by Rob and Carol Trow

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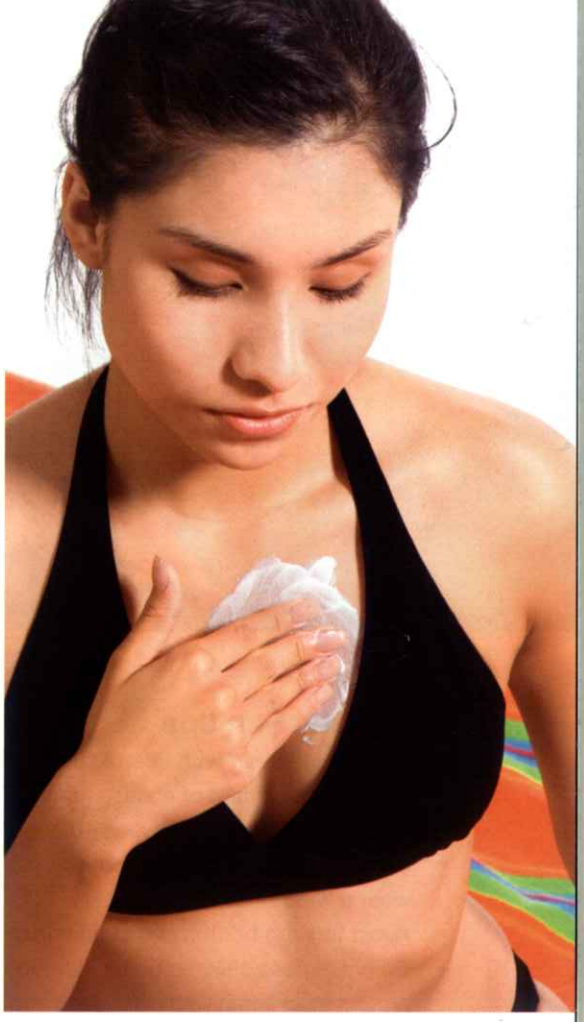

Sun block versus sunscreen

Sun block and sunscreen are the same, right? Wrong, says a report published in *Harvard Health Publications* from Harvard Medical School, entitled "Skin Care and Repair," by Kenneth A. Arndt M.D.

While these terms are often used interchangeably, the differences are real. Simply put, sun block physically blocks the sun's rays while sunscreen absorbs ultraviolet (UV) light to prevent the rays from reaching the skin.

Ultraviolet radiation that causes sun damage and skin aging is classified into three types: UVA, UVB and UVC. In "Skin Care and Repair" Arndt reported that only 10 percent of UVB rays reach the dermis but that 50 percent of UVA rays do. "The sunlight that reaches the earth contains about 10 times as much UVA as UVB," he wrote.

Rays reach deep into the skin

Since UVA rays have the longest wavelength they pass through the ozone layer easily, as they are not absorbed. UVAs then penetrate far deeper into the skin than UVBs, as longer wavelengths go deeper into the dermis. These contribute significantly to aging and sun damaged skin.

UVB rays are diminished and partially blocked, as they pass through our ozone layer and penetrate the epidermis, producing sunburn. According to the Harvard report, the more you have been sunburned, the higher the risk of developing skin cancer. As the ozone layer thins, these rays become much more potent and harmful.

UVCs have shorter wavelengths and normally do not penetrate the atmosphere. However, they have the highest energy level and can cause great damage to the skin. The thinning ozone layer may mean UVC rays will create serious health risks in the future.

> The skin needs a myriad of ingredients for protection, as each chemical can only absorb a narrow range of rays.

To sun block or to sunscreen

How sunscreens and sun block interact with ultraviolet rays is the key to skin health.

Sun blocks do what the term implies—they help prevent UV rays from reaching the skin. These physical blockers contain ingredients such as titanium dioxide, zinc oxide and talc.

Sunscreens, on the other hand, act as absorbers. Since sun damage begins one minute after exposure, you need a sunscreen with a myriad of ingredients for protection, as each chemical can only absorb a narrow range of rays. Commonly used chemicals are benzophenone, oxybenzone and avobenzone.

