



Sun Exposure

While some exposure to sunlight can be enjoyable and healthful, too much can be dangerous. Ultraviolet radiation (UV) comes naturally from the sun. UV is divided into three different categories based on wavelength. Wavelength is the distance between two successive peaks of a wave. UV wavelengths are measured in nanometers (nm) or one billionth of a meter. The shorter the wavelength is, the higher the energy.

- **UVA wavelengths** (315nm) are only slightly affected by ozone levels. Most UVA radiation is able to reach Earth's surface and can contribute to sunburn, skin aging, eye damage, and can suppress your immune system.
- **UVB wavelengths** (280nm) are strongly affected by ozone levels. Decreases in stratospheric ozone mean that more UVB radiation can reach Earth's surface, causing sunburns, snow blindness, immune system suppression, and a variety of skin problems including skin cancer and premature aging.
- **UVC wavelengths** (180nm) are very strongly affected by ozone levels. Virtually all UVC radiation is absorbed by ozone, water vapor, oxygen and carbon dioxide before reaching Earth's surface.

Therefore, the UV radiation reaching Earth's surface is largely composed of UVA with some UVB. Almost half the daytime total UV radiation is received between the hours of 10 a.m. and 4 p.m. Even on a cloudy day, you can still get sunburned because of UV radiation.

One in five Americans develops skin cancer, and one person dies from this disease every hour. The incidence of melanoma, the most serious type of skin cancer, is increasing faster than most other forms of cancer. Children are of particular concern since most of the average person's lifetime sun exposure occurs before the age of 18. There are simple protective measures that you can take to limit exposure to UV rays.

Who is protecting you

U.S. Environmental Protection Agency (EPA)

EPA sponsors the SunWise program, which teaches the public how to protect themselves from overexposure to the sun. Through the use of classroom-based, school-based, and community-based components, SunWise seeks to develop sustained sun-safe behaviors in schoolchildren.

National Oceanic and Atmospheric Administration (NOAA)

EPA worked with the NOAA's National Weather Service to develop the UV Index, which predicts the next day's ultraviolet radiation levels on a 1-11+ scale, helping people determine appropriate sun-protective behaviors.

World Health Organization

The World Health Organization revised guidelines for reporting the UV Index. The United States and Canada both adopted these guidelines and applied them to their current UV Indexes.

U.S. National Institutes of Health (NIH)

The National Cancer Institute provides prevention, screening, and treatment information for skin cancer. Together with the EPA, and the Centers for Disease Control and Prevention, the NIH researches methods to protect against the sun's harmful rays, and provides helpful information to the public.

U.S. Food and Drug Administration (FDA)

The FDA establishes rules that govern the makers of sunscreens, particularly product labeling and advertising. The FDA ensures that the Sun Protection Factor (SPF) for sunscreen is clearly written on its label, and that consumers clearly understand what SPF means.

What you can do to protect yourself

- **Time in the Midday Sun.** The sun's rays are strongest between 10 a.m. and 4 p.m., so try to avoid overexposure to the sun during those hours when possible, even in winter and especially at higher altitudes.
- **Seek Shade:** Shade is a good source of protection, but keep in mind that shade structures (e.g., trees, umbrellas, canopies) do not offer complete sun protection.
- **Wear a Hat:** Wide brimmed hats offer good sun protection to areas particularly prone to overexposure to the sun (i.e., eyes, ears, faces, and necks).
- **Cover Up:** Wear tightly woven, loose-fitting, and full-length clothing.
- **Wear Sunglasses that Block 99-100% of UV Radiation:** Sunglasses that provide 99-100% UVA and UVB protection greatly reduce sun exposure that can lead to cataracts and other eye damage.
- **Always Use Sunscreen:** Apply a broad spectrum sunscreen with a Sun Protection Factor (SPF) of 15 or higher liberally on exposed skin. Reapply every 2 hours, or after working, swimming, playing, or exercising outdoors.
- **Watch the UV Index:** The UV Index provides important information to help people plan outdoor activities in ways that prevent overexposure to the sun.

Resources

You can explore this radiation source further through the resources at the following URL:

<http://www.epa.gov/radtown/sun-exposure.html#resources>

We provide these resources on-line rather than here so we can keep the links up-to-date.