



A Message From the President



The incidence of skin cancer in the US continues to grow. According to a recent study published in the *Archives of Dermatology*, more than two million Americans are affected by over 3.5 million skin cancers every year. This represents more than a 300 percent increase in total skin cancers since 1994, the last time such data were released.

Skin cancer is truly an epidemic, with more new cases annually than the combined incidence of cancers of the breast, prostate, lung, and colon. While it is usually very treatable when caught early, it should not be taken lightly. Skin cancers have a high rate of recurrence, and anyone who has had one runs an increased risk of developing another skin cancer, including melanoma. Additionally, people who have had nonmelanoma skin cancers have twice the risk of developing other malignancies, such as lung, colon, and breast cancers. Melanoma, if not caught in a timely manner, may metastasize (spread) to distant tissues or organs, and can be life-threatening.

Even though skin cancers are becoming more and more common, you need not become a statistic. Skin cancer remains one of the most preventable forms of cancer. Since approximately 90 percent of all nonmelanoma skin cancers are associated with exposure to ultraviolet (UV) radiation, you can lower your risk by limiting your exposure to the sun and tanning devices, which also emit harmful UV rays. Sun protection behaviors such as seeking the shade (particularly between 10 AM and 4 PM); wearing protective clothing; and applying a sunscreen with an SPF of 15 or higher regularly are important all year round, but now that the weather has warmed up and we're spending more time outdoors, precautions are especially vital.

Enjoy the spring, and please visit www.SkinCancer.org/Guidelines/ for more information on how to best protect your skin from UV-induced damage. ☑

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Ask the Expert

In this section, dermatologists answer questions from the public. Our guest physician is Steven Q. Wang, MD, Director of Dermatologic Surgery and Dermatology at Memorial Sloan-Kettering Cancer Center at Basking Ridge, NJ. Dr. Wang is a member of The Skin Cancer Foundation's Photobiology Committee.



Steven Q. Wang, MD

Q. Does a higher-SPF (sun protection factor) sunscreen always protect your skin better than a lower-SPF sunscreen? How high should I go?

A. Sunscreens with a higher SPF *should* offer more protection from the sun's harmful ultraviolet (UV) radiation, which is linked to the vast majority of skin cancers, as well as premature skin aging and eye damage. But the answer is not that simple.

UV radiation reaches the earth in the form of UVB and UVA rays. UVB radiation plays a key role in skin cancer, and SPF refers mainly to the amount of UVB protection a sunscreen offers. Thus, higher SPFs can help: An SPF 15 sunscreen blocks 93 percent of UVB radiation, while an SPF 30 sunscreen blocks nearly 97 percent. Furthermore, higher SPF values offer some safety margin, since consumers generally do not apply enough sunscreen. To evaluate SPFs, testers apply two milligrams of sunscreen per square centimeter of skin. But in everyday life, most people apply from only 0.5 to one milligram per square centimeter of skin. Consequently, the actual SPF they achieve is approximately 1/3 of the labeled value.

Despite these advantages, there are potential downsides to using products with very high SPFs. First, above SPF 50 (which blocks an estimated 98 percent of UVB rays), the increase in UVB protection is minimal. Second, although UVA protection is also important (UVA not only accelerates skin aging, but contributes to and may even initiate skin cancers), SPFs mainly measure UVB protection. Individuals applying high-SPF sunscreens may not burn (UVB is the chief cause of sunburn), but without UVA-screening ingredients they can still receive large amounts of skin-damaging radiation. To avoid

such a scenario, regulatory bodies in Europe and Australia have adopted UVA testing guidelines and measurement standards, and capped the SPF of sunscreens at 50+. The US Food and Drug Administration (FDA) may do the same, but hasn't to date.

Products with very high SPFs may also encourage individuals to neglect other photoprotective behaviors, like seeking the shade and wearing sun-protective clothing. By preventing sunburn, sunscreens with very high SPFs can create a false sense of security, prompting consumers to stay out in the sun longer. Sun damage (for example, UVA damage) can take place without skin-reddening doses of UV radiation, and even the best sunscreens should be considered just one vital part of a comprehensive sun protection regimen.

The importance of using both UVB and UVA protection cannot be emphasized enough. For patients who really wish to know "how high should I go?" I suggest products with SPFs no lower than 30 and no higher than 50. In addition to an SPF of 30+, your sunscreen should include some combination of the following UVA-blocking ingredients: zinc oxide, titanium dioxide, avobenzone, ecamsule, and oxybenzone. Sunscreens with both UVA and UVB protection may be labeled *multi spectrum*, *broad spectrum*, or *UVA/UVB protection*. ☑



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THE FACTS ADD UP: Melanoma is Linked to UV Tanning



In the past year, the evidence linking ultraviolet (UV) tanning to melanoma, the deadliest skin cancer, has grown considerably stronger.

In July 2009, the International Agency for Research on Cancer (IARC), affiliated with the World Health Organization (WHO), announced that UV radiation from tanning machines had been added

In December, 2009, scientists revealed the strongest evidence yet that some melanomas are caused by exposure to UV radiation.

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to its infamous Group I — substances such as plutonium deemed "carcinogenic [cancer-causing] to humans." The IARC's special report in *The Lancet* marked its official recognition that tanning devices are a comparable cause of cancer.

