

Sunscreens and Sun Protection**June 2011**

Protecting children from ultraviolet (UV) radiation and sunburn reduces the risk of skin damage and skin cancer later in life. Sunscreens represent only one component of a total sun protection program. Two strategies exist to protect children against solar radiation: sunscreens and sun protective clothing.

Why use sunscreen?

Sunlight consists of two types of harmful rays: ultraviolet A (UVA) rays and ultraviolet B (UVB) rays. The United States Department of Health and Human Services has declared ultraviolet (UV) radiation from the sun and artificial sources as a known carcinogen (cancer-causing agent). UVA rays can cause premature aging of the skin and can also interfere with the immune system. UVB rays are the primary cause of sunburn. As the American Academy of Dermatology says, "UVA rays are the aging rays and UVB rays are the burning rays." Excessive exposure to either UVA or UVB can cause skin cancer. Sun protection can help prevent premature aging and skin cancer.

Are the ingredients in sunscreens safe?

To ensure broad-spectrum UV coverage, look for ingredients such zinc and titanium, which the Environmental Working Group's site (Comseticsdatabase.com) calls the best active ingredients, followed by avobenzone at 3%. They recommend against oxybenzone, retinyl palmitate, aerosol spray and sun powder.

Do currently available sunscreens adequately protect from UV light?

Sunscreens are rated by SPF (Sun Protection Factor). SPF measures the amount of time it takes for sun-exposed skin to redden. Usually an SPF of 15 or 30 is sufficient for children provided they apply generous amounts of lotion (often people apply less than half the necessary amount for adequate protection!) and re-apply it frequently and after swimming.

UV radiation consists of both UVA and UVB rays, but SPF only measures the protection against UVB, which causes sunburns. It was once thought that only UVB was of concern, but we now know that both types of UV rays may cause skin damage and skin cancer. To protect your children against both UVA and UVB, look for sunscreens that say "broad- spectrum."

With the new FDA regulations, only sunscreens which pass the FDA broad-spectrum test will be allowed to be labeled as "Broad-Spectrum." The American Academy of Dermatology suggests looking for the following ingredients to ensure broad-spectrum UV coverage:

avobenzone, cinoxate, ecamsule, menthyl anthranilate, octyl methoxycinnamate, octyl salicylate, oxybenzone, sulisobenzene, titanium dioxide, and zinc oxide.

To adequately protect skin from UV light, sunscreen should be applied directly to dry skin 15-30 minutes before sun exposure and reapplied every two hours or after swimming or perspiring heavily. Water-resistant sunscreens lose their effectiveness after 40 or 80 minutes, which new sunscreen bottles will be mandated to indicate by 2012.

What about sun-protective clothing?

Limiting sun exposure and wearing protective clothing may be the most important actions to take for effective sun protection. In general, clothing made of tightly-woven fabric best protects skin from the sun. A crude test is to hold the piece of clothing up to visible light and observe the light penetration. Sun protective clothes may also be treated with UV-absorbing chemicals, such as titanium dioxide. Sun protective clothing is rated according to its UPF (Ultraviolet Protection Factor) with UPF of 15 or higher considered sun-protective. Protection drops significantly, however, when the fabric becomes wet, loose or transparent to light.

Recommendations for Sun Protection:

- Generously apply broad-spectrum, water-resistant sunscreen with an SPF of 15 or higher 30 minutes prior to sun exposure; dermatologists strongly recommend using a broad-spectrum water resistant sunscreen with an SPF of **30** or greater year round.
- Reapply sunscreen at least every 2 hours (even if it is water-resistant)
- Wear protective clothing—long-sleeved shirt, pants, sunglasses, a wide-brimmed hat
- Limit sun exposure between 10AM and 2PM, when the sun's rays are the most intense
- Remember that UVA radiation penetrates cloud cover and glass windows
- Apply a minimal amount of sunscreen with at least an SPF of 15 to small areas on infants if shade or adequate clothing is not available

Where can I get more information?

For more information, contact the Mount Sinai Pediatric Environmental Health Specialty Unit, Mount Sinai Medical Center, 1 Gustave L. Levy Place, Box 1057, New York, NY 10029.

Phone:1-866-265-6201. Fax: 212-996-0407. Visit us online at

<http://www.mssm.edu/cpm/pehsu/>.

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