

SPF, UVA, UVB: What protection do I need?

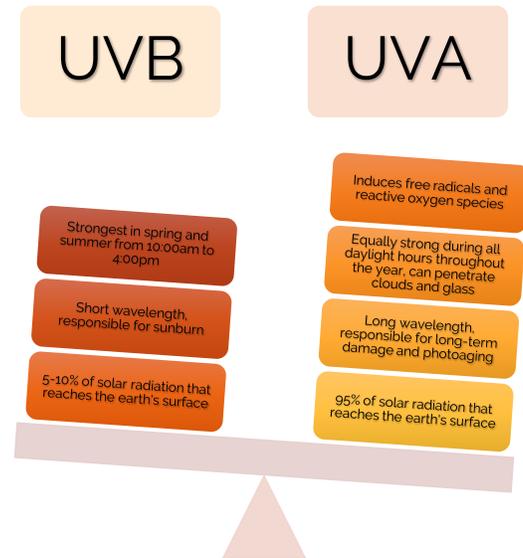
Though we might not notice it, our bodies feel the effects of UV radiation year-round. Long-wave ultraviolet A rays (UVA) and short-wave ultraviolet B rays (UVB) penetrate the ozone layer and induce a variety of nasty reactions like sunburns and premature skin aging, and they also put us at a higher risk for diseases like skin cancer.

In recent years, there has been a [mound of research](#) on the impact of UV rays, but all of these developments have left consumers and skin care brands to decipher complicated language and labeling systems. The first step toward providing your customers with healthy, young-looking skin is to understand the dangers of both UVA and UVB, so that you can choose products with the most effective sunscreen actives and the most compelling skin care claims.

UVA vs. UVB

5-10% of the solar radiation that reaches the earth is in the form of short-wave UVB rays. UVB rays are responsible for sunburns, and for a long time they were consumers' primary concern. However, despite the prominent and painful showing of a sunburn, the damage of short-wave UVB rays remains largely on the surface of the skin, because UVB is unable to penetrate deeper layers. In the United States, UVB rays are most powerful in the spring and summer and between 10:00am and 4:00pm.

Long-wave UVA rays account for [up to 95%](#) of the ultraviolet radiation that reaches the earth's surface. UVA rays are equally intense during all daylight hours throughout the year and can penetrate glass. Because of their long wavelength, UVA rays can reach deep layers of the skin to cause a delayed negative impact on the body. UVA rays [induce free radicals and reactive oxygen species \(ROS\)](#), which cause [oxidative stress](#) and wreak havoc on the skin's elastin and collagen fibers, DNA proteins, and membranes. Over time, this damage results in photoaging, or the premature aging of the skin.



UVA rays are a hidden threat because they do not leave behind the noticeable sunburn that UVB rays do. Plus, since UVA rays can penetrate clouds and windows, we do not need to spend time outdoors in the sun to experience their harmful effects. Because of the extensive risks associated with UVA radiation, consumers are quickly learning the importance of guarding against it.

Clinical Signs of Photoaging¹

Loss of collagen and elastin

Thinning skin

Spots, blotchiness, and irregular pigmentation

Wrinkles and fine lines

Dry leathery skin, roughness

Redness (visible micro-vessels)

Abnormal differentiation

The importance of broad-spectrum protection

Despite the risks of ultraviolet radiation, leading scientists say that you should not avoid the sun completely. Sun exposure plays a key role in maintaining everyday health and balance, including the body's synthesis of vitamin D. [Studies show](#) that the regular application of a high-quality, broad-spectrum

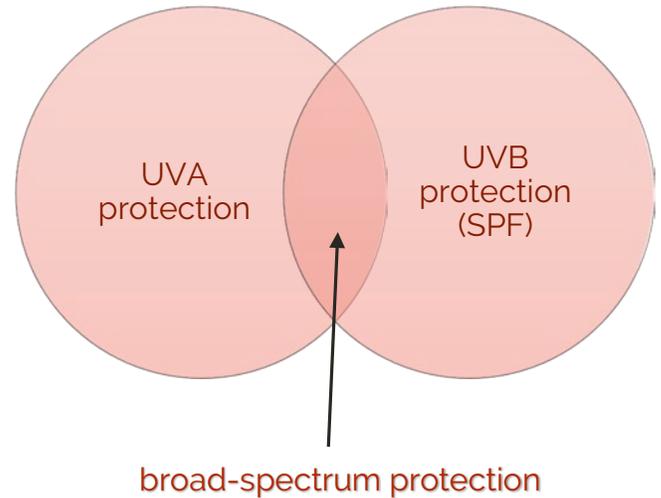
Dermatologists recommend the regular application of a broad-spectrum sunscreen with SPF 30 or higher.

sun protection product can prevent UV damage and the resultant oxidative stress

that leads to premature skin aging and other negative health effects.

To protect against UVB radiation, a cosmetic or skin care product must have Sun Protection Factor (SPF) claims. However, SPF does not shield UVA, and therefore does not protect the skin from 95% of UV radiation. There is not yet a standard measurement for UVA, so the FDA has coined the term "broad-

spectrum" to indicate that a product contains both UVA and UVB filters. In the United States, products with a broad-spectrum label will provide UVA protection that is proportional to the UVB protection indicated by the SPF number. To protect against both UVA and UVB radiation, [dermatologists recommend](#) the regular application of a broad-spectrum sunscreen with SPF 30 or higher.



The Solésence solution

Spending time in the sun unprotected can cause the skin to look wrinkled, leathery, and damaged, but that doesn't mean you have to spend all your time indoors. Scientific advancements have allowed us to reach new heights in environmental protection. Solésence uses cutting-edge research to create skin care products with top-performing mineral actives that provide superior broad-spectrum protection to guard against UVA and UVB rays. Our products utilize patented [Free Radical Quenching technology](#) to prevent premature aging and [antioxidant boosting mechanisms](#) to enhance the efficacy of the skin's natural antioxidant system for improved health and beauty. Each formulation is carefully crafted to ensure optimal protection and satisfaction.

To learn more about Solésence and our products, visit www.solesence.com.

¹ Friedman, O. (2005). Changes associated with the aging face. *Facial Plastic Surgery Clinics of North America*, 13(3), 371-380. doi: 10.1016/j.fsc.2005.04.004