difficult for patients 30 or more years later. Though the study attempted to use more objective measures, such as solar elastosis, to quantify lifetime sun exposure, this may not be a reliable marker of lifetime exposure, particularly when asking “recall” questions on past exposure events. People respond differently to UV, and there is a known difference between acute and chronic exposure. Quantifying solar elastosis is difficult and again raises questions of how we go about

measuring sun damage both in vitro and in vivo. In addition, variables such as genetic predisposition, past history of melanoma, sunscreen habits, and presence of increased number of atypical moles must be considered when evaluating melanoma risk.

Note that researchers made few distinctions based on histological or clinical characteristics of melanoma from patient-to-patient. They did restrict patients with lentigo maligna melanoma and some more aggressive tumors from analysis. That still leaves a number of tumor subtypes grouped together and treated “equally,” which melanoma experts would likely argue is inaccurate and inappropriate. A nodular malignant melanoma may behave differently than a melanoma in situ. Certain forms of melanoma are notoriously more aggressive than others. Given the multiple nuances of melanoma, a study that treats all lesions the same requires careful review.

Bottom Line

The current study raises some interesting questions. Note that, though Dr. Berwick's sunscreen study raised the ire of dermatologists, and confused the general public due to coverage in the lay press, positive results developed from it; we have re-evaluated the best use of sunscreens and re-emphasized patient education. Until further research refutes or supports this initial study, the best approach remains to educate patients about skin cancer risk, sun avoidance, and regular at-home and in-office skin exams. ☞