

Health Effects of Overexposure to the Sun

Ozone layer depletion decreases our atmosphere's natural protection from the sun's harmful ultraviolet (UV) rays. This fact sheet provides a quick overview of the major health problems linked to overexposure to UV radiation:

- Skin cancer (melanoma and non-melanoma)
- Premature aging of the skin and other skin problems
- Cataracts and other eye damage
- Immune system suppression

Understanding these risks and taking a few sensible precautions will help you enjoy the sun while lowering your chances of sun-related health problems.

Did You Know?

Skin cancer is the most common form of cancer in the United States.

Ultraviolet (UV) radiation from the sun and from tanning beds is classified as a human carcinogen by the U.S. Department of Health and Human Services and the World Health Organization.

Skin Cancer

Each year, more new cases of skin cancer are diagnosed in the U.S. than new cases of breast, prostate, lung, and colon cancer combined. One in five Americans will develop skin cancer in their lifetime. One American dies from skin cancer every hour. Unprotected exposure to UV radiation is the most preventable risk factor for skin cancer.

Melanoma

Melanoma, the most serious form of skin cancer, is now one of the most common cancers among adolescents and young adults ages 15-29. While melanoma accounts for about three percent of skin cancer cases, it causes more than 75 percent of skin cancer deaths. UV exposure and sunburns, particularly during childhood, are risk factors for the disease. Not all melanomas are exclusively sun-related—other possible influences include genetic factors and immune system deficiencies.

Non-melanoma Skin Cancers

Non-melanoma skin cancers are less deadly than melanomas. Nevertheless, they can spread if left untreated, causing disfigurement and more serious health problems. There are two primary types of non-melanoma skin cancers: basal cell and squamous cell carcinomas. If caught and treated early, these two cancers are rarely fatal. Between 40 and 50 percent of Americans who live to age 65 will have one of these types of skin cancer at least once.

- **Basal Cell Carcinomas** are the most common type of skin cancer tumors. They usually appear as small, fleshy bumps or nodules on the head and neck, but can occur on other skin areas. Basal cell carcinoma grows slowly, and it rarely spreads to other parts of the body. It can, however, penetrate to the bone and cause considerable damage.

- **Squamous Cell Carcinomas** are tumors that may appear as nodules or as red, scaly patches. This cancer can develop into large masses, and unlike basal cell carcinoma, it can spread to other parts of the body.

Other Skin Damage

Other UV-related skin disorders include actinic keratoses and premature aging of the skin. Actinic keratoses are skin growths that occur on body areas exposed to the sun. The face, hands, forearms, and the “V” of the neck are especially susceptible to this type of lesion. Although premalignant, actinic keratoses are a risk factor for squamous cell carcinoma. Look for raised, reddish, rough-textured growths and seek prompt medical attention if you discover them.

Chronic exposure to the sun also causes premature aging, which over time can make the skin become thick, wrinkled, and leathery. Since it occurs gradually, often manifesting itself many years after the majority of a person’s sun exposure, premature aging is often regarded as an unavoidable, normal part of growing older. However, up to 90 percent of the visible skin changes commonly attributed to aging are caused by the sun. With proper protection from UV radiation, most premature aging of the skin can be avoided.

Cataracts and Other Eye Damage

Cataracts are a form of eye damage in which a loss of transparency in the lens of the eye clouds vision. If left untreated, cataracts can lead to blindness. Research has shown that UV radiation increases the likelihood of certain cataracts. Although curable with modern eye surgery, cataracts diminish the eyesight of millions of Americans and cost billions of dollars in medical care each year.



Other kinds of eye damage include pterygium (tissue growth that can block vision), skin cancer around the eyes, and degeneration of the macula (the part of the retina where visual perception is most acute). All of these problems can be lessened with proper eye protection. Look for sunglasses, glasses or contact lenses if you wear them, that offer 99 to 100 percent UV protection.

Immune Suppression

Scientists have found that overexposure to UV radiation may suppress proper functioning of the body’s immune system and the skin’s natural defenses. For example, the skin normally mounts a defense against foreign invaders such as cancers and infections. But overexposure to UV radiation can weaken the immune system, reducing the skin’s ability to protect against these invaders.

The UV Index

The UV Index forecasts the strength of the sun’s harmful rays. The higher the number, the greater the chance of sun damage.



Visit www.epa.gov/sunwise/uvindex.html

For More Information

To learn more about UV radiation and health effects, as well as EPA’s SunWise Program, an environmental and health education program, call EPA’s Stratospheric Ozone Information Hotline at 800.296.1996, or visit our Web site at www.epa.gov/ozone/strathome.html.