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Opinion

Guest Editorial

Melanoma's Public Message

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The dermatologic community has worked hard to educate the public about reducing mortality related to melanoma. But some public education messages that we've endorsed may actually be doing more harm than good.

The three messages most in need of rethinking are:

1. Sun exposure is the major cause of melanoma.
2. You can recognize a worrisome mole with the mnemonic ABCD.
3. The incidence of melanoma is rising rapidly, and we have a crisis on our hands.

During my 10 years at the University of Pittsburgh Medical Center during the 1990s, we conducted melanoma screenings twice per year. We memorialized the screenings after a resident trainee who died of metastatic melanoma. He and his wife were observing a mole change in his armpit for several years. Because the site was sun protected, they delayed seeking help until it was too late. They were both under the impression that melanoma was caused by sun exposure. He died of metastatic melanoma at age 28.

Another case illustrates the same problem. A 40-year-old woman came to one of our melanoma screenings with a lesion on her leg. Subsequently, the lesion was documented to be a squamous cell carcinoma. During the screening by my colleague Dr. Mark Seraly, he suggested a full skin examination and discovered a large melanoma on the heel of her plantar foot. She had been observing the plantar mole change for more than 2 years. She was under the impression that melanoma was caused by the sun and assumed that a changing mole on her plantar foot could not be a problem. She died of metastatic melanoma 3 years later.

Why did the medical resident and young woman ignore their changing moles for so long? They were certain that a changing mole in a sun-protected site could not be a problem. The public health message that melanoma is caused by the sun appeared to be responsible for delayed

diagnosis—a potential death sentence for this tumor.

It should be kept in mind that half of the melanomas occurring in African Americans and other darkly pigmented groups occur on palms, soles, and mucous membranes. Melanoma mortality is higher for melanomas occurring in these sites. The sun message will certainly delay melanoma diagnosis for darkly pigmented people.

Currently, the most important risk factors for developing melanoma include the presence of a new or changing mole or unusual mole, a personal or family history of melanoma, and prominent numbers of moles or atypical-appearing moles.

When I worked in Boston during the 1970s and 1980s, I was made aware of a Harvard-trained pulmonologist who was observing a changing mole on his upper back with his fiancée, a Harvard trained pediatric resident. The lesion had been changing for several years. After his fiancée attended one of my lectures at Boston Children's Hospital on melanoma risk factors and early diagnosis, she brought her fiancé to see Dr. Thomas B. Fitzpatrick at Massachusetts General Hospital. While the lesion was adequately removed, he died 6 months later of metastatic melanoma, at age 29 years.

It is notable that this physician had a family history of melanoma, and he also had multiple atypical nevi and a prominent nevus pattern. Moreover, he had one of the most important signs of possible melanoma: a preexisting mole that was changing.

Two highly educated physicians were ignorant of the most important risk factors for developing melanoma. This ignorance was at least in part responsible for a delayed diagnosis. Subsequent to the pulmonologist's diagnosis and untimely death, Harvard Medical School upgraded medical student teaching to include 29 hours of dermatology, which included extensive instruction on melanoma's early diagnosis and risk factors.

If a medical resident can misinterpret public health messages about sun exposure and melanoma, and two Harvard-trained physicians were ignorant about the most important risk factors for developing melanoma, then the general public will tend to make the same potentially fatal mistakes. Those mistakes lead to delayed diagnosis of this potentially lethal cancer—particularly when we pound out the message that the culprit in melanoma is sun, sun, sun, and we are not sufficiently emphasizing the most important risk factors for developing melanoma.

Ultraviolet radiation undoubtedly can damage cells and lead to malignancy, and certain types of melanoma probably are caused by sun exposure, particularly those melanomas arising from lentigo maligna. It is also likely that sun-induced freckles may be the link between ultraviolet radiation exposure and some varieties of melanoma occurring in sun-damaged skin.

However, melanoma is a heterogeneous disease with multiple causes, arising from potential precursor moles that have little or nothing to do with sun exposure, including dysplastic nevi, congenital nevi, and abnormal moles on acral surfaces and mucous membranes.

