

More than 1 million cases of skin cancer occur each year in the United States, which makes skin cancer the most common type of cancer that Americans develop. Eighty percent are basal-cell carcinoma, 16 percent are squamous-cell carcinoma and 4 percent are melanomas. Based on advertising and information from a variety of sources - including health care professionals - many think that sunscreen use is protective against melanoma, which is stated to be directly linked to sun exposure.

We should appreciate that this is an emotional topic, especially for dermatologists. First, it is important to embrace the fact that melanomas can develop in areas of the body where you never receive sun exposure. Second, the epigenetics of chronic diseases are complicated, including melanoma,⁵ which is why it is inappropriate to blanket equate sun exposure with melanoma or elevated cholesterol with heart disease. Third, while painful sunburns are associated with malignant melanoma, lifetime sun exposure is associated with a decreased risk of malignant melanoma.

Seems like we have been misled a bit. It turns out that painful sunburns before the age of 20 and lifetime sun exposure are predominantly correlated to squamous-cell carcinoma and to a lesser degree with the most common type of skin cancer, basal-cell carcinoma. In other words, the most common type of skin cancer, basal-cell carcinoma, is least associated with sun exposure.

Sun Exposure and Skin Health: The Sun Is Not Bad

There is evidence that painful sunburns are clearly unhealthy; in fact, painful sunburns are associated with all forms of skin cancer. However, sun exposure that doesn't cause painful burns is associated with reduced expression of most cancers, including melanoma. Regarding the skin, it seems that sun-derived vitamin D protects the skin against the photo-oxidizing effects caused by the sun. In other words, moderate sun exposure is good for our skin and does not appear to cause skin cancer.

Simply stated, we need to avoid the extremist perspective that "sun is bad." The problem is the development of sunburns due to prolonged exposure, which means that we should be encouraged to pursue healthy sun exposure. In other words, it is OK to get a tan, but burning should be avoided. Instead, Americans have been scared out of the sun and are urged to venture out only if we are slathered in sunscreen, both of which are known to promote vitamin D deficiency.

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Does Diet Combat Sun Exposure?

Research continues to support the view that a healthy, anti-inflammatory diet is preventive against chronic diseases such as diabetes, heart disease and cancer. A commonly appreciated anti-inflammatory diet is the traditional Mediterranean diet rich in fish, vegetables and fruit. But what does this have to do with skin health? When it comes to skin, we have been somewhat conditioned to believe that the skin is nourished from the outside by creams and lotions. Rarely is nutrition for skin health a consideration, despite multiple papers published on this topic.

In short, the anti-inflammatory diet that is recommended for primary and secondary prevention of diabetes and heart disease is also known to reduce the expression of skin cancer. Compared with the United States, Australia and New Zealand, Mediterranean countries with high levels of

sunlight exposure, including Greece, Spain and Italy, have a substantially lower incidence of skin cancer. This may be due to the anti-inflammatory nature of the Mediterranean diet. It turns out that consumption of large amounts of vegetables and fruit and reduced consumption of pro-inflammatory omega-6 fatty acids, which is characteristic of the Mediterranean diet, is associated with reductions in the negative effects of sun damage, including oxidative, mutagenic, immunosuppressive, and inflammatory responses.

The Mediterranean diet also appears to modify the risk for developing cutaneous melanoma. According to the authors of a 2008 study, "After careful control for several sun exposure and pigmentary characteristics, we found a protective effect for weekly consumption of fish, shellfish, fish rich in n-3 fatty acids, daily tea drinking, a high consumption of vegetables, in particular carrots, cruciferous and leafy vegetables, and fruits, in particular citrus fruits."

A Rational Plan for Skin Health

It is extremely important to avoid excessive exposure that leads to sunburns, particularly when we are young. Otherwise, we should take a graded approach to sun exposure based on our skin pigmentation. For especially fair-skinned people, this may mean only 10 minutes a day without sunscreen. Because it is not normal for humans to spend multiple hours at the beach lying in the sun, after brief sun exposure, the use of sunscreen is required and a beach umbrella is recommended. End.