# Tanning vs. Sunburns

The association of sunburns with the development of melanoma has led the indoor tanning industry to suggest that if only these people were tanned, they would not sunburn, and thus their melanoma risk would decrease. **This concept is erroneous**. First, it remains unclear whether the "sunburns only" hypothesis of melanoma development is true. Second, tans acquired at indoor tanning parlors have been studied and have a very poor ability to prevent sunburning. Finally and most important, very fair-skinned people are at the highest risk for melanoma, and they tan poorly or not at all, and burn whether at the beach or at the tanning salon. For this high risk group, the burn versus tan debate is irrelevant.
While it is clear that ultraviolet light causes all three types of skin cancer, in the case of melanoma and basal cell carcinoma, it is not known whether burning or tanning is more carcinogenic. Even if burns are more carcinogenic than tanning (which clearly is not true for the development of squamous cell carcinoma), with currently available knowledge it is not reasonable to encourage tanning to prevent carcinogenic sunburns. Patrons can and frequently have burned themselves at indoor tanning parlors. Furthermore, indoor tanning provides little protection against burns from the sun. Most important, the tanning process itself, even in the absence of burning, injures the skin.

# Risks of Indoor Tanning

Epidemiologic and clinical studies of indoor tanners themselves are now becoming available to help better assess the risks. Proliferations of melanocytes (pigmented cells) known as lentigines have been seen in indoor tanners. These proliferations are significant in that they demonstrate some of the cytologic atypia and architectural features seen in dysplastic nevi, which are risk factors for melanoma development. Studies examining the development of melanoma in indoor tanners have produced mixed results. Four early studies, reviewed in reference , found little, or statistically insignificant, association between indoor tanning and melanoma. However, six more recent, rigorously designed studies have found an association between indoor tanning and the development of melanoma. Of particular note, no study has ever suggested a protective role for indoor tanning. While these studies remain inconclusive, they were enough for the American Medical Association to call for a ban on tanning beds.

# Public Policy on Tanning

Physicians and medical groups around the world have undertaken extensive campaigns to decrease excessive exposure to ultraviolet light in order to reduce the current epidemic of skin cancer. These efforts have been successful at educating the public. Surveys show there is increasing awareness that ultraviolet light causes skin cancer. Despite this knowledge, tanning indoors and outdoors is more popular than ever. Most studies suggest young women are the most frequent patrons of tanning salons. The development of photoaging and skin cancer will take years to become apparent in these young tanners, while the perceived social value of a tan is apparent immediately. It seems likely the indoor tanning industry will continue to actively market its services, including the rather dubious claim that indoor tanning is not only harmless but is healthy. Regulation of the tanning industry at the state and national level is important, especially to prevent false health claims from being made. Physicians and those concerned about preventing skin cancer can and should continue to play a major role in educating the public about the dangers of tanning, especially directing efforts towards young tanners.

# *Strike Three Against Tanning Machines*

If anyone thought the jury was still out on the danger of tanning machines, new research may provide the clincher. A study from Dartmouth Medical School in Lebanon, NH, links tanning device use to basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), the most common forms of skin cancer.

The researchers interviewed 603 BCC and 293 SCC patients (plus 540 healthy subjects) about their sunbed and sunlamp use, history of sun exposure, sun sensitivity, sunburns, and other skin cancer risk factors. With all factors accounted for, tanning device users had 2.5 times the risk of SCC and 1.5 times the risk of BCC, compared to non-users.

"Our study strongly suggests that sunbed and sunlamp use may increase the incidence of nonmelanoma skin cancers," says lead author Margaret R. Karagas, PhD. "Further research is needed to determine an appropriate public health response."

*Sun & Skin News* readers know that we've frequently presented evidence of the harm caused by indoor tanning. Our last issue described recent research showing that people exposed to full-body tanning salon sessions have a significant increase in skin repair proteins typically associated with sun damage. ("Regulations Don't Make Tanning Salons Safe," Vol. 18, No. 4 2001). We also noted previous findings that women who frequent tanning parlors have a greater incidence of melanoma, the deadliest form of skin cancer.

# *STUDY LINKS TANNING MACHINES TO COMMON SKIN CANCERS*

NEW YORK, NY, April 1, 2002 - The use of tanning devices has now been more clearly linked than ever to the two most common forms of skin cancer, basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), according to an article in the latest issue of *Sun & Skin News*, a publication of The Skin Cancer Foundation.

Researchers at Dartmouth Medical School in Lebanon, NH, interviewed 603 BCC and 293 SCC patients (plus 540 healthy subjects) about their sunbed and sunlamp use, their history of sun exposure, and other skin cancer risk factors. With all factors accounted for, tanning device users had 2.5 times the risk of SCC and 1.5 times the risk of BCC, compared to non-users.

"Our study suggests that tanning lamp use may increase the incidence of nonmelanoma skin cancers," says lead author Margaret R. Karagas, PhD. "Further research is needed to determine an appropriate public health response."

Previous studies have shown that people exposed to full-body tanning salon sessions have a significant increase in skin repair proteins typically associated with sun damage, and that women who frequent tanning parlors have a greater incidence of melanoma, the deadliest form of skin cancer.

The Skin Cancer Foundation, the only national and international organization concerned solely with cancers of the skin, conducts public and medical education programs and provides support for research and professional training to reduce the incidence, morbidity, and mortality of skin cancers.