We really do not know what proportion of melanomas can be prevented by sun avoidance, and it is unrealistic to believe that we are going to keep people out of the sun by preaching its dangers. Consider our awful winters in the northern United States. When spring finally comes, and the sun is shining, try to keep people out of the sun!

Don't waste time scaring people about sun exposure. Instead, encourage self-examination, early detection, and education about melanoma risk factors and potentially dangerous moles and early warning signs.

Like the sun message, the ABCD rules (Asymmetry, Border irregularity, Color, and Diameter) we have disseminated may be too simple and possibly misleading.

About 10%-30% of cutaneous melanomas may be nodular melanomas—that is, usually black, round, and initially small in their early phase of development. Early nodular melanomas, and other varieties of melanoma in their early phase of development, may not fit the ABCD criteria.

Worse, the ABCD mnemonic may be obsolete. When it was first conceived in the early 1970s, most melanomas at the time of detection had a diameter greater than 6 mm—the pencil eraser equivalent—and only 6% were smaller.

That may no longer be the case. More recent surveys have found that 30% of cutaneous melanomas diagnosed currently were smaller than 6 mm.

With our current ABCD message, the general public and medical community will think that if a mole is smaller than 6 mm, they don't need to worry.

But small is good—it is what we want to find.

Smaller melanomas tend to be thinner and more curable than big melanomas. In fact, the ABCD rule may guarantee more advanced melanomas. I would propose that the ABCD rule be dropped for simpler and focused messages.

This brings us to the third message about which I am concerned: the declaration that the incidence of melanoma is rising at an alarming rate.

This alarmist message may be distorting the real story. While the incidence of melanoma was rising rapidly beginning in the mid-1970s, that is not the case now. Currently, the incidence of melanoma is not increasing rapidly, except in one segment of the population: men and women older than 65 years. For all other groups, the incidence appears to be leveling off.

The increase in melanoma incidence during the past 25 years may simply be an artifact of better detection and intentional screening, akin to the way routine mammography altered incidence in breast cancer and Pap smears in cervical cancer. The proportion of melanomas that are metastatic is falling, and the case-fatality rate in melanoma has dropped appreciably—from about 44% in the mid-1950s to less than 20% in the late 1980s and about 15% today.

Physician education and awareness may have had an impact as well.

For example, about 600,000 physicians in the United States in 1973 received a pamphlet reprinted by the American Cancer Society from an atlas of cutaneous melanoma originally published in the New England Journal of Medicine (N. Engl. J. Med. 289[19]:989-96, 1973), spearheaded by Dr. Thomas B. Fitzpatrick, Martin C. Mihm Jr., and others from the Massachusetts General Hospital in Boston. The melanoma incidence rate rose rapidly after that booklet's distribution, and the rapid rise continued for about 20 years.

The fact is, we are not in an alarming situation. Rather, we are doing quite well in many respects.

The case-fatality rate for melanoma is falling, the mortality rate is leveling off or falling in most age groups, and the 5-year overall survival rate has improved from 50% during the mid-1950s to better than 90% currently.

The better survival rate is due not to better treatment, because there is currently no effective treatment that prolongs survival for metastatic melanoma. We are doing better because melanoma is being diagnosed at an earlier stage of development. Older men and women account for the continued rise in melanoma mortality. Older men and women tend to present with bigger, thicker, more advanced tumors than young people.

So, how should we change the messages we deliver about melanoma?

First, we should be realistic about how we portray the situation.

We should explain that melanoma is endemic, and it will continue to be.

We should also stress the importance of skin awareness and total skin examinations by general physicians and skin specialists. We know that patients detect 70% of melanomas. But we also know that patients are not very good at identifying early melanomas. Melanomas found by patients tend to be bigger and thicker than those found by general physicians and dermatologists.

Because we know that family history and atypical moles are important risk factors for developing melanoma, we should encourage our patients who have had melanoma or atypical moles to bring in their entire family for screening examinations. Medical insurance plans need to encourage this practice to detect people who have a high risk for developing melanoma and to reduce the occurrence of lethal melanoma.

The public deserves more focused, effective, and accurate messages about melanoma and melanoma risk factors. We need to do more than simply telling people that all they need to do is stay out of the sun and follow the ABCD rule for diagnosing melanoma.

