

News for Health Educators and Students

Issue Number 7 - SPECIAL EDITION

Summer 2005



The Truth About Tanning: What You Need to Know to Protect Your Skin

There's no such thing as a safe tan.

Don't mistake the tan you get from hours spent by the pool or under tanning lamps for a healthy summer glow, it's actually a sign of sun damage from UV rays and can cause premature aging and skin cancer. But protecting your skin now can help prevent the side effects caused by too much sun.

The Inescapable UV Ray

Ultraviolet (UV) radiation is all around us. The most common source is sunlight, which produces three main types of UV rays: UVA, UVB, and UVC. While UVA and UVB rays are transmitted through the atmosphere, all UVC and some UVB rays are absorbed by the Earth's ozone layer. Most of the UV rays that reach the Earth's surface are composed of UVA with a small amount of UVB.

UV light is classified by wavelength. UVB rays have a short wavelength that reaches the outer layer of your skin, called the epidermis. UVA rays have a longer wavelength that can penetrate and damage the lower layer of your skin, called the dermis. It's important to use protection when you're out in the sun because both UVA and UVB rays can cause sunburn, premature aging, skin cancer, and damage to the eyes and immune system.

Because UV rays are strongest from 10 a.m. until 4 p.m., it's a good idea to check the Ultraviolet Index (UVI) before you go outside. UVI is a number from 1-11 that indicates the amount of skin-damaging UV rays reaching the earth's surface at any point in time. The daily UVI number, listed in the weather section of most city newspapers, forecasts the amount of UV you'll be exposed to during the sun's highest point in the sky—usually around noon. The higher the UVI number is, the more intense the exposure. If your local newspaper doesn't list the UVI for your area, the Environmental Protection Agency (EPA) offers UVI forecasts by ZIP code at <http://www.epa.gov/sunwise/uvindex.html>.

When the UVI is 5 or higher, you should always protect yourself from UV exposure with sunscreen, a brimmed hat, and sunglasses; taking extra care to reapply sunscreen and seek shade or stay indoors. Also remember that exposure doesn't come only from above; snow, sand, water, and even concrete reflect UV

In This Issue

The Inescapable UV Ray
Recipe for a Tan
Sunburn
Long-Term Sun Damage
Skin Cancer
Prevention
Sunscreen
In the Salon
Sunless Tanning
Tanning Pills
Learn More

rays. In addition, clouds don't block UVB and you can still get sunburned on a cloudy day. So it's important to wear sunscreen and protective gear in all types of weather.

Recipe for a Tan

Whether from a day on the beach or hours spent in a tanning salon, the "tan" color your skin gets after baking under UV rays is a sign of skin damage.

When it's exposed to UV rays your skin produces a pigment called melanin to protect skin cells from damage. Melanin is the same pigment that already colors your hair, eyes, and skin. When your skin is exposed to UV rays it produces extra melanin and may become darker over the next few days.

Contrary to what you may have heard, getting a tan doesn't protect your skin from further UV damage. The extra melanin in tanned skin provides a Sun Protection Factor (SPF) of about 2 to 4; far below the minimum recommended SPF of 15.

While it's true that sunlight can have the benefit of helping your body produce vitamin D, about 10 to 15 minutes of unprotected sun on your face and hands 2 to 3 times a week provides you with a healthy dose. Too much sun exposure can lead to sunburn, premature aging, or skin cancer.

Sunburn

Like a tan, a sunburn is a sign of short-term sun damage. Sunburn, also called erythema, is the skin's natural defense against overexposure to UV rays. When UV rays reach your skin they begin damaging skin cells in the epidermis. In response, your immune system increases blood flow in the affected areas, making the skin feel warm and look red. White blood cells, which help protect you from infection and disease, attack and remove the damaged skin cells. The process of removing the damaged cells can cause the skin to itch and peel. Meanwhile, the damaged skin cells are releasing chemicals that send messages to your brain. Your brain translates these messages into a painful burning sensation to let you know you've been sunburned.

