



Pearl W. Yee, M.D. Inc.

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Sunscreen and UV Skin Damage

Skin Protection:

Photo-protection includes sun avoidance during peak hours (10am to 2pm), wearing sun-protective clothing and the correct use of appropriate sunscreens. Sunscreen is recommended for all individuals of every skin type.

Proper Sunscreen Application:

Everyone should apply sunscreen daily, liberally, and repeatedly, on all sun exposed areas after 6 months of age. You need to use 1 ounce or 30cc of sunscreen for your entire body. This equates to 1 teaspoon for the face and neck, each arm, and 2 teaspoons for each leg. Since most individuals under-use sunscreen, we recommend using SPF 30. You should apply 15-30mins before sun exposure to allow time for a protective film to form. Reapply sunscreen every 2 hours when outside (this means keeping a tube of cream, powder, or spray in your bag) and after any water exposure.

UV Damage and Risk:

The sun's UV (ultraviolet wavelengths) can cause significant skin damage. UVB is responsible for sunburn, inflammation, hyperpigmentation and increases skin cancer. UVA1 and UVA2 are major contributors to skin aging, pigment darkening and may be involved in skin carcinogenesis.

SPF (sun Protective factor) Definitions:

It is best to use SPF 30 every day. If you follow the guidelines for proper sunscreen application then using SPF 15 may be enough protection. The problem is that most individuals are not rigorous about sun protection.

- The FDA recommends that SPF scores be capped at 50. SPF scores can be read as >50, higher numbers are not clinically significant.
- The amount of UV absorbed by SPF 15 is 93%, SPF 30 is 97% and SPF 50 is 98%
- "Water resistant" or "very water resistant" means SPF is maintained for 40 minutes or 80 minutes of activity in the water. The FDA no longer allows water-proof on labeling.
- Light skinned individuals should use \geq SPF 30 daily when outdoors and if inclined to use SPF 50, use it for your face or any skin that is being treated for medical or aesthetic reasons.

Formulations:

Sunscreen ingredients are oil-soluble, the higher the SPF the stickier the product. Oil in water emulsions include lotions (for large areas) and creams (for smaller areas). Ethanol and oil combinations are used in sprays, liquids and gels. They are fast drying but may be irritating. Sprays and gels are preferred for patients with acne or perform sports. Ethanol may leave an uneven protection layer but is preferred if the convenience of a spray increases usage. What to use is a personal choice. Read the components to insure UVA and UVB protection. Patients have shared positive experiences with: Revision skin care, Shishedo, SkinCeuticals, Khiel's, Obagi, Jan Marini, and private labeled products for especially face coverage.

Sunscreens are Classified as:

- Organic (chemical, absorbing) or inorganic (physical, blocking)
- most screens use a combination of products for protection. Cinnamates (like octinoxate) and salicylates specially absorb UVB. Benzophenones (oxybenzone: most commonly used, <0.1%

sensitized allergy) protect against UVB and UVA2. Avobenzone protects against UVA1 that needs to be stabilized other UVB absorbers.

- Most products combine several absorbers to give a broad spectrum of protection. New organic absorbers are available in Europe.
- Inorganic filters reflect all 3 types of UV light or absorb them. Inorganic sunscreens are stable and have a low irritation potential. Older inorganics have larger particles and turn white color. The newer titanium dioxide or zinc oxide particles are more transparent.

Photo-protective Clothing:

UPF (UV protective factor) is how effective fabric blocks UV radiation. UPF 15-24 gives good protection, 40-50 means excellent protection. UPF is improved with the tightness of the weave, dark colors and certain yarn composition.