We need to inform the general public about melanoma risk factors and potential precursor moles. I would propose that our public messages include the following:

1. Be aware of the most important risk factors for developing melanoma, including a family or personal history of melanoma, atypical-appearing moles, one or more large moles, or large numbers of moles.
2. Examine yourself and loved ones once per month.
3. See your physician if you detect an unusual-looking mole, a new mole, or a preexisting mole that has changed or is persistently changing.

Such signs or physical traits do not guarantee that you have melanoma or will develop melanoma, but require a physician consultation to be sure.

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Tanning beds: What do the numbers really mean?

May. 7, 2010

Dr. Ivan Oransky, M.D., editor of Reuters Health, AHCJ treasurer

May has been declared "Melanoma Awareness Month" or "Skin Cancer Awareness Month" – depending on which group is pitching you – and reporters are doubtlessly receiving press releases and announcements from a number of groups, including the Melanoma Research Foundation, the Skin Cancer Foundation, hospitals, doctors and other organizations.

Those press releases often point to the World Health Organization, which reports that "use of sunbeds before the age of 35 is associated with a 75% increase in the risk of melanoma" – a statistic often repeated in news stories about tanning beds. But what does that really mean? Is it 75 percent greater than an already-high risk, or a tiny one? If you read the FDA's "Indoor Tanning: The Risks of Ultraviolet Rays," or a number of other documents from the WHO and skin cancer foundations, you won't find your actual risk.

That led AHCJ member Hiran Ratnayake to look into the issue in March for *The* (Wilmington, Del.) *News Journal*, after Delaware passed laws limiting teens' access to tanning salons. The 75 percent figure is based on a review of a number of studies, Ratnayake learned. The strongest such study was one that followed more than 100,000 women over eight years. But as Ratnayake noted, that study "found that less than three-tenths of 1 percent who tanned frequently developed melanoma while less than two-tenths of 1 percent who didn't tan developed melanoma." That's actually about a 55 percent increase, but when the study was pooled with others, the average was a 75 percent increase. In other words, even if the risk of melanoma was 75 percent greater than two-tenths of one percent, rather than 55 percent greater, it would still be far below one percent.

For some perspective on those numbers, Ratnayake interviewed Lisa Schwartz, M.D.,M.S., whose work on statistical problems in studies and media reports is probably familiar to many AHCJ members. "Melanoma is pretty rare and almost all the time, the way to make it look scarier is to present the relative change, the 75 percent increase, rather than to point out that it is still really rare," Schwartz, a general internist at Veterans Affairs Medical Center in White River Junction, Vt., told him.

In a nutshell, the difference between skin doctors' point of view and Schwartz's is the difference between relative risk and absolute risk. Absolute risk just tells you the chance of something happening, while relative risk tells you how that risk compares to another risk, as a ratio. If a risk doubles, for example, that's a relative risk of 2, or 200 percent. If it halves, it's .5, or 50 percent. Generally, when you're dealing with small absolute risks, as we are with melanoma, the relative risk differences will seem much greater than the absolute risk differences. You can see how if someone is lobbying to ban something – or, in the case of a new drug, trying to show a dramatic effect – they would probably want to use the relative risk.

This is not an argument for or against tanning beds. It's an argument for clear explanations of the data behind policy decisions. For some people, the cosmetic benefits of tanning beds – and the benefit of vitamin D, for which there are, of course, other sources – might be worth a tiny increase in the risk of melanoma. For others, any increased risk of skin cancer is unacceptable. (And of course, for the tanning industry, the benefits can be measured in other ways – dollars.) But if reporters leave things at "a 75 percent increase," you're not giving your readers the most important information they need to judge for themselves.

So when you read a study that says something doubles the risk of some terrible disease, ask: Doubles from what to what?