One of the main issues with sunscreens is that there is no accurate method of determining how effective a product is against UVA rays. The topic is of significant concern to the Food and Drug Administration, which is currently working on creating new labeling regulations and health advisory guidelines for the public as well as skin care professionals. Currently, sunscreens do not usually have a great capacity to protect the skin from harmful UVA rays.

Sunscreens must be applied 30 minutes before sun exposure to ensure efficacy. Since sun care products eventually loose their potency when exposed to the sun, you must reapply them regularly, as most products begin losing their efficacy after one and a half to two hours.

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Sun protection tips

- Use a sunscreen with chemical and physical blockers plus an antioxidant of no less than SPF 15.
- Avoid sun exposure between 10 a.m. and 3 p.m.
- Cover up with protective clothing and wear a wide brimmed hat.
- Avoid tanning booths and sun lamps.
- Do not expose children under 12 months to the sun and protect all children with sunscreen and proper clothing.
- Apply topical vitamin A and antioxidant skin care products daily.
- Treat sun damaged skin with professional treatments at your doctor's or skin care therapist's office.
- Consider using cosmetic bronzers or self tanners if you want a sun kissed look.
- Visit a dermatologist yearly for a full body screening.

Ingredients in sun blocks and sunscreens block different types of sun rays. Here is a partial list of sun protection product ingredients and the type of sun ray each blocks:

- Aminobenzoic acid blocks UVBs
- Avobenzone blocks UVAs
- Cinoxate blocks UVBs
- Dioxybenzone blocks UVAs and UVBs
- Homosalate blocks UVBs
- Menthyl anthranilate blocks UVAs
- Octocrylene blocks UVBs
- Octyl methoxycinnamate blocks UVBs
- Octisalate blocks UVBs
- Oxybenzone blocks UVAs and UVBs
- Padimate O blocks UVBs
- Phenylbenzimidazole sulfonic acid blocks UVBs
- Sulisobenzone blocks UVAs and UVBs
- Titanium dioxide blocks UVAs and UVBs, broad spectrum
- Trolamine salicylate blocks UVBs
- Zinc oxide blocks UVAs and UVBs, broad spectrum

A product's waterproof characteristic is limited, so reapply after going in the water. A tan, sunless tanner, dark skin or even the clouds are no protection from the sun.

Be sure to select a sun care product that has a broad spectrum and has both physical and chemical protection along with antioxidants to help fight free radicals. Do not be misled by high sun protection factor (SPF) ratings.

The SPF controversy continues

There has been great confusion about the meaning of SPF ratings—more is not necessarily better. An SPF of 15 protects against 93 percent of UVB rays while an SPF of 30 equates to 97 percent protection. An even higher SPF does not result in any material increase in protection and has the negative consequence of introducing more potentially harmful chemicals into your body. Recent studies in Australia found a significant correlation with higher sunscreen use and higher cancer rates, partly a result of a false sense of protection, leading people to stay out in the sun longer and reapply less product.

Novelty reigns, with caution

There are several new ingredients on the market that show great promise including a cocktail of ecamsule, avobenzone and octocrylene, which provide longer protection when out in the sun. But, they are not foolproof. All the safe sun cautions still apply.

We can expect a rash of new, state of the art sun care ingredients to be brought to market over the coming few years, as they are now in various stages of testing and regulatory review. But beware: there is no evidence, according to the U.S. Environmental Protection Agency, that any sun care product can protect you from malignant melanoma. There is no such thing as a safe tan, either from the sun or potentially hazardous tanning beds.

Enjoy the sun and all the activities associated with it while applying safe sun practices that help keep skin healthy. It is still possible to have fun in the sun. ■

***Rob and Carol Trow**, his wife, own Derma-Concepts USA, the eastern U.S. (excluding metro NYC) distributors for Environ® Skin Care. Rob's background includes two decades in higher education as a faculty member, administrator and business consultant. He has been in the skin care field for over ten years. Prior to her involvement with Environ® Skin Care, Carol served as an RN, director of marketing for Professional Service Business Development and operated her own consulting firm focusing on practice development.*