Because it can take up to 8 hours for the full effects of sunburn to kick in, you won't realize that you've been burned right away.

A mild sunburn can be treated with cool baths, over-the-counter hydrocortisone creams, and aspirin to ease pain and swelling, according to the American Academy of Dermatology (AAD). A severe sunburn, usually characterized by a large area of red, blistered skin with a headache, fever, or chills should be treated as a medical emergency and examined by a doctor right away.

Studies have shown a link between severe sunburn and melanoma, the most serious form of skin cancer, so any sunburn should be taken seriously.

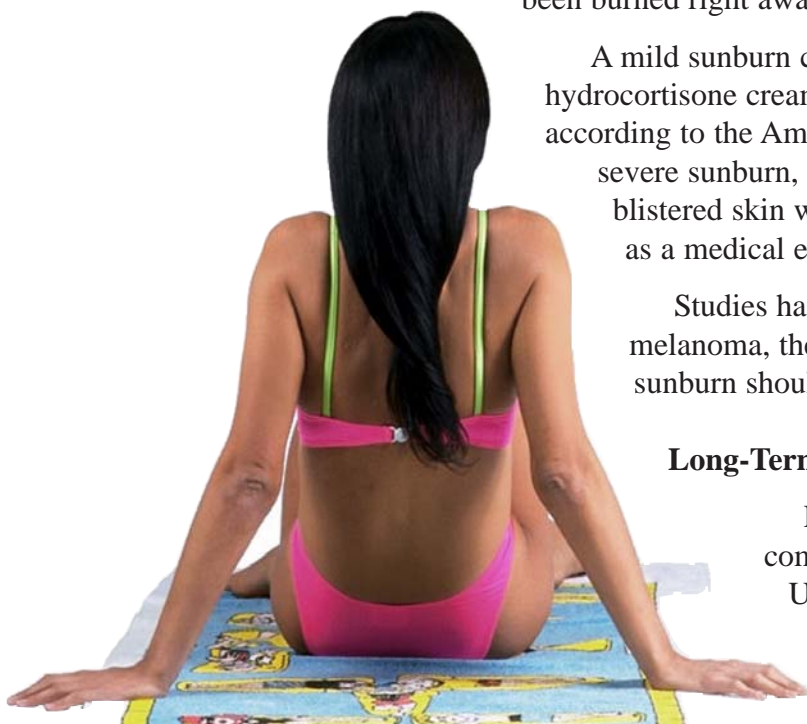
Long-Term Sun Damage

Leathery, wrinkled skin and dark spots are common earmarks of a lifelong sunbather.

Unfortunately, since these signs of sun damage don't usually show up until many years later, you may think you're immune to the long-term effects of tanning.

DID YOU KNOW?

Direct sun isn't the only cause of sunburn. You can get sunburned even on a cloudy day because UV rays can filter through the water droplets that make up clouds.



Everyone, no matter their skin tone, is at risk for skin damage. There are six skin categories recognized by the FDA and the AAD. Each is classified by sensitivity to the sun and typical skin tone. Check out the table to see which skin type you are.

The best way to prevent sun damage is to practice sun safety everyday. That includes wearing sunscreen, a brimmed hat, and sunglasses every time you go outside. Remember, even if you can't see it now, the damage done today will catch up with you later.

Skin Cancer

According to the American Cancer Society, "Many of the more than 1 million skin cancers that are expected to be diagnosed in 2005 could have been prevented by protection from the sun's rays."

Experts agree that natural and artificial sunlight, particularly the UV rays, damages the skin. UV rays cause the obvious short-term damage seen in a sunburn or a tan, as well as the long-term damage that accumulates with each exposure.

When you tan you greatly increase your risk of developing skin cancer. This is especially true if you spend time tanning each year because damage to the skin accumulates over time. Unlike skin cancer, premature aging of the skin will occur in everyone who is repeatedly exposed to the sun over a long time, although the damage may be less apparent and take longer to show up in people with darker skin.