ASA
American Suntanning Association

5 Reasons 'Tan Ban' Legislation Would Be A Mistake

While the professional tanning community supports constructive and cooperative measures to increase UV awareness and sunburn prevention, a matter our market takes very seriously, passage of legislation denying teenagers with their parents consent access to indoor tanning facilities would actually hurt more people than it helps and will lead to an *increase* in sunburn and skin injury. Proponents of such a measure, however well-intentioned, ignore conflicting research and confounding information and are doing the wrong thing for the right reasons. Specifically:

1. Dermatology uses sunbeds to treat cosmetic conditions. Dermatology uses identical sunbeds in their offices to treat cosmetic skin diseases. "Phototherapy" (at up to $100 a session, billed to insurance companies) is more intense and can involve sunburn and even second-degree burning as a side effect. If this were a health-care issue, dermatology would suspend their own use of sunbeds for cosmetic purposes. But they haven't. In fact, they've lobbied to preserve it, introducing legislation to mandate that insurance companies no longer charge $50 co-pays for dermatology sunbed sessions.

2. The science does not support it. Professional tanning salons are not the problem. Ban proponents have misrepresented the World Health Organization's data on this topic, which actually points to medical use of sunbeds for the treatment of cosmetic skin diseases and unmonitored home tanning units, but not professional tanning salons[i]:

WHO REPORT BY CATEGORY	RISK FACTOR
Dermatology psoriasis sunbeds:	96% increase
Professional tanning salon sunbed usage	6% increase

3. Parents do not support it. Two-thirds (67.1 percent) of American parents with teenagers support the tanning industry's current parental consent standard, according to a study of more than 1,000 adults with teenagers conducted by International Communications Research. Only 27.3 percent were in favor of new restrictions on teenage access to tanning facilities.

4. A ban will cost businesses and taxpayers money to implement. Enforcement of this provision will cost taxpayers money to implement, will hurt small businesses and ultimately will not affect consumer behavior. Bill proponents are overstating the risks of regular non-burning UV exposure and consumers know it -- they will seek other options.

5. A ban will accomplish the opposite of what sponsors intend. Independent surveys have established that teens will simply tan more aggressively outdoors or will turn to unregulated home tanning units in friends' basements if they are not permitted to tan in salons with their parents consent. That simply drives the issue underground into sunbeds that do not have the exposure controls that are present in professional tanning facilities. Sunburn will increase, not decrease.

CONCLUSION: The present system works. Requiring signed consent from a parent/guardian is working. It's what most parents want. The tanning market supports constructive efforts to bolster this standard.

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[1] [i] Papas MA, Chappelle AH. Differential Risk of Malignant Melanoma By Sunbed Exposure Type. Proceedings of 3rd North American Congress of Epidemiology. Am J of Epid. 2011; 1003

The Affect of Sunbed Location on Melanoma Risk: A Pooled Analysis[1]

Papas MA, Chappelle AH, Grant WB

Summary

A 2006 International Agency for Research on Cancer meta-analysis reported a "limited" and "weak" positive association between sunbed use and cutaneous malignant melanoma (meta-odds ratio = 1.15, 95% confidence interval: 1.0, 1.3). That same review also reported a positive association between ever-use of a sunbed and cutaneous malignant melanoma (meta-odds ratio = 1.75; 95% CI, 1.35-2.26) for first exposure to sunbeds before 35 years of age. This figure has been widely referenced, yet the distinction of the exact characterization of sunbed usage, as detailed in the data collection, limits the interpretability of these findings and raises further questions. Usage of unsupervised home sunbeds and sunbeds used by doctors as medical devices make up half of the cases reported in the data in addition to commercial sunbed usage. This contamination of the data appears to significantly affect the results. When commercial sunbed usage is considered independent of home and medical usage of sunbeds, the IARC review data no longer suggest a significant association.

HOME TANNING UNITS

STUDY	Case Yes	Case No	Control Yes	Control No	Calculated Odds Ratio
Swerdlow 1988	No data or assumptions provided				
Walter 1990	71	431	40	498	2.05
Westerdahl 1994					
Chen 1998	96	483	51	417	1.63
Chen 1998 (people <25)	57	483	26	417	1.89
Westerdahl 2000	34	319	38	538	1.51
Veierod 2003					
Bataille 2005	126	113	142	107	0.84
TOTAL	327	1346	271	1560	**1.40 (95% CI: 1.17-1.66)**

