By Jonathan Wolfe, MD

# UV Protection Update

Insights on sunscreen safety, the vitamin D craze, and initiatives to promote UV avoidance.

In the struggle to reduce skin cancer rates, dermatologists continuously urge patients to avoid exposure to both UVA and UVB radiation. Among suggested UV avoidance strategies are limitations on sun exposure, the use of sunscreens, avoidance of tanning beds, and use of sun protective clothing and physical sun shields. Each of these recommendations, though theoretically straightforward, can prove complex in practice, particularly when misinformation clouds patients' views. Here's a look at some recent developments in key areas of UV protection.

## Sunscreen Safety

Sunscreens are essential but imperfect tools for the prevention of photodamage. Ironically, some sunscreening chemicals actually induce photoallergic contact dermatitis in susceptible patients. Although photoallergic (PA) reactions to sunscreening chemicals are actually rare, these agents are typically credited with producing the bulk of all PA reactions. Recent investigations confirm that the rates of reactions are thankfully quite low and suggest strategies to improve identification of reactions.[1]

The most recent, large study of PA contact dermatitis associated with sunscreen ingredients involved 1,155 patients from the UK, Ireland, and the Netherlands.[1] Recognizing that the benefits of photopatch testing—accepted as the best option to confirm photoallergy—are limited by under-use as well as variability in technique, researchers sought to establish standard protocols for testing while investigating and accurately accessing rates of reactions.

Patients with a history of suspected photoallergy were recruited from 17 centers to undergo photopatch testing (PPT) with sunscreen chemicals and suspected topical products. Following standardized UVA irradiation at a dose of 5J/cm$^2$, readings were taken at 24, 48, and 72 hours. Of the 1,155 patients studied, 130 (11.3 percent) had allergic reactions. Just 51 of these patients (4.4 percent) had PA reactions, and 15 (1.3 percent) had combined PA and contact allergy (CA). CA alone was identified in the remaining 64 patients (5.5 percent). Most reactions (60 percent) were clinically relevant.

The most common photoallergen was benzophenone-3 (21 percent of reactions), and a new photoallergen was detected in two patients: octyl triazone.

Having precipitated 41 percent of PPTs, history of reacting to a sunscreen product was the most common indication for testing. The remaining 59 percent of patients had an exposed-site dermatitis or other skin problem or an evident photodermatitis. Of note, the use of 72-hour readings in this study allowed for the detection of an additional 32 PA reactions and 22 CA reactions that had not been evident at 48 hours.

This study confirms that photoallergic reactions to sunscreen ingredients is rare and echoes the conclusion of a data analysis earlier this decade that showed that PA rates remain low despite an overall increase in the use of sunscreen products.[2] Nonetheless, a subset of patients may develop PA reactions to sunscreen ingredients, and dermatologists should obviously maintain an index of suspicion in individuals who report a reaction subsequent to sunscreen application as well as in those with an exposed-site dermatitis or photodermatitis. Consider an additional 72-hour reading of the PPT when 48-hour observation fails to yield a reaction.

## The Vitamin D-ception?

Dermatologists individually and collectively have reacted with concern, skepticism, and occasionally significant ire to suggestions that individuals should purposefully expose themselves to UVA radiation on a regular basis in order to prevent vitamin D deficiency. Perhaps the most notable proponent of vitamin

D and the need for regular UV exposure is Michael Holick, MD, PhD, author of *The UV Advantage* as well as clinical review articles and other publications that laud vitamin D—preferably naturally synthesized via UV exposure—to reduce cancer risks and promote overall health.

It turns out that funding from the tanning industry directly supported Dr. Holick's research, a report by Paul Goldberg in *The Cancer Letter* (April 18, 2008, cancerletter.com) reveals. The report says that The UV Foundation, whose research support was acknowledged in Holick's July 2007 article in *The New England Journal of Medicine*, "is an offshoot of the Indoor Tanning Association and that all of its board members also serve as fiduciaries of the parent trade association, which represents the artificial tanning industry."

*The Cancer Letter* goes on to report that the tanning foundation admits giving more than $150,000 in research support to Dr. Holick over three years and that NEJM was informed of the link prior to the article's publication. However, policies for the journal do not require disclosure of the relationship between The UV Foundation and the Indoor Tanning Association. Furthermore, NEJM staff reportedly maintained that information about the UV Foundation's mission and funding are publicly available to those who wish to do the research.

### Out with the In

Continuing its efforts to combat the allure of indoor tanning booths, the AAD last month launched a new public service announcement campaign in conjunction with Melanoma/Skin Cancer Detection and Prevention Month. "Indoor Tanning is Out" features print, television and radio advertisements targeting young women. The Academy notes that research shows 70 percent of indoor tanners are female, primarily 16 to 29 years old, and indoor tanning before the age of 35 has been associated with a significant increase in the risk of melanoma.

Based on the dictum that the best habits are learned early, a sun safety education and behavior encouragement program may be of interest to your patients. Sun protective clothing manufacturer Coolibar (coolibar.com) sponsors the "School Sun Hats" program through which schools can purchase children's sun-shielding hats for about half the regularly listed price. The company also sells bulk sunscreen for use/distribution by schools. ■

*Dr. Wolfe has no relevant disclosures.*

1. Bryden AM, Moseley H, et al. Photopatch testing of 1155 patients: results of the U.K. multicentre photopatch study group. Br J Dermatol. 2006 Oct;155(4):737-47.

2. Darvay A, White IR, Rycroft RJ, Jones AB, Hawk JL, McFadden JP. Photoallergic contact dermatitis is uncommon. Br J Dermatol. 2001 Oct;145(4):597-601.