There are three main types of skin cancer: melanoma, basal cell carcinoma, and squamous cell carcinoma. Melanoma is the least common but most serious because it's responsible for most of the skin cancer deaths each year. The other two types, basal cell and squamous cell carcinomas, are often referred to as non-melanoma skin cancer. Basal cell cancer is the most common skin cancer, followed by squamous cell carcinoma, which can also become a killer.

A fourth type of growth, actinic or solar keratosis, is also of concern because it can progress into cancer. It's the most common pre-malignant skin condition, occurring in more than 5 million Americans.

Skin Type	Sun History	Example
I	Always burns easily, never tans, extremely sun sensitive skin	Red-headed, freckles, Irish/Scots/Welsh
II	Always burns easily, tans minimally, very sun sensitive skin	Fair-skinned, fair-haired, blue or green-eyed, Caucasians
III	Sometimes burns, tans gradually to light brown, sun sensitive skin	Average skin
IV	Burns minimally, always tans to moderate brown, minimally sun sensitive	Mediterranean-type Caucasians
V	Rarely burns, tans well, sun insensitive skin	Middle Eastern, some Hispanics, some African-Americans
VI	Never burns, deeply pigmented, sun insensitive skin	African-Americans

DID YOU KNOW?

Australia has the highest incidence of skin cancer in the world. To make it easy for Australians to remember how to protect their skin, The Cancer Council Victoria coined the catchy slogan: Slip! Slop! Slap! ®

Slip! - Slip on a shirt

Slop! - Slop on SPF 15+ sunscreen

Slap! - Slap on a wide-brim hat

Researchers still aren't sure why some people develop skin cancer and others don't, but there are some preventive measures you can take that may reduce your chances of getting skin cancer. While sunscreens protect against sunburn, they don't necessarily prevent cancer. If you use sunscreens to spend more time in the sun, your skin could still be exposed to a high dose of UV, especially the longwave rays. So it's still a good idea to stay out of the sun at midday, and to protect yourself with sunglasses, a wide-brim hat, and protective clothing like a long-sleeved shirt made of thick, light-colored fabric.

Moles or freckles that change shape, color, texture, or get crusty and bleed could be a sign of skin cancer. Early-stage melanomas often show up as a light brown to black flat mark that is usually about

Perform A Self Skin Cancer Check

No matter how much time you spend in the sun, you should protect yourself by checking for signs of skin cancer. Visit <http://www.fda.gov/cdrh/fdaandyou/issue03.html#7> to learn how.

one-quarter inch in size. Any suspect spot should be checked out by your doctor as soon as possible. When detected in its earliest stages, skin cancer is often curable.

For more information on skin cancer, visit the American Academy of Dermatology's Web site at <http://www.aad.org>.

Prevention

The best way to protect your skin from the dangerous effects of UV rays is to take simple precautions every day. Wearing sunscreen, shielding your face and eyes with a wide-brim hat, and sunglasses with a UVA/UVB rating of 99% or higher, and seeking shade when possible can help decrease your risk.

Clothing can also help protect you from harmful UV in the form of protection you don't need to reapply. Fabrics can differ greatly in their ability to shield you from UV rays, and natural fibers like cotton offer little protection when wet.

The ideal sun protective fabrics are lightweight, comfortable, and protect against exposure even when wet. SPF clothing are available that have thick, tightly woven fabrics with special fibers and dyes to help shield you from the sun's rays. Remember that light-color fabrics will be cooler in the summer heat.

Certain medications, such as antibiotics, can make you more sensitive to the sun and put you at greater risk for sunburn. Ask your doctor whether you're taking a medication that could affect your sensitivity to the sun and what you should do.

Sunscreen

Sunscreen doesn't completely protect you from harmful UV rays, but it can drastically reduce their effects if used properly. Sunscreen is available in a variety of forms for you to choose from, including sprays, lotions, gels and wax sticks. Most sunscreens are made of chemicals that absorb UV radiation. Others create a barrier that reflects the UV radiation away from the skin.

