

## SUMMARY & COMMENT

### Sunscreen Protection of Melanocytic Nevi: More Than Meets the Eye

*Subclinical changes occur in nevi exposed to sunlight; sunscreens and physical barriers protect against some, but not all, UV-related changes.*

Melanocytic nevi are considered melanoma precursors, and people with many melanocytic nevi are at increased risk for melanoma. Sun exposure, as well as being an etiologic agent for melanoma, also produces clinical, histological, and dermatoscopic changes in melanocytic nevi. Two study groups investigated whether topical sunscreens and opaque barriers prevented alterations in melanocytic lesions.

Carrera and colleagues covered half the area of 23 dysplastic nevi with either an opaque barrier or a broad-spectrum sun protection factor 50 sunscreen and exposed the lesions to ultraviolet B light at twice the minimal erythema dose. Seven days after exposure, erythema, pigmentation, and scaling were increased compared with pre-exposure. These effects were at least partially prevented in sunscreen- or barrier-treated halves. Ultraviolet (UV)-induced changes were identified on dermatoscopic examination in some nevi, including diffuse pigmentation, blurring of the pigment network, dotted vessels, and erythema.

Some nevi also had changes in the size of dots and globules and increases in regression structures. Surprisingly, many dermatoscopic changes were also found in the protected nevi halves. Only blurring of the pigment network was significantly less common in protected areas. On histological examination, unprotected portions were more likely to have marked lentiginous melanocytic hyperplasia, suprabasal solitary melanocytes, and prominent and elongated melanocytic dendrites. Unprotected areas also stained more intensely for melanocytic markers HMB-45 and Melan-A, although changes in markers were observed even in protected lesion halves. Similar findings were reported by Massone and colleagues.

#### COMMENT

Unquestionable evidence links sun exposure and tanning bed use to melanoma, and sunscreens reduce these effects. Results of

both studies indicate that subclinical changes occur in nevi exposed to sunlight and that sunscreens and physical barriers protect melanocytic nevi from some, but not all, UV-related changes. Changes in the protected nevi halves may represent indirect effects of exposure on unprotected skin cells adjacent to the nevi or result from exposure to segments of the visible or infrared spectra not filtered by sunscreens. The significance of these changes and how long they persist are unknown. From the dermatologist's perspective, the findings suggest that biopsies performed in recently sun- or tanning bed-exposed skin may produce worrisome histologic findings. These results reinforce the deleterious effects of sun exposure on nevi.

— Craig A. Elmets, MD

*Carrera C et al. Impact of sunscreens on preventing UVR-induced effects in nevi: In vivo study comparing protection using a physical barrier vs sunscreen. JAMA Dermatol 2013 May 8; [e-pub ahead of print]. (<http://dx.doi.org/10.1001/jamadermatol.2013.398>)*

*Massone C et al. Effects of a chemical sunscreen on UV-induced changes of different histological features in melanocytic nevi. JAMA Dermatol 2013 May 8; [e-pub ahead of print]. (<http://dx.doi.org/10.1001/jamadermatol.2013.420>)*

### More Sunscreen, Fewer Wrinkles

*Daily use of sunscreen can slow skin aging associated with middle age.*

Regular sunscreen use protects against cutaneous squamous cell carcinomas and invasive melanomas, but its effect on cutaneous photoaging has received much less attention, despite a popular preoccupation with aging and a multibillion dollar industry focused on reversing its effects.

Investigators conducted a randomized, double-blind, controlled trial in 604 subjects younger than 55, most fair-skinned, to evaluate whether regular sunscreen use prevented photoaging of the skin. Approximately half of the participants were randomized to daily application of an SPF15 sunscreen (containing 8% ethylhexyl-p-methoxycinnamate and 2% 4-tert-butyl-4'-methoxy-4-dibenzoylmethane); the other half were given no instructions and applied sunscreen at their own discretion. The groups were similar in skin color and amount of sun exposure. To evaluate photoaging, silicone impressions of the back of the left hand were made at baseline and 4.5 years.

Experienced assessors graded the imprints on a validated scale. After adjustments for differences in sunburn and photoaging of the neck, the daily sunscreen group was 24% less likely to exhibit evidence of progressive photoaging of the skin than those who used sunscreens at their own discretion (relative odds, 0.76; 95% confidence interval, 0.50–0.98). Some patients also received beta carotene, which had no effect on photoaging compared with placebo.

#### COMMENT

The findings convincingly demonstrate that regular sunscreen use protects against photoaging, and the beneficial effects can be detected after only 4 years. This effect may persuade individuals more concerned about their appearance than about skin cancer to regularly apply photoprotection. Sunscreens used in this study conducted in the mid-1990s primarily protected against ultraviolet B wavelengths — now, many available products also block UVA, and UVA is known to contribute significantly to photoaging. Therefore, modern broad-spectrum sunscreens may be even more beneficial than the older types used in this study. — Craig A. Elmets, MD

*Hughes MCB et al. Sunscreen and prevention of skin aging: A randomized trial. Ann Intern Med 2013 Jun 4; 158:781.*

### Another Look at the "Ampicillin Rash"

*This study found a lower incidence of antibiotic-associated rash in children with Epstein-Barr virus acute infectious mononucleosis than previously reported.*

"Ampicillin rash" associated with Epstein-Barr virus (EBV) acute infectious mononucleosis (AIM) was first described in the 1960s and reported to occur in 80% to 100% of treated patients. Ever since then, the dogma of ampicillin rash associated with EBV has been passed along as infectious diseases gospel. Researchers in Israel reexamined the incidence of rash associated with antibiotic treatment in children with EBV-AIM in a retrospective record review of 238 patients with serologically diagnosed EBV infection in two hospitals between 1999 and 2009.

Rash developed in 33% of the 173 patients who received antibiotics and 23% of the 65 untreated patients. Although this