

What's New in Sunscreens for the summer of 2010?

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The first sunscreens were developed to prevent severe sunburn for military personnel spending long hours under intense sunlight. Today, they are associated with a wide range of purposes, from reducing skin aging to decreasing the risk of skin cancer.

The Environmental Working Group's (EWG) fourth annual Sunscreen Guide gave low marks to current sunscreens available in the United States. The reason? A surge in exaggerated SPF claims; new disclosures about potentially hazardous ingredients; recent government data linking the common sunscreen ingredients to accelerated development of skin cancers; and finally, confusion over sunscreen effects on vitamin D levels. Let's discuss these issues in more detail to see if they are justified.

Data from an FDA study indicates that a form of vitamin A, retinyl palmitate, when applied to the skin in the presence of sunlight, may speed the development of skin tumors. The industry puts vitamin A in its formulations because it is an anti-oxidant that slows skin aging and potentially, sun damage.

The EWG does not mention, however, that topical vitamin A compounds are used in organ transplant patients to prevent and treat pre skin cancers. Furthermore, oral vitamin A derivatives are used to treat blood disorders.

Certainly the concern over Vitamin A induced skin cancer appears premature (the FDA's research was done in the laboratory, on animals, and utilized in high doses). What is certain is that Vitamin A and its derivatives can make individuals sensitive to the sun (thus the reason to put "retin A" on at night!). Indirectly this could lead to more "burning" causing cellular damage to the skin. It would make sense to avoid sunscreens with vitamin A derivatives in the future, although this will be difficult this summer as almost ½ of sunscreens on the market today contain this compound. Importantly, the American Academy of Dermatology sees no reason to be concerned over the use of vitamin A derivatives in sunscreens, and neither does the FDA as they have not made any formal recommendations about this compound.

The EWG has also flagged products with oxybenzone, a chemical used in sunscreens because it blocks both UVA and UVB. The chemical itself when

absorbed into the skin, can act as a photosensitizer. Because of this it is believed to be a likely photocarcinogen, similar to the vitamin A compound. Experts also raise concerns about its use for children because of its potential hormone disruption ability (leading to growth changes?). With more advancement in sunscreen development, there has been a decrease in the use of oxybenzone in sunscreen formulations. The chemical is still approved by the FDA and no formal suggestion by either the FDA or the American Academy of Dermatology has been made to avoid this compound.

What about the “SPF” term? High SPF products, which protect against sunburn, often provide very little protection against UVA radiation, the type of sunlight that does not burn, but is responsible for considerable skin damage. Products with high SPF ratings sell a false sense of security because most people using them stay out in the sun longer, and subject their skin to large amounts of UVA radiation. Additionally, few people use enough sunscreen to benefit from the UVB protection promised by the SPF label. Because sunscreen effectiveness drops off when under-applied, in everyday practice a product labeled with a high SPF actually performs much lower. Thus, a sunscreen with a minimal SPF of 15 is a requirement with UVB and UVA blocking capabilities well stated on the label.

Some of the “SPF” blame falls on the FDA, which has yet to finalize new regulations for sunscreens promised since 1978. These new requirements for the SPF rating system plan to address the lack of UVA protection in the current SPF rating scale. FDA officials estimate that the regulations may be issued very soon— but even then, they expect to give manufacturers at least a year, and possibly longer, to comply with the new rules. That means the first federally regulated sunscreens will not go on store shelves before the summer of 2012.

Whatever the reason, be it the chemical formulation or highly inaccurate SPF rating systems, it is apparent that sunscreens should not be used as the sole agent for protection against the sun (see our previous newsletter "Fashion in the Sun"). Furthermore, you should be looking for sunscreens with titanium or zinc oxide listed as an ingredient (this chemical blocks UVA light) with a SPF of at least 15- if not greater.

Adding to the sunscreen confusion is the fact that sunshine serves a critical function in the production of vitamin D and sunscreens may block this production. The main source of vitamin D in the body is the skin. Sunshine activates vitamin D from precursors that reside in the top layer of the skin. Vitamin D is enormously important to health – it strengthens bones and the immune system, reduces the risk of various cancers (including breast, colon, kidney, and ovarian cancers) and regulates at least 1,000 different genes governing virtually every tissue in the body. Additional sources of vitamin D include food and supplements.

The American Medical Association has recommended 10 minutes of direct sun (without sunscreen) several times a week, while the American Academy of Dermatology holds that “there is no scientifically validated, safe threshold level of UV exposure from the sun that allows for maximal vitamin D synthesis without increasing skin cancer risk.” Vitamin D supplements are the alternative. A recent study in the Dermatology literature suggested that it is possible to synthesize vitamin D for most of the year with casual exposures while at the same time obtaining only a small fraction of ultraviolet light to produce sunburn. There is variation by time of day, time of year and location (an individual in Miami requires less exposure than an individual in Boston). So what is the bottom line? It seems as if during the winter months, individuals living in the northeast should supplement their diet with Vitamin D. Whatever the combination of options is, diet vs. sunlight, one thing is for sure: tanning salons are not the answer.

Tanning salons provide a mixture of UVB and UVA with minimal governmental oversight to date. Tanning in a salon provides a nonprotective tan and is stimulated by direct, intense sunlight onto the skin-almost like placing your skin in an oven. Tanning salons are not a healthy solution to maintaining your vitamin D levels.

So what sunscreens should we use this summer? Below is a list of sunscreens backed by the American Skin Cancer Organization and our office. It is all inclusive and the reference we suggest you utilize to evaluate sunscreens. Attempting to avoid sunscreens with Vitamin A compounds and oxybenzene may be appropriate (but difficult) although the FDA has NOT formally recommended discontinuation of these compounds in sunscreens as of 2010.

We firmly recommend that you should utilize sunscreens but there is no question that good sun protection involves common sense, sun protective clothing, eyewear and lip balm in addition to frequent application.

Children sunscreens: <http://www.skincancer.org/seal/display.php?c=3>

Adult sunscreens: <http://www.skincancer.org/seal/display.php?c=1>

Clothing: <http://www.skincancer.org/seal/display.php?c=14>

Sunglasses: <http://www.skincancer.org/seal/display.php?c=14>

Lip balm: <http://www.skincancer.org/seal/display.php?c=9>

Specific suggestions: http://www.daopm.com/newslettersummer09_4.pdf

Here is a link to the EWG referenced: <http://www.ewg.org/2010sunscreens/>