

# Melanoma Experts Grapple With the Sun Question

BY TIMOTHY F. KIRN  
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VANCOUVER, B.C. — Is it time to let the sun shine in? That was a major topic of discussion by the experts at the recent Sixth World Congress on Melanoma.

The specific subjects ranged from evidence that vitamin D might have a role in protecting against cancer, to evidence that genetic susceptibility might play a previously underappreciated role in melanoma risk, to the fact that messages about sunburn avoidance and use of sunscreen are having little impact on behavior and so could be the wrong strategy for reducing mortality.

New evidence strongly suggests that people who have had more sun exposure have better survival from melanoma than those who have had less, said Marianne Berwick, Ph.D., who is an epidemiologist at the University of New Mexico Cancer Research and Treatment Center in Albuquerque.

She and her colleagues recently found that patients who reported ever having been sunburned had half the mortality of those who had never been sunburned. The study looked at 528 individuals with melanomas who were followed until death or to 5 years. They also found similar increases in survival likelihood related to overall sun exposure and to the presence of marked solar elastosis (*J. Natl. Cancer Inst.* 2005;97:195-9).

The same observations have been noted in previous research, conducted by others as well as by her, Dr. Berwick said.

More recently, Dr. Berwick and her colleagues examined data they collected from the multinational



**New research suggests a link between greater sun exposure and better survival from melanoma, Dr. Marianne Berwick said.**

Genes, Environment and Melanoma Study. They compared melanoma cases from Australia, where melanoma incidence is high, with those from Canada, where sun exposure is low.

Most of the cases (60%) were thin melanomas (0.76 mm or less Breslow thickness).

Although there was no difference in median thickness between cases from the two countries, there was a difference in the presence of solar elastosis and the percentage of tumors that showed evidence of being in a vertical growth phase, the investigation found.

Solar elastosis was present in 60% of the Canadian patients, and 64% of the melanomas were in a vertical growth phase when they were removed. Solar elastosis was present in 75% of the Australians, but only 45% of the melanomas were in a vertical growth phase, Dr. Berwick said.

Though this evidence may help explain why survival might be better in areas where melanoma in-

cidence is highest, and why incidence is rising but not mortality, the question of mechanism remains, Dr. Berwick said.

The popular hypothesis is that this might be due to the effects of vitamin D, she noted. But the epidemiologic evidence that vitamin D is chemoprotective in people who might otherwise be at risk of melanoma is slim. No one knows what the optimal level of vitamin D is, and there are different ways to measure levels. Moreover, studies that have tried to correlate vitamin D level with cancer cases have had conflicting results.

Alternative possible explanations for reduced mortality include the idea that the more aggressive types of melanoma are not the types associated with UV light damage, or that the collagen deposits and other skin changes that come with solar elastosis form a barrier to invasiveness and/or metastasis.

So is there a safe level of sun exposure, one that perhaps should be recommended to the public?

Some experts are beginning to think there is, Bruce Armstrong, M.D., head of the school of public health at the University of Sydney, pointed out at the meeting.

Reviewing the history of the evidence, Dr. Armstrong said it is fairly clear that sun exposure attenuates cancer risks, and that melanoma is not the sole malignancy to have a relationship to lack of sun.

The observation that sunlight may protect against cancer was first made in 1941 by investigators exploring the idea that people who got skin cancer did not get other cancers; since then, low sun exposure has been correlated with a high risk of prostate, breast, ovarian, and colon cancers and, most recently, non-Hodgkin's lymphoma.

As with melanoma, data have suggested that sun exposure might attenuate the mortality of some of these cancers, Dr. Armstrong said.

In 1983 in Australia, his group documented an association between increased melanoma survival and sun exposure. More recently, another group has shown, using a large database, that in Europe melanoma diagnosis and mortality has a seasonal variation that may relate to sun exposure (*Eur. J. Cancer* 2005;41:126-32).

Though it is not proven that vitamin D is the mechanism of the cancer effects seen, there is some evidence that even in sunny climates, vitamin D deficiency may be common, Dr. Armstrong said.

