

# Sun Exposure Safety Facts

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## Frequently Asked Questions

**Q: *Under what types of weather conditions do people need to worry about sun exposure?***

**A:** Any time the sun's ultraviolet (UV) rays are able to reach the earth, people need to worry about excessive sun exposure. Such UV rays, of course, are present on bright and sunny days. UV rays also actually can penetrate through cloud and haze cover, however, making cloudy and overcast days dangerous as well. Moreover, UV rays reflect off water, cement, sand, and snow. As a result, UV rays can cause skin damage even in the winter when there is snow on the ground.

Relatively speaking, the hours between 10 a.m. and 4 p.m. during daylight savings time (9 a.m. - 3 p.m. during standard time) are the most hazardous for UV exposure in the continental United States. UV radiation also is the greatest during the late spring and early summer in North America. *Protection from UV rays, nonetheless, is important all year round, not just during the summer or at the beach.*

## UV Rays

**Q: *What exactly are “ultraviolet rays?”***

**A:** The ultraviolet (UV) portion of sunlight is an invisible form of radiation that can penetrate and change the structure of skin cells. Exposure to UV rays, moreover, has been associated with the development of serious diseases. In fact, UV exposure appears to be the most important environmental factor in the development of skin cancer. UV rays also have been found to be associated with various forms of eye damage, such as cataracts.

More specifically, there are three types of UV rays: ultraviolet A (UVA), ultraviolet B (UVB), and ultraviolet C (UVC). UVA is the most abundant source of solar radiation at the earth's surface and penetrates beyond the top layer of human skin. Scientists now believe that UVA radiation can cause damage to connective tissue and increase a person's risk of developing skin cancer. UVB rays are less abundant at the earth's surface than UVA because a significant portion of UVB is absorbed by the ozone layer. UVB rays penetrate less deeply into the skin than do UVA rays, but, nonetheless, also can be damaging. Lastly, UVC radiation is extremely hazardous to skin, but it is completely absorbed by the stratospheric ozone layer and does not reach the surface of the earth.

**Q: How can people protect themselves from the sun's UV rays?**

A: There are a number of ways you can protect yourself:

When possible, avoid outdoor activities during midday, when the sun's rays are strongest. This usually means the hours between 10 a.m. and 4 p.m.

As appropriate, wear protective clothing, such as a wide-brimmed hat, long-sleeved shirt, and long pants.

Wear sunglasses that provide 100% UV ray protection.

Always wear a broad-spectrum (protection against both UVA and UVB) sunscreen and lip screen *with at least SPF 15*. Remember to reapply as indicated by the manufacturer's directions.

**Q: What can excessive exposure to these UV rays do to one's skin?**

A: Although getting some sun exposure can yield a few positive benefits, excessive and unprotected exposure to the sun can result in premature aging and undesirable changes in skin texture. Such exposure also has been associated with various types of skin cancer, including one of the most serious and deadly forms of such cancer---a form known as *melanoma*.

Tanning and Burning

**Q: What does a suntan indicate? Why does the skin tan when exposed to the sun?**

A: Although some people believe otherwise, a suntan is *not* an indicator of good health. In fact, scientists say that the sun exposure one gets while tanning actually can cause damage to the skin. Some physicians consider tanning a response to injury because it appears after the sun's UV rays have killed some cells on contact and damaged others. The penetration of those UV rays to the skin's inner layer is what results in the production of more melanin. That melanin eventually moves toward the outer layers of the skin and becomes visible as a tan.

**Q: Not everyone burns or tans in the same manner. Are there ways for classifying different skin types?**

A: Whether individuals burn or tan depends on a number of factors, including their skin type, the time of year, and the amount of sun exposure they have received recently. The skin's susceptibility to burning can be classified on a five-point scale as outlined in the following table:

## Skin Type and Tanning and Sun burning History

I – Always burns, never tans, sensitive to sun exposure

II – Burns easily, tans minimally

III – Burns moderately, tans gradually to light brown

IV – Burns minimally, always tans well to moderately brown

V – Rarely burns, tans profusely to dark

VI – Never burns, deeply pigmented, least sensitive

Though everyone is at risk for damage as a result of excessive sun exposure, people with skin types I and II are at the highest risk.

### UV Index

**Q: *What is the UV Index?***

**A:** The UV Index, developed by the National Weather Service and the Environmental Protection Agency, provides a forecast of the expected risk of overexposure to UV from the sun and indicates the degree of caution you should take when working, playing, or exercising outdoors. The UV Index predicts exposure levels on a 0-10+ scale, where 0 indicates a low risk of overexposure and 10+ means a very high risk of overexposure. Calculated on a next-day basis for dozens of cities across the U.S. by the National Weather Service, the UV Index takes into account clouds and other local conditions that affect the amount of UV radiation reaching the ground.

Note that the amounts of danger posed by the various basic categories of the index are specifically calculated for a person with Type II skin. For a person with type II skin, for example, an Index value of a 5 or a 6 represents a moderate possibility of UV exposure.

For additional information, contact your local Outreach and Extension Center or the MU Extension Rural Safety and Health Program, 1.800.995.8503.

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