With summer vacation and the work that will happen outside during the hottest months of the year, skin cancer is a topic that should be considered. For this month’s issue of Health and Safety News, information from the CDC (Centers for Disease Control and Prevention) will be the focus, as it relates to skin cancer. For any topic that is highlighted in the newsletter, to read more about it, simply right click and select Open Hyperlink. The CDC’s web address is http://www.cdc.gov/cancer/skin/.

Skin cancer is the most common form of cancer in the United States. In the United States in 2008,* 59,695 people were diagnosed with melanomas of the skin, and 8,623 people died from it.† CDC leads national efforts to reduce skin cancer through education. When in the sun, seek shade, cover up, get a hat, wear sunglasses, and use sunscreen.

*Latest year for which statistics are available. †Source: USCS.
Basic Information About Skin Cancer

Skin cancer is the most common form of cancer in the United States. The two most common types of skin cancer—basal cell and squamous cell carcinomas—are highly curable. However, melanoma, the third most common skin cancer, is more dangerous. About 65%–90% of melanomas are caused by exposure to ultraviolet (UV) light.¹

For more information, visit the National Cancer Institute's Skin Cancer.

Ultraviolet (UV) Light

Ultraviolet (UV) rays are an invisible kind of radiation that comes from the sun, tanning beds, and sunlamps. UV rays can penetrate and change skin cells.

The three types of UV rays are ultraviolet A (UVA), ultraviolet B (UVB), and ultraviolet C (UVC)—

- UVA is the most common kind of sunlight at the earth's surface, and reaches beyond the top layer of human skin. Scientists believe that UVA rays can damage connective tissue and increase a person's risk of skin cancer.
- Most UVB rays are absorbed by the ozone layer, so they are less common at the earth's surface than UVA rays. UVB rays don't reach as far into the skin as UVA rays, but they can still be damaging.
- UVC rays are very dangerous, but they are absorbed by the ozone layer and do not reach the ground.

Too much exposure to UV rays can change skin texture, cause the skin to age prematurely, and can lead to skin cancer. UV rays also have been linked to eye conditions such as cataracts.

UV Index

The National Weather Service and the Environmental Protection Agency developed the UV Index to forecast the risk of overexposure to UV rays. It lets you know how much caution you should take when working, playing, or exercising outdoors.

The UV Index predicts exposure levels on a 1–15 scale; higher levels indicate a higher risk of overexposure. Calculated on a next-day basis for dozens of cities across the United States, the UV Index
takes into account clouds and other local conditions that affect the amount of UV rays reaching the ground.

Reference


Content source: Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion

Risk Factors

People with certain risk factors are more likely than others to develop skin cancer. Risk factors vary for different types of skin cancer, but some general risk factors are having—

- A lighter natural skin color.
- Family history of skin cancer.
- A personal history of skin cancer.
- Exposure to the sun through work and play.
- A history of sunburns early in life.
- A history of indoor tanning.
- Skin that burns, freckles, reddens easily, or becomes painful in the sun.
- Blue or green eyes.
- Blond or red hair.
- Certain types and a large number of moles.

For more information, visit the National Cancer Institute's Skin Cancer Risk Factors.
Tanning and Burning

Ultraviolet (UV) rays come from the sun or from indoor tanning (using a tanning bed, booth, or sunlamp to get tan). When UV rays reach the skin's inner layer, the skin makes more melanin. Melanin is the pigment that colors the skin. It moves toward the outer layers of the skin and becomes visible as a tan.

A tan does not indicate good health. A tan is a response to injury, because skin cells signal that they have been hurt by UV rays by producing more pigment.

People burn or tan depending on their skin type, the time of year, and how long they are exposed to UV rays. The six types of skin, based on how likely it is to tan or burn, are—

- I: Always burns, never tans, sensitive to UV 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.

Although everyone's skin can be damaged by UV exposure, people with skin types I and II are at the highest risk.

For more information about sunburn, visit Traveler's Health: Sunburn.

References


Prevention

Protection from ultraviolet (UV) radiation is important all year round, not just during the summer or at the beach. UV rays from the sun can reach you on cloudy and hazy days, as well as bright and sunny days.
UV rays also reflect off of surfaces like water, cement, sand, and snow. Indoor tanning (using a tanning bed, booth, or sunlamp to get tan) exposes users to UV radiation.

The hours between 10 a.m. and 4 p.m. daylight savings time (9 a.m. to 3 p.m. standard time) are the most hazardous for UV exposure outdoors in the continental United States. UV rays from sunlight are the greatest during the late spring and early summer in North America.

CDC recommends easy options for protection from UV radiation—

- Seek shade, especially during midday hours.
- Wear clothing to protect exposed skin.
- Wear a hat with a wide brim to shade the face, head, ears, and neck.
- Wear sunglasses that wrap around and block as close to 100% of both UVA and UVB rays as possible.
- Use sunscreen with sun protective factor (SPF) 15 or higher, and both UVA and UVB protection.
- Avoid indoor tanning.

