

Sunblocks and Sunscreens: Year-Round Advice for Parents

Claudia Anrig, DC

With an unusually hot summer winding down, many parents have been diligently covering their children with sunblocks and sunscreens for the past several months, believing it is best for their children. But how effective are these products at protecting them from the damaging rays of the sun? And just as important, how safe are the products themselves?

The History of Sun Protection Factor (SPF)

The concept of the "[Sun Protection Factor](#)" or "SPF," originally credited to Franz Greiter, supposedly helped determine which sunblock or sunscreen would be best for use based on a measurement of effectiveness when applied at an even rate of 2 milligrams per square centimeter of skin. Controversy still exists over the accuracy of this rating system and whether the rate of application truly represents actual use.^{1,2} With the more widespread use of sunscreens came the development of waterproof and sweatproof products, and eventually the claim that sunblocks and sunscreens are the ultimate protection against skin cancer.³



While many sunscreens now offer "broad-spectrum" protection against both UV-A and UV-B rays, that wasn't always the case. The original idea to block the UV-B rays that cause sunburn may have been a sound one, but as with most chemical options, it failed to consider the consequences. While sunscreens and sunblocks protected the skin from being burned by UV-B rays, they did not block UV-A rays, which penetrate the skin more deeply and actually cause melanoma.

Moreover, with all sunscreens, but particularly those with higher SPF, the sensation of being burned is stunted, typically resulting in a longer amount of sun exposure, which means more exposure to the harmful UV-A rays that cause melanoma. And to top it off, sunscreens and sunblocks do not allow the body to absorb the sun's rays and produce vitamin D.⁴

Chemical Concerns

Created to block out the UV-B ray or ultraviolet radiation that causes sunburn, sunscreens were originally designed solely to protect the skin from being burned utilizing different chemicals. [These chemicals include](#) oxybenzone, methyl anthranilate, titanium dioxide and zinc oxide, among others.⁵ Chemicals approved for use within the European Union and other parts of the world that have not been tested include but are not limited to: 4-methylbenzylidene camphor, Tinosorb M and S, Uvasorb HEB and isopenteny-4-methoxycinnamate.⁶

Adverse health effects have been associated with some synthetic compounds in sunscreen, and in 2007 the Centers for Disease Control and Prevention (CDC) reported a concern regarding oxybenzone (benzophenone-3). There were [two studies](#), the first of which "detected the chemicals in greater than 95% of the 2000 Americans tested,"⁷ while the second revealed that mothers with high levels of oxybenzone were more likely to give birth to underweight babies.⁸

Vitamin D and Sunshine

The most powerful and natural vitamin D is produced by the body when in direct sunlight, preferably the noonday sun, for about 10-20 minutes a day or until the skin begins to turn a very light pink. Despite the hype about the sun's rays being dangerous and cancer-causing, the fact is that we cannot be healthy without regulated and regular doses of natural direct sunlight.⁹

While vitamin D supplements do exist, it's important to differentiate between D₂ and D₃ forms. The weaker variant is called D₂. The most powerful form is D₃, and it is this variant that is produced by the body when exposed to sunlight and has been found to be a natural cancer preventative. In 2007, a study published in the *American Journal of Clinical Nutrition* found that vitamin D cut the risk of several types of cancer by as much as 60 percent, but it's important to understand they were using a natural supplement of vitamin D₃, which is available in stand-alone dietary supplements.¹⁰

Additionally, a 2009 U.K. study reported that "mothers given ten times the usual dose of vitamin D during pregnancy had their risk of premature birth reduced by half and had fewer small babies."⁸

Internationally recognized research scientist and vitamin D expert, Dr. William Grant, has said that

about 2,000-4,000 IU a day of vitamin D can help reduce cancer risk by up to 50 percent. He has also determined that up to 30 percent of all annual cancer deaths could be prevented with higher levels of vitamin D. That equates to 2 million less deaths worldwide and 200,000 less in the U.S. alone.¹¹

Calculate the Recommended Amount of Sun Exposure

Scientists at the Norwegian Institute for Air Research have devised [a calculator](#)¹² that will estimate how many minutes of exposure you need for your skin to produce 25 mcg (the equivalent of 1,000 International Units) of vitamin D. It is not written for U.S. cities, so you'll need to visit www.realestate3d.com/gps/latlong.htm to find the latitude and longitude of your city and enter the numbers manually. The easiest way may be to simply Google "altitude of [your town]." Remember to convert it to kilometers. One kilometer is about 3,300 feet.

If your latitude is 39 S, enter -39. If your longitude is 76 W, enter -76. You'll also need to enter the time of day you are going out in the sun, expressed as UTC ([Greenwich Mean Time](#)).¹³ The calculator uses a 24-hour clock, so hours from 1 p.m. to midnight are expressed as 13 to 24.

The calculator also wants to know the thickness of the ozone layer. I suggest just setting this one to medium. Be sure to click the radio button next to the entries. They are often not automatically selected when you fill in the values. Keep in mind that the exposure times given are considered enough to *maintain* healthy vitamin D status. If you are starting out with a vitamin D deficiency, you might need more.

Exposure Wisdom

In 2002, 50 percent of all cancers in the United States were skin cancers. That works out to approximately 1.1 million cases of diagnosed skin cancer in one year. Considering the prevalence of sunscreen "awareness campaigns" over the past 50 years, it's safe to assume that many of those 1.1 million people were wearing sunblock or sunscreen. So, it's equally safe to assume that sunscreen is *not* the ultimate protection against skin cancer.¹¹

Rather than having parents apply chemicals to their children, we should advocate limiting sun exposure to spans of 10-20 minutes at a time. When limits cannot be set, be sure parents and their children wear loose-fitting, light-colored clothing, as lighter-colored fabrics will reflect the sun's rays instead of absorbing them. Also, hats with a wide brim will protect both the face and the back of the neck. When swimming, always have children wear a thin, light-colored T-shirt over their swimsuits. This will protect their shoulders and chest from overexposure to the sun, as these are the areas most likely to burn when in water.

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SEPTEMBER 2011