INDOOR TANNING SALONS

STUDY	Case Yes	Case No	Control Yes	Control No	Calculated Odds Ratio
Swerdlow 1988	No data or assumptions provided				
Walter 1990	59	431	55	498	1.24
Westerdahl 1994					
Chen 1998	44	483	44	417	0.86
Chen 1998 (people <25)	14	483	16	417	0.76
Westerdahl 2000	52	319	64	538	1.37
Veierod 2003					
Bataille 2005	189	169	212	161	0.85
TOTAL	344	1402	375	1614	**1.06 (95% CI: 0.89-1.24)**

MEDICAL 'PHOTOTHERAPY' SESSIONS

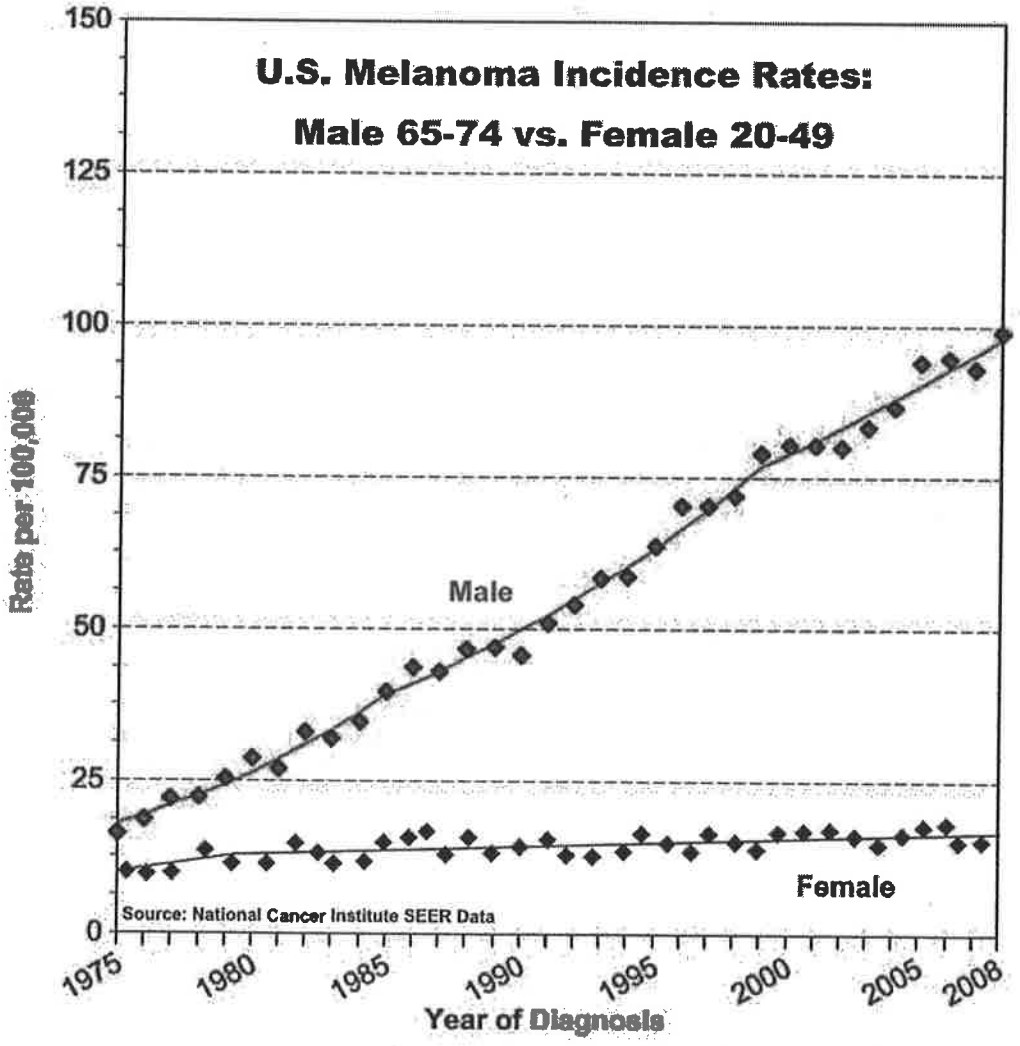
STUDY	Case Yes	Case No	Control Yes	Control No	Calculated Odds Ratio
Walter 1990	17	431	10	498	**1.96 (95% CI: 0.89-4.33)**

