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Types of Shade Vary in Protection Just Like Sunscreens

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To the Editor

In their randomized clinical trial in a recent issue of *JAMA Dermatology*, Ou-Yang et al¹ concluded that shade from a beach umbrella provides less effective sun protection than high-SPF sunscreen. We urge care in interpretation of this study. The results cannot be generalized to conclude that shade is an ineffective means of sun protection.

“Shade” refers to structures that provide shelter from direct sunlight, and the term encompasses a broad range of objects such as trees, umbrellas, canopies, and indoor structures. These entities vary widely in their sun protection depending on the material, surface area, orientation to the sky, and their proximity to other protective structures. The amount of indirect ultraviolet (UV) light is proportional to the amount of visible sky from the shade, leading experts to recommend deep shade: trees near to other trees with dense foliage, buildings that block the sky, roofed areas, large shade sails or pergolas made of high-UV protective factor (UPF) material.² Additionally, many surfaces reflect UV radiation, adding to the total amount of UV exposure. Snow reflects up to 80% of the sun’s rays, sand reflects 15%, and grass, soil, and water reflect 10%.³ Due to these factors, an individual sitting under a solitary standard beach umbrella can be exposed to up to 84% of the total UV radiation despite feeling adequately covered.² For these reasons, it is best to seek deep shade.

In a retrospective cross-sectional study⁴ analyzing data from more than 3000 participants in the National Health and Nutrition Examination Survey, we found that participants who reported frequently sitting in the shade on a sunny day (16%) reported fewer sunburns and lower 25-hydroxy vitamin D levels (considered a proxy for sun exposure). These findings suggest that, as typically used by people in the United States, shade is an important form of sun protection.

Organizations focused on skin cancer prevention already recommend a combination of sun protection strategies including limiting time outside during peak sun hours, sitting in the

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shade, wearing long sleeves and pants, and applying sunscreen (SPF 30) to exposed skin to maximize protection.⁵ But not all types of shade are equally protective. Perhaps greater clarity in defining the shade as deep shade would be helpful to those choosing to sit under beach umbrellas.

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