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Sunscreen May Not Be Perfect, But Don't Compare it to Margarine

By Elizabeth K. Hale, MD and Julie K. Karen, MD

An article in the January 2019 issue of Outside alleges that sun exposure guidelines are "unhealthy and unscientific... and quite possibly even racist." Drs. Hale and Karen respond.

As dermatologists who not only preach, but also practice avid sun protection on a daily basis, we read *Outside's* January 2019 article, "Is Sunscreen the New Margarine?," with tremendous interest and even some trepidation. While the article raises some interesting and legitimate questions about sun exposure and protection, it features unfounded and even preposterous claims that are at best misleading and at worst dangerous. In our role as physicians and sun protection advocates, we feel compelled to respond to some of the article's more inaccurate and inflammatory claims which are shown in bold, below.

Sunscreen is bad.

Sunscreen is flawed for sure, but it is not intrinsically evil. The industry has made strides in correcting what was disproportionate UVB and UVA protection. And yes, oxybenzone is harmful to coral reefs and may cause hormonal imbalances so is understandably being banned for future use in the US. But those of us who treat skin cancer feel fervently about the need to promote a healthy lifestyle that doesn't involve unprotected sun exposure and increasing one's skin cancer risk.

The article quotes Weller as asking, "How did we get through the Neolithic Era without sunscreen? Actually, perfectly well." To imply that our early ancestors never died from skin cancer is unfounded. The average life expectancy during the Neolithic Era for children who survived to age 15 was 28-33 years, and we know of no medical documents attesting to the absence of skin cancer in this population.

Vitamin D doesn't impart health benefits, the sun itself does.

“We have been epically misled,” the author claims of the correlation between low levels of vitamin D and the myriad health issues that accompany it, such as higher rates of cancer, diabetes, obesity, bone disease, heart attack, stroke, depression, and other diseases. Noting that vitamin D supplementation fails to affect the incidence of these maladies, he concludes that those with healthy vitamin D levels are not benefiting from the vitamin itself, but rather from exposure to “that big orange ball shining down from above,” aka the sun. Preposterous! Just because vitamin D supplementation has failed to eliminate the increased risk of the multiple aforementioned diseases doesn’t prove that sun exposure results in improved health. A far more intuitive conclusion is that a healthy lifestyle that accompanies relatively higher levels of vitamin D, including outdoor activity, exercise and accompanying mental health is why those who spend time outdoors have better health.

Sun exposure enhances nitric oxide levels.

In an effort to convince us of the benefits of sun exposure, the author cites Richard Weller’s research on nitric oxide (NO), an essential molecule whose primary function is vasodilation and thus, reduction in blood pressure. NO, a molecule with a short half-life (<1 sec) also enhances antioxidant activity. The article implies that the raising of NO levels and the associated decrease in blood pressure in those who are outside in the sun, is some beneficial result of unprotected sun exposure.

Well, it turns out that sun exposure is by no means the only or even most efficient way of elevating one’s NO levels. Not surprisingly, exercise also promotes NO production.

Here again, the positive health benefits enjoyed by "sun seekers" is quite possibly a reflection of their proclivity to exercise and live healthy lifestyles than to sun exposure itself.

Sun exposure lowers blood pressure.

In light of Weller’s research, the article wonders, “Could exposing skin to sunlight lower blood pressure?” Weller’s study involved 24 patients, each of whom showed immediate blood pressure reductions after one hour of exposure to light from a UV lamp. Even if sun exposure decreases blood pressure (if it’s through vasodilation, this is a short-term effect), these results do not prove that it will in turn decrease the incidence of death from heart disease and stroke. Medications can achieve far more significant reductions in blood pressure and still aren’t close to perfectly effective at reducing associated cardiovascular disease. Frequent moderate exercise is a far less dangerous way to lower blood pressure than unprotected sun exposure.

Recommending sun protection and avoidance is extreme.

The author compares dermatologists’ urging of patients to avoid the sun to an orthopedist recommending a ban on exercise. This is a false comparison. Orthopedic injuries are not deadly,

whereas melanoma can be. And there is a huge difference between “enjoying the sun safely” and “step[ping] out into the light.”

As dermatologists, we advocate a healthy lifestyle that includes outdoor activities that often take place in the sunlight. However, to decrease one's chance of developing skin cancer and premature skin aging, these activities should be performed with proper sun protection, including a broad-spectrum sunscreen of SPF 30 or higher.

Conclusion

The article in *Outside* seems deliberately inflammatory, subverting accepted ideas about sun exposure and sun protection for the sake of being controversial. While modern science is always shedding new light on accepted theories of health, and long-held conventional medical wisdom is frequently debunked by new discoveries, the evidence presented in this article does not rise to the necessary standard.

From characterizing dermatologists as holding the position that, “Don’t go outside, you might die,” to accusing the cosmetics industry of exploiting the African American population by unnecessarily marketing sunscreen to dark-skinned people, the article implies a nefarious plot to mislead the public about the sun. No such conspiracy exists. Dermatologists want their patients to be healthy, and we use the best information we have to recommend safe sun exposure measures. “Is Sunscreen the New Margarine?” carelessly and needlessly casts doubt on the need for sun protection, potentially endangering readers’ health in the process.

While we recommend being informed about the benefits of sunlight and the imperfection of sunscreen, the answer is not to discard what we know about the dangers of sun exposure and the importance of sun protection. It is well known that unprotected sun exposure leads to an increase in premature skin aging, skin hyperpigmentation, and increased risk of skin cancer, regardless of your skin type. Enjoy the *Outside*, but do it safely!