**Shade**

You can reduce your risk of skin damage and skin cancer by seeking shade under an umbrella, tree, or other shelter before you need relief from the sun. Your best bet to protect your skin is to use sunscreen or wear protective clothing when you're outside—even when you're in the shade.

**Clothing**

Loose-fitting long-sleeved shirts and long pants made from tightly woven fabric offer the best protection from the sun's UV rays. A wet T-shirt offers much less UV protection than a dry one. Darker colors may offer more protection than lighter colors.

If wearing this type of clothing isn't practical, at least try to wear a T-shirt or a beach cover-up. Keep in mind that a typical T-shirt has an SPF rating lower than 15, so use other types of protection as well.
Hats

For the most protection, wear a hat with a brim all the way around that shades your face, ears, and the back of your neck. A tightly woven fabric, such as canvas, works best to protect your skin from UV rays. Avoid straw hats with holes that let sunlight through. A darker hat may offer more UV protection.

If you wear a baseball cap, you should also protect your ears and the back of your neck by wearing clothing that covers those areas, using sunscreen with at least SPF 15, or by staying in the shade.

Sunglasses

Sunglasses protect your eyes from UV rays and reduce the risk of cataracts. They also protect the tender skin around your eyes from sun exposure.

Sunglasses that block both UVA and UVB rays offer the best protection. Most sunglasses sold in the United States, regardless of cost, meet this standard. Wrap-around sunglasses work best because they block UV rays from sneaking in from the side.

Sunscreen

The sun's UV rays can damage your skin in as little as 15 minutes. Put on sunscreen before you go outside, even on slightly cloudy or cool days. Don't forget to put a thick layer on all parts of exposed skin. Get help for hard-to-reach places like your back.

The United States Food and Drug Administration has announced significant changes to sunscreen product labels that will help consumers decide how to buy and use sunscreen, and allow them to protect themselves and their families from sun-induced damage more effectively.

How sunscreen works. Most sun protection products work by absorbing, reflecting, or scattering sunlight. They contain chemicals that interact with the skin to protect it from UV rays. All products do not have the same ingredients; if your skin reacts badly to one product, try another one or call a doctor.
SPF. Sunscreens are assigned a sun protection factor (SPF) number that rates their effectiveness in blocking UV rays. Higher numbers indicate more protection. You should use a sunscreen with at least SPF 15.

Reapplication. Sunscreen wears off. Put it on again if you stay out in the sun for more than two hours, and after you swim or do things that make you sweat.

Expiration date. Check the sunscreen's expiration date. Sunscreen without an expiration date has a shelf life of no more than three years, but its shelf life is shorter if it has been exposed to high temperatures.

Cosmetics. Some make-up and lip balms contain some of the same chemicals used in sunscreens. If they do not have at least SPF 15, don't use them by themselves.

Indoor Tanning

Using a tanning bed, booth, or sunlamp to get tan is called "indoor tanning." Indoor tanning has been linked with skin cancers including melanoma (the deadliest type of skin cancer), squamous cell carcinoma, and cancers of the eye (ocular melanoma).^1^2^2^3^4^

Dangers of Indoor Tanning

Indoor tanning exposes users to both UV-A and UV-B rays, which damage the skin and can lead to cancer.^5^ Using a tanning bed is particularly dangerous for younger users; people who begin tanning younger than age 35 have a 75% higher risk of melanoma.^6^ Using tanning beds also increases the risk of wrinkles and eye damage, and changes skin texture.^12^3^4^5^6^

Myths About Indoor Tanning

“Tanning indoors is safer than tanning in the sun.”

Indoor tanning and tanning outside are both dangerous. Although tanning beds operate on a timer, the exposure to ultraviolet (UV) rays can vary based on the age and type of light bulbs. You can still get a burn from tanning indoors, and even a tan indicates damage to your skin.
“I can use a tanning bed to get a base tan, which will protect me from getting a sunburn.”

A tan is a response to injury: skin cells respond to damage from UV rays by producing more pigment. The best way to protect your skin from the sun is by using these tips for skin cancer prevention.

“Oh indoor tanning is a safe way to get vitamin D, which prevents many health problems.”

Vitamin D is important for bone health, but studies showing links between vitamin D and other health conditions are inconsistent. Although it is important to get enough vitamin D, the safest way is through diet or supplements. Tanning harms your skin, and the amount of time spent tanning to get enough vitamin D varies from person to person.

Statistics

According to the 2009 Youth Risk Behavior Surveillance System, the following proportions of youth report indoor tanning:

- 16% of all high school students.
- 25% of high school girls.
- 33% of girls in the 12th grade.
- 37% of white high school girls.

According to the 2005 National Health Interview Survey, indoor tanners tended to be young, non-Hispanic white women.