One recent survey of Australian populations found that even at the end of summer, 30% of Australian boys were marginally vitamin D deficient, as was a much higher percentage of the

elderly, particularly those with dark skin.

It also must be noted that sun exposure has a number of other health benefits, including promoting bone health and even just creating a sense of well-being, Dr. Armstrong added.

It has been suggested that receiving the equivalent of one minimal erythema dose to the hands and face per week is sufficient for vitamin D synthesis, Dr. Armstrong said. That amount of exposure, Dr. Berwick said, would translate into about 5-10 minutes per day spent in sunshine, two to three times per week.

On the other hand, no melanoma experts appear to be recommending that campaigns to warn about the dangers of too much sun exposure should be abandoned.

Addressing that question directly in two separate lectures, Martin A. Weinstock, M.D., noted that sun education campaigns appear to have made little difference in behavior.

He said that regular self-performed skin examination appears to be the more important melanoma strategy because studies show that it can be encouraged and that it significantly affects mortality.

But both approaches are still needed, said Dr. Weinstock, a professor of dermatology at Brown University, Providence, R.I. Evidence still implicates sun exposure in the genesis of melanoma, and primary prevention will always be important, he said.

"Obviously, there are new hypotheses out there, but a lot remains to be elucidated," he said. "People still need to take measures for both prevention and early detection." ■

## Skin Cancer Incidence Increasing in Young, Especially Women

BY MICHELE G. SULLIVAN  
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In people younger than 40 years, the combined rate of basal and squamous cell carcinomas increased by 74% from 1976 to 2003, Leslie J. Christenson, M.D., and colleagues have reported.

From 1976 to 1979, the combined incidence of basal and squamous cell carcinoma was 19/100,000. In 2000-2003, the rate had increased to 33/100,000.

The biggest increase occurred in basal cell carcinomas in women, wrote Dr. Christenson, a dermatologist at the Mayo Clinic, Rochester, Minn., and her associates. In 1976-1979, the incidence of basal cell carcinoma (BCC) in women was 13/100,000; by 2000-2003, it had risen to 31/100,000. Rates in men rose as well, but not as sharply (23/100,000 vs. 27/100,000)

(*JAMA* 2005;294:681-90).

"These findings in young people really speak to the risk factors in this population," study coauthor Randall K. Roenigk, M.D., said in an interview. "This is not due to people living longer and getting more sun exposure. These people are either getting more exposure, or the exposure they get is worse."

The population-based study, which drew its data from the Rochester Epidemiology Project, wasn't able to draw associations between exposure and tumors. However, the study offered clues that seem to implicate tanning as one cause.

The head and neck are typically the most

common sites of BCC and squamous cell carcinoma (SCC). Only about 60% of the tumors in this study occurred there—lower than the 80%-90% reported for the general population. Forty-one percent of the BCCs were located on the torso. "This

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change in location has been thought to support the etiologic factor of excessive outdoor tanning, use of tanning parlors, or both," they wrote.

Of those BCCs on the torso, 48% were superficial, 36% were nodular, and 7% were aggressive. In contrast, of those tumors on the head and neck, 4% were superficial, 49% were nodular, and 24% were aggressive.

Squamous cell carcinoma rates in-

creased as well, rising from 1/100,000 in 1976-1979 to 4/100,000 in 2000-2003. There were no significant rate differences between men and women.

The study, which excluded anyone with a genetic predisposition for skin cancer, casts doubt on the assumption that some of the recent increase in skin cancers is the result of people living longer and thus, having more cumulative sun exposure, said Dr. Roenigk, chairman of the dermatology department at the Mayo Clinic. "These people are under 40—they don't have that cumulative risk. This is behavior driven."

Stay alert to the possibility of skin cancers in younger patients, Dr. Roenigk advised. "The bottom line is, we're going to see it in younger populations, and this curve will probably continue to rise as these people age, unless they change their behavior drastically." ■