Although it has long been generally acknowledged that about 90 percent of nonmelanoma skin cancers (NMSC), such as basal and squamous cell

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carcinoma, are associated with exposure to UV radiation, UV's link to melanoma has been debated. But in their report, members of the IARC's Monograph Working Group cited comprehensive studies showing that risk of melanoma increased by 75 percent when tanning bed use began before age 35.

THE GENETICS OF A MELANOMA

Despite the IARC report, some experts remained skeptical. Heredity plays a

The melanoma genome contains more than 33,000 mutations, many of which bear the imprint of... ultraviolet light.

significant role — a family history of melanoma greatly increases the risk of developing the disease — and some scientists argued there was still no convincing proof of a link between UV radiation and melanoma. Then, in December, 2009, scientists revealed the strongest evidence yet that some melanomas are caused by exposure to UV radiation.

When researchers at The Wellcome Trust Sanger Institute, in Hinxton, UK, mapped the complete genetic material (the genome) that composed a melanoma taken from a patient with the disease, they identified thousands of mutations. Mutations are changes or errors in genes caused by radiation, viruses, and other causes, and some can ultimately lead to cancer. According to the Sanger Institute, "The melanoma genome contains more than 33,000 mutations, many of which bear the imprint of the most common cause of melanoma — exposure to ultraviolet light."

The scientists compared the genomes of both normal and melanoma tissue to pinpoint where in the melanoma the mutations occurred, and saw exactly how UV exposure had affected DNA. "We can see the desperate attempts of our genome to defend itself against the damage from ultraviolet radiation," the study's coauthor, Mike Stratton, MD, PhD, explained. "Our cells fight back furiously to repair the damage, but frequently lose that fight." The result can be melanoma.

It's not clear yet to just what extent UV radiation influences the development of melanoma, but this research, published in *Nature*, all but confirms UV radiation as a cause of melanoma.



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**THE PANEL IS UNANIMOUS:
Raise Tanning Beds to
Higher Medical Device Classification**

The US Food and Drug Administration (FDA) classifies tanning machines as Class I medical devices, meaning they are subject to few federal regulations and little oversight. However, this could soon be changing. On March 25, the General and Plastic Surgery Devices Panel of the Food and Drug Administration (FDA)'s Medical Devices Advisory Committee unanimously recommended that the FDA upgrade its classification of tanning devices.

The recommendation followed four hours of testimony from the public, including physician members of The Skin Cancer Foundation and skin cancer survivors.

The Panel unanimously concluded that Class I was inappropriate, since it incorrectly treats tanning machines as devices that "present minimal potential for harm to the user." (Elastic bandages and tongue depressors are also Class I

devices.) Some Panel members favored Class II, and others Class III, the most strictly regulated category. The majority of the Panel favored an age restriction to limit minors' access. [See "Limiting Teens' Access to Tanning Beds" below.] The Panel also approved of more disclosure to users about tanning's dangers, and better placement of labels warning users about these risks.

Finally, Panel members floated the possibility of creating a registry of tanning bed users; stricter educational, testing, and recertification requirements for tanning salon staff, and ensuring that tanning bed customers read and accept health warnings prior to using a tanning machine.

The FDA will now consider the Panel's recommendations. Please visit our website, www.SkinCancer.org, for the latest news on the reclassification of these dangerous machines.

GOAL: LIMITING TEENS' ACCESS TO TANNING BEDS

Because the FDA still classifies tanning machines as Class I medical devices, teens have almost unlimited access to them, making up 2.3 million of the nearly 30 million indoor tanners in the US every year. With melanoma incidence in people under age 20 rising 2.9 percent between 1973 and 2001, many experts believe this easy access is dangerous. In a recent issue of *The Skin Cancer Foundation Journal*, Philippe Autier, MD, MPH, former head of the International Agency for Research on Cancer (IARC)'s Prevention Group, pointed out that there is "considerable data pointing to

childhood and adolescence as the key periods for initiation and development of melanoma in adulthood." In a landmark report last year naming UV tanning devices as an important cause of cancer, the IARC cited research showing that first exposure to tanning beds in youth increases melanoma risk by 75 percent.

Laws regarding minors' access to tanning beds currently vary from state to state, with some even allowing children under age 14 to tan indoors if they are accompanied by a parent or guardian. Raising the classification of tanning beds to Class II or higher would make teens' access to tanning beds more difficult. This is a key goal for anti-tanning experts and groups such as The Skin Cancer Foundation.

FAST FACTS

Tanning salons generate an estimated annual revenue of \$5 billion.

Frequent tanners using new high-pressure sunlamps may receive up to 12 times more UVA annually from sunlamps than from the sun.



THE SKIN CANCER FOUNDATION'S CAMPAIGN FOR GREATER REGULATION

After the International Agency for Research on Cancer (IARC)'s report appeared late last year adding UV tanning devices to its Group One list of cancer causes, The Skin Cancer Foundation commissioned a white paper to the FDA urging greater regulation of tanning machines, and began working with legislators on this effort. In November, the FDA announced it would hold a meeting to discuss upgrading the classification of tanning machines from Class I, its lowest regulatory category. The

steps the Foundation had taken were instrumental in making the meeting happen.

When the meeting was scheduled for this past March 25, the Foundation immediately launched a citizen's petition in favor of reclassification, which garnered nearly 300 signatures. We also encouraged members and friends to submit testimony in favor of reclassification to the FDA via their website, and on March 25, experts representing the Foundation provided key testimony at the meeting. The preliminary results of the meeting are summarized at left.

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