- 27% of non-Hispanic whites aged 18–29 years reported indoor tanning.
- 27% of women aged 18–29 years reported indoor tanning.
- People 30 years and older tanned less frequently with age.

Healthy People 2020 Goals for Indoor Tanning

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. Healthy People 2020 has 20 cancer objectives, including—

- Reduce the proportion of adolescents in grades 9 through 12 who report using artificial sources of ultraviolet light for tanning to 14.0%.
- Reduce the proportion of adults aged 18 years and older who report using artificial sources of ultraviolet light for tanning to 13.7%.

Indoor Tanning Policies

Indoor tanning is restricted in some areas, especially for minors.

United States

- States with Laws Addressing Minors’ Access to Tanning Facilities (National Cancer Institute)
• **Tanning Restrictions for Minors: A State-by-State Comparison** (National Conference of State Legislatures)
• **Enforcement of State Indoor Tanning Laws in the United States**

**International**

• Brazil has banned the use of tanning beds.\(^2\)
• The United Kingdom, Germany, Scotland, France, several Australian states, and several Canadian provinces have banned indoor tanning for people younger than age 18.\(^8\)

![Tanning bed image]

**References**


Screening

The U.S. Preventive Services Task Force (USPSTF) has concluded there is not enough evidence to recommend for or against routine screening (total body examination by a clinician) to detect skin cancers early. However, the USPSTF recommends that clinicians—

- Be aware that fair-skinned men and women aged 65 and older, and people with atypical moles or more than 50 moles, are at greater risk for developing melanoma.
- Remain alert for skin abnormalities when conducting physical examinations for other purposes.

Protecting Children from the Sun

Just a few serious sunburns can increase your child's risk of skin cancer later in life. Kids don't have to be at the pool, beach, or on vacation to get too much sun. Their skin needs protection from the sun's harmful ultraviolet (UV) rays whenever they're outdoors.

- **Seek shade.** UV rays are strongest and most harmful during midday, so it's best to plan indoor activities then. If this is not possible, seek shade under a tree, an umbrella, or a pop-up tent. Use these options to prevent sunburn, not to seek relief after it's happened.
- **Cover up.** Clothing that covers your child's skin helps protect against UV rays. Although a long-sleeved shirt and long pants with a tight weave are best, they aren't always practical. A T-shirt, long shorts, or a beach cover-up are good choices, too—but it's wise to double up on protection by applying sunscreen or keeping your child in the shade when possible.
- **Get a hat.** Hats that shade the face, scalp, ears, and neck are easy to use and give great protection. Baseball caps are popular among kids, but they don't protect their ears and neck. If your child chooses a cap, be sure to protect exposed areas with sunscreen.
- **Wear sunglasses.** They protect your child's eyes from UV rays, which can lead to cataracts later in life. Look for sunglasses that wrap around and block as close to 100% of both UVA and UVB rays as possible.
- **Apply sunscreen.** Use sunscreen with at least SPF 15 and UVA and UVB protection every time your child goes outside. For the best protection, apply sunscreen generously 30 minutes before going outdoors. Don't forget to protect ears, noses, lips, and the tops of feet.
Take sunscreen with you to reapply during the day, especially after your child swims or exercises. This applies to waterproof and water-resistant products as well.

Follow the directions on the package for using a sunscreen product on babies less than 6 months old. All products do not have the same ingredients; if your or your child's skin reacts badly to one product, try another one or call a doctor. Your baby's best defense against sunburn is avoiding the sun or staying in the shade.

The United States Food and Drug Administration has announced significant changes to sunscreen product labels that will help consumers decide how to buy and use sunscreen, and allow them to protect themselves and their families from sun-induced damage more effectively.

Keep in mind, sunscreen is not meant to allow kids to spend more time in the sun than they would otherwise. Try combining sunscreen with other options to prevent UV damage.

**Too Much Sun Hurts**
Turning pink? Unprotected skin can be damaged by the sun's UV rays in as little as 15 minutes. Yet it can take up to 12 hours for skin to show the full effect of sun exposure. So, if your child's skin looks "a little pink" today, it may be burned tomorrow morning. To prevent further burning, get your child out of the sun.

Tan? There's no other way to say it—tanned skin is damaged skin. Any change in the color of your child's skin after time outside—whether sunburn or suntan—indicates damage from UV rays.

Cool and cloudy? Children still need protection. UV rays, not the temperature, do the damage. Clouds do not block UV rays, they filter them—and sometimes only slightly.

Oops! Kids often get sunburned when they are outdoors unprotected for longer than expected. Remember to plan ahead, and keep sun protection handy—in your car, bag, or child's backpack.

Sun Safety at School

The brochure Sun Safety at Schools: What You Can Do [PDF-245KB] explains how school administrators and staff, parents, and community healthcare service providers can promote sun safety.

Shade Planning for America's Schools [PDF-1.2MB] is a manual to help school communities create and maintain a physical environment that supports sun safety by ensuring that school grounds have adequate shade.