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Widespread regular sunscreen application deemed not useful in the United States

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To the Editor:

The recent paper on preventing melanoma by increasing regular application of sunscreen by Olsen et al.[1] is an interesting academic study, but not fully relevant to the U.S. since the beneficial effect of sunscreen use on melanoma risk comes from one clinical trial in Australia which has the highest known melanoma rates due to very high UV doses in fair-skinned people who evolved at high northern latitudes. Many Americans have dark skin pigmentation, well adapted for American UV doses. In addition, though sporadic exposure increases melanoma risk,

regular occupational UV exposure can reduce it, for reasons likely including tanning, thickening of the stratum corneum, and increased vitamin D production.[2]

A major disadvantage of regular sunscreen application is that it blocks UVB-induced synthesis of vitamin D, and solar UVB is the primary source of vitamin D for most people. As noted in a major review, observational studies provide strong support for the association of higher 25-hydroxyvitamin D [25(OH)D] concentrations with better health outcomes including those for musculoskeletal health, immunity, autoimmunity, cardiovascular disease, cancer, fertility, pregnancy, dementia and mortality.[3] However, clinical trials generally fail to support these observations.[4] The reasons may include: 1 - that clinical trials to date were not optimally designed, being based on vitamin D dosing rather than on basal and achieved 25(OH)D concentrations;[4] 2- that non-vitamin D benefits from UVB exposure may exist, and significant inverse correlations between solar UVB doses and the risk of various types of disease are common in ecological studies such as for many types of cancer.[3]

Public health guidelines should aim to achieve maximal overall health benefits and melanoma is only one aspect of the adverse health effects of vitamin D inadequacy. On that basis, national guidelines on sunscreen usage should recommend its use to avoid sunburn, especially in children. All available sunscreens should block both UVA and UVB radiation effectively, and sunscreen users should, therefore, be advised to take vitamin D_3 supplements [ideally achieving serum 25(OH)D_3 concentrations >30 ng/ml] as recommended for those at risk of deficiency.

References

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