Mineral sunscreens not recommended by *Consumer Reports*: Suggestions to improve the review process

Amir Varedi, MD,[a] Yelena P. Wu, PhD,[a,b] Stephanie Z. Klein, MD,[b] Sancy A. Leachman, MD, PhD,[c] and Douglas Grossman, MD, PhD[a,b,d]
Salt Lake City, Utah; and Portland, Oregon

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Each year, we are surprised that *Consumer Reports* (CR) magazine does not recommend a mineral sunscreen to its subscribers. Such products containing the active inorganic ingredients zinc oxide or titanium dioxide act by ultraviolet (UV) reflection and might be expected to be more efficient and stable than organic chemical sunscreens, which act by UV absorption and can quickly become saturated or break down. In addition, some chemicals in organic sunscreens might cause contact dermatitis and harm marine life; specifically, oxybenzone can react with chlorine, producing hazardous by-products that can concentrate in swimming pools and wastewater treatment plants.[1] Ultimately, the ability of sunscreen to reduce skin cancer risk relates to prevention of UV-induced DNA damage. In a recent review of sunscreen-mediated prevention of DNA damage, 10 studies were identified that demonstrated sunscreen efficacy; however, no studies involved direct comparisons of chemical versus mineral sunscreens.[2] In 1 study, a zinc- and titanium-based sunscreen completely attenuated the induction of cyclobutene pyrimidine dimers and p53 in sun-exposed skin at 24 hours.[3] We took a closer look at how CR evaluates sunscreens and identified several potential flaws in their testing methods and scoring criteria, which might disadvantage mineral-based products.

CR rates sunscreens on the basis of 3 primary criteria: sun protection factor (SPF) as a measure of UVB and UVA protection and variation from the product-advertised and CR-determined SPF rating.[4] CR assesses SPF by applying sunscreen to 6 areas on participants' backs followed by submersion in water for either 40 or 80 minutes, depending on the water resistance claims of the manufacturer. The 6 spots are then exposed to different intensities of UVB and examined 1 day later for erythema. UVA protection is assessed by irradiating plastic plates covered with sunscreen and measuring the amount of UVA transmission. CR also assesses sensory factors, such as scent and skin feel, but does not specify how these or any of the primary criteria are weighted in determining their final score.

Mineral sunscreens typically have low advertised SPF ratings (eg, 30+) and thus might be disadvantaged compared with most chemical sunscreens with higher SPFs, although an SPF of 30 theoretically provides 97% UV protection. It is unclear to what extent submersion in water affects the SPF of various products. Preferably, as with FDA testing,[5] water resistance claims should be assessed separately from SPF with submersion testing. Consumers might be better served by CR having a separate category and ranking list for mineral- and chemical-based products and by reviewing similar numbers of mineral and chemical sunscreens. In addition, there are sunscreens that contain both mineral and chemical components, and it would be helpful to include some of these products in future reviews. It would also be helpful to have ratings for each of the criteria to allow consumers to assess tradeoffs between the

From the Huntsman Cancer Institute[a] and Department of Dermatology,[b] University of Utah Health Sciences Center, Salt Lake City; Department of Dermatology and Knight Cancer Institute, Oregon Health & Sciences University, Portland[c]; and Department of Oncological Sciences, University of Utah, Salt Lake City.[d]

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Correspondence to: Douglas Grossman, MD, PhD, Huntsman Cancer Institute, 2000 Circle of Hope, Salt Lake City, UT 84112. E-mail: doug.grossman@hci.utah.edu.

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different characteristics of a sunscreen product. Last, testing of other product claims that might influence consumer preference, such as being noncomedogenic, could be considered. We contacted CR but were not provided with more detailed information regarding their testing procedures and scoring methods; we do not know key information on the participants (eg, number, sex, age, skin types), the amount of sunscreen used or application process, and how subjective factors like scent and feel (which are often barriers to sunscreen use) were treated. We appreciate and value CR for providing ratings of sunscreen products to help consumers find a sunscreen product they enjoy using, which thereby increases sunscreen use in the US population. However, greater transparency and scientific rigor in sunscreen testing will enable consumers to make better informed choices.

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JAAD Game Changers: Oral tranexamic acid (TA) in the treatment of melasma: A retrospective analysis

Eden Lake, MD
Loyola University Medical Center

Capsule Summary	• Melasma remains a therapeutic challenge. • Retrospective analysis suggests that oral tranexamic acid might be a worthwhile adjunct in the treatment of refractory melasma. • A detailed history to exclude risk factors of thromboembolism, stroke, or heart disease is mandatory before initiating therapy.
How did this article change the practice of dermatology?	This study shows an 89.7% improvement in melasma with oral tranexamic acid, which is very high, considering the disease is often highly resistant to therapy. Clotting risk is elevated, and screening is mandatory before initiation.[1]

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Correspondence to: Eden Lake, MD, Dermatology Division, Loyola University Medical Center, 321 N La Grange Rd, La Grange Park, IL 60526-5622. E-mail: Eden.Lake@lumc.edu.

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