

# Making Sense of Sunscreen Products

Medical Author: [Melissa Conrad Stöppler, MD](#)

Medical Editor: [Barbara K. Hecht, PhD](#)

Most people are understandably confused when it comes to [choosing a sunscreen](#) because of the baffling array of available choices. Common questions about sunscreens include

- How high should the SPF be?
- Should it block UVA or UVB?
- Does it matter whether it is a gel, cream, or spray?
- Should it be water-resistant or waterproof?

SPF stands for [sun protection factor](#). The SPF numbers on a product can range from as low as 2 to as high as 60. These numbers refer to the product's ability to screen or block out the sun's burning rays. The SPF rating is calculated by comparing the amount of time needed to produce [sunburn](#) on protected skin to the amount of time needed to cause a sunburn on unprotected skin. The higher the SPF, the greater the sun protection.

The sun's rays contain different wavelengths of ultraviolet (UV) light. The two types of UV rays that pass through the earth's atmosphere and cause damage to the skin are UVB and UVA. UVB rays are the primary cause of sunburn and affects the outer layer of skin.

The strength of UVB radiation depends upon the time of day, season of the year, and geographic location. UVB rays are most intense from 10 am to 2 pm and are stronger in summer, at higher altitudes, and closer to the equator.

Unlike UVB rays, which do not penetrate glass, UVA rays can travel through window glass and damage the deeper layers of the skin. Both UVA and UVB light contribute to age-related changes in the skin such as [wrinkles](#), [freckles](#), age spots, and prominent blood vessels. Both UVA and UVB exposure raise the risk of [skin cancer](#).

[Sunscreens](#) can be broadly classified into two categories: chemical sunscreens and physical sunscreens. Chemical sunscreens absorb [UV radiation](#) while physical sunscreens act by physically blocking it. Chemical sunscreens can be UVA or UVB absorbers. Many sunscreens have a combination of ingredients and may contain both physical and chemical sunscreens.

Physical sunscreens are good blockers of both UVA and UVB radiation. The two most common physical blockers of UV radiation are titanium dioxide and zinc oxide. Examples of chemical sunscreens include:

- **PABA (para-aminobenzoic acid):** *Rarely found in modern preparations*, PABA was an early chemical sunscreen that often induced sensitivity reactions.
- **PABA esters (glyceryl, padimate A and padimate O):** These newer preparations have fewer [side effects](#) than the original PABA.
- **Salicylates (homosalate, octyl salicylate)**
- **Cinnamates (cinoxate, octyl methoxycinnamate or octocrylene):** Octocrylene is a cinnamate with both UVA and UVB absorbing properties.

- **Benzophenones:** These can absorb both UVA and UVB rays.

In July 2006, the U.S. FDA approved an OTC sunscreen containing an ingredient known as ecamsule (Mexoryl). Ecamsule is a potent UVA blocking compound that has been sold in sunscreen products in Canada and Europe since 1993.

Since both UVA and UVB radiation can be damaging, an ideal sunscreen provides protection from both types of radiation. The SPF system measures only the degree of protection from UVB rays. No rating system exists that measures the degree of protection from UVA exposure.

Most experts recommend reading the list of ingredients in a sunscreen to see if it has **broad-spectrum (UVA and UVB) coverage**. Many products labeled as "broad spectrum" or "UVA blockers" do not adequately block UVA rays. A good broad-spectrum sunscreen should contain avobenzene, ecamsule (Mexoryl), titanium dioxide, or zinc oxide for significant UVA protection.

Whether you choose a lotion, stick, gel, or cream sunscreen depends largely on your skin type and personal preference. Oil-free gels are good solutions for facial skin prone to breakouts, and sprays may make application to the back and shoulders easier.

"Water-resistant" sunscreens should retain their protective ability for at least 40 minutes in water. Those labeled "waterproof" should protect the skin for 80 minutes in water.

The American Academy of Dermatology recommends using a broad-spectrum sunscreen with an SPF of at least 15 on a daily basis throughout the year. An important note is that no sunscreen can be effective unless it is properly and frequently applied.

For more, please read the [Sun Protection and Sunscreens](#), and [Sunburn and Sun-Sensitizing Drugs](#) articles.

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