[1] Papas MA, Chappelle AH. Differential Risk of Malignant Melanoma By Sunbed Exposure Type. Proceedings of 3rd North American Congress of Epidemiology. Am J of Epid. 2011; 1003

NATIONAL® CANCER INSTITUTE

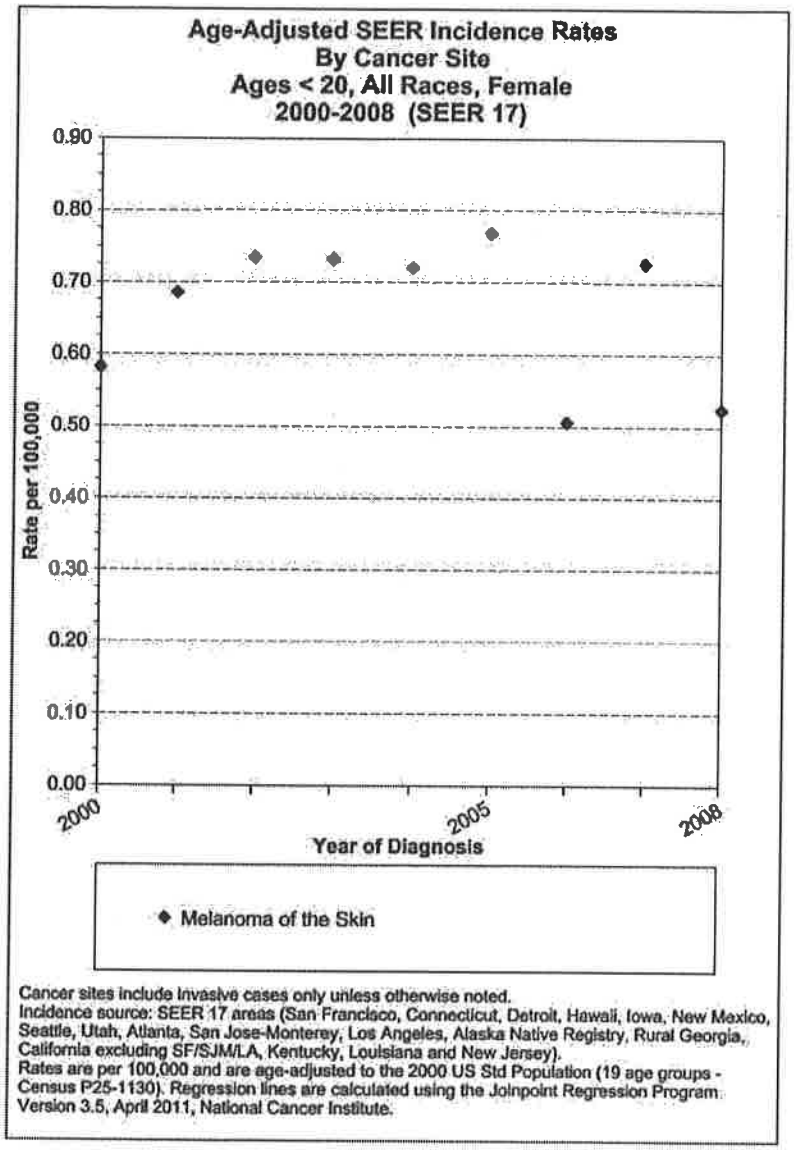
MELANOMA INCIDENCE: INCREASING IN MEN

The National Cancer Institute shows that melanoma incidence is increasing much faster in men than in women since the early 1970s. For women under age 50, incidence rates have actually leveled off and are declining. But dermatology industry lobbying groups continue to promote the opposite -- leading the press to believe that melanoma is increasing fastest in young women. The best data suggest otherwise.



NATIONAL® CANCER INSTITUTE

National Cancer Institute Data:
Melanoma Incidence Decreasing in Women Under Age 20



WHAT THIS CHART SHOWS:

- Melanoma incidence in women under 20 is extremely rare -- about 1 case per 200,000 -- and has decreased in the past 10 years, according to the National Cancer Institute's data.