

# skin|skin wise

## odd but... sunscreens may damage skin

**A** STUDY CONDUCTED AT THE University of California, Riverside found that the filters in sunscreens that help to protect skin against ultraviolet radiation can actually generate compounds that attack skin cells. The study was funded by the National Science Foundation and the National Institutes of Health and was published in *Free Radical Biology and Medicine* (Vol. 41, Issue 8, pp. 1205-

the penetration of harmful ingredients into the skin.

Led by Kerry M. Hanson, a senior research scientist at the university, the study found that three UV filters—octylmethoxycinnamate, benzophenone-3 and octocrylene—that are widely used in sunscreens generate naturally produced ROS. Additional ROS are generated only when the UV filters have permeated the skin, which

Several prominent researches believe that using products with a higher SPF rating can lead to more cases of melanoma.



1212). Researchers found that many ingredients in sunscreens penetrate the skin, which is not believed to be healthy. Sunscreens also generate harmful compounds called Reactive Oxygen Species (ROS), which are harmful compounds.

### Beware UV filters

When we apply sunscreens, UV filters contained in the formulas reduce the amount of UV radiation that can penetrate the skin. Over time, these filters invade the skin themselves, below the epidermis, leaving the body vulnerable to UV radiation. Many sunscreens also contain nano particles that can facilitate

is why frequent sunscreen reapplication is necessary. The study proposes that sunscreens that combine UV filters with antioxidants may well be an adequate solution, as antioxidants have been shown to reduce UV induced ROS levels in the skin.

Skin that is exposed to ultraviolet radiation is absorbed by molecules that can generate ROS, which can cause oxidative damage. In simple terms, ROS reacts with cell walls, lipid membranes, mitochondria and DNA, leading to skin damage and increasing the signs of extrinsic aging. The study is consistent with the finding of a 1999 study in which a British biochemist sug-



gested that the cocktail of chemicals involved in sunscreens could cause cell damage and lead to increased risk of cancer due to the creation of free radicals. Many cosmetic companies and sunscreen manufactures feel that these studies are confusing and inconclusive and send the wrong message.

### False sense of security

Numerous studies have been done on the topic of sunscreens and cancer over the past decade. While the conclusions of these studies vary, several prominent researchers believe that using products with a higher SPF rating can lead to a higher risk of melanoma.

In one widely quoted study on sunscreen use that dates back to the early 1990s, Cedric Garland, Doctor of Public Health and Frank Garland, M.D., believe that using higher SPF sunscreens encourages individuals to stay out in the sun longer due to a false sense of security, coupled with the fact that UVA rays penetrate into the body and may well have a depressing effect on the body's immune system.

Yet, another researcher, Martin Weinstocks found that when he ana-  
*continues*

Generate a  
6 Figure Income!  
with

Beautiful Image™  
Facial & Body Sculpting

The Lunch Time Facelift  
Advanced Technology for Skin Rejuvenation



Stimulate your business  
with Microcurrent!

Yield \$200,000 - Invest only \$164 per mo.

REVITALIZE your client base  
REJUVENATE your staff  
REPLENISH your bottom line

Keep your clients coming back  
month after month - week after week



[www.BeautifulimageLLC.com](http://www.BeautifulimageLLC.com)

For more information on the  
Microcurrent Cosmetic System:

Call 1-800-800-0838

[info@BeautifulimageLLC.com](mailto:info@BeautifulimageLLC.com)

Contrary to popular opinion,  
there is little difference  
between an SPF of 15 and 60.

lyzed 12 well-known studies of sunscreen use and cancer, he found mixed results, with four showing an increased risk, three showing a decreased risk and six that were inconclusive.

One of the largest studies on sunscreens and skin cancer conducted in Australia led researchers to conclude that while sun protection products do a better job of protecting against ultraviolet UVB and UVC rays, they do little to stop UVA rays, which may play a significant role in the formation of melanoma.

### More is not better

Contrary to popular opinion, there is little difference between an SPF of 15 and 60. In fact, a higher SPF rating may be worse. We also must remember that SPF ratings only measure the sun's ability to filter out UVB rays, not the more dangerous UVA rays. The federal government is hard at work revising the entire sunscreen rating system to help better inform us all.

What should we tell our clients about sunscreen use? It may be wise to use an SPF of 15 (which gives 90 percent UVB protection) versus 60 (only slightly more), as the higher rating may encourage the user to stay in the sun longer due to its false sense of security and increase the amount of chemicals that can both penetrate into the skin and exacerbate signs of aging and melanoma development.

### Antioxidant use

The use of sunscreens that contain physical and chemical blockers as well as antioxidants are the best choice. It may also be wise to apply an antioxidant cream that contains vitamins E and/or C on top of the sunscreen to help limit free radical formation and the resulting chemical damage.

We should reapply product at least every two hours, wear protective clothing (shirts, hats, sunglasses) and limit sun exposure between 10 a.m. and 2 p.m. Never stay in the sun long enough to get a burn. If you are prone to or have had skin cancer, it is imperative to use a topical, pharmaceutical grade skin cream or gel with active vitamin A and an antioxidant. ■

**Robert Trow**, along with his wife Carol, owns *DermaConcepts USA*, the eastern U.S. (excluding metro NYC) distributor for *Environ® Skin Care*. In the skin care field for more than 10 years Trow has authored multiple articles for trade publications.