When shopping for sunscreen, choose one that's labeled as broad-spectrum because it will help protect you from both UVA and UVB rays. Check the sunscreen label for broad-spectrum ingredients, such as benzophenones (oxybenzone), cinnamates (octylmethyl cinnamate and cinoxate), sulisobenzene, salicylates, titanium dioxide, zinc oxide, and avobenzone (Parsol 1789).

All sunscreens are labeled with SPF numbers. The higher the SPF number, the more protection against sunburn the sunscreen provides. To get the most protection out of sunscreen choose one with an SPF of at least 15.

Some sunscreens are labeled as being water-resistant. These sunscreens stay on the skin longer even if they get wet from pool water, ocean water, or sweat. But water-resistant doesn't mean waterproof. Water-resistant sunscreens still need to be reapplied, so check the label for reapplication times.

Protect Yourself with These Sun Safety Tips:

- ☀ Avoid the sun, or seek shade, from 10 a.m. to 4 p.m. when the sun's rays are strongest.
- ☀ Apply an SPF 15 or higher sunscreen
- ☀ Allow 30 minutes for skin to absorb sunscreen before going outside.
- ☀ Check the label and reapply sunscreen according to the instructions.
- ☀ Wear a wide-brimmed hat.
- ☀ Protect eyes with sunglasses that have a UV/UVB protection of at least 99%.
- ☀ Check with your doctor to find out if you're taking medications that will make you more sensitive to the sun.

The effectiveness of a sunscreen is reduced if it's applied incorrectly or if it's washed off, rubbed off, or sweated off. To make sure you're getting the maximum sunscreen protection, apply an even layer of sunscreen and reapply it according to the directions.

Sunscreen usually needs about 15-30 minutes to soak in to the skin before you go outside. Read the label to see how long you should wait. If the label doesn't indicate how long, wait 30 minutes to be safe.

In the Salon

With the convenience offered by a tanning salon, it may be tempting to lie in a tanning bed or sit in front of a tanning lamp. Fight the urge! Tanning beds and lights are just as dangerous as tanning at the pool or on the beach. The UVA rays emitted by a tanning lamp or bed are often much more intense than those produced by the sun. The aging and cancer risks associated with outdoor tanning are the same as tanning in a salon. For these reasons, the FDA doesn't recommend the use of indoor tanning equipment--EVER.

If you insist on using a tanning lamp or bed, follow these steps to reduce the dangers of UV exposure.

- Be sure to wear the goggles provided, making sure they fit snugly and aren't cracked.
- Start slowly and use short exposure times to build up a tan over time.
- Follow manufacturer-recommended exposure times for your skin type. Check the label for exposure times.
- Stick to your time limit.
- After a tan is developed, tan no more often than twice a week.

The key is to take it slow. If you get the maximum exposure the first time, you'll probably get burned. And because sunburn takes several hours to develop you won't realize your skin is burned until much later.

FDA has a radiation safety performance standard for sunlamp products. All sunlamp products must have a warning label, an accurate timer, an emergency stop control, and include an exposure schedule and protective goggles.

You should **NOT** use a tanning bed or lamp if:

- You sunburn easily and don't tan. Skin that doesn't tan in the sun probably won't tan with sunlamps either.
- You get frequent cold sores. UV radiation may cause them to appear more frequently.
- You're taking medicines that can make you more sensitive to UV rays. Check with your doctor or pharmacist.

Sunless Tanning

The spray-on glow offered at sunless tanning booths make them a popular place to maintain a tan year-round. What you may not realize is that even sunless tanning can have risks.

Sunless tanning delivers a faux glow by coating your skin with the chemical dihydroxyacetone (DHA). DHA interacts with the dead



Sun Screen Review

- ☀ Choose a water-resistant, broad-spectrum sunscreen with SPF 15 or higher.
- ☀ Apply an even coat of sunscreen over all exposed skin, including your eyelids, lips, nose, ears, neck, hands and feet.
- ☀ Allow 15-30 minutes for the sunscreen to be absorbed by your skin before going outside.
- ☀ Reapply sunscreen according to the directions on the label-usually about once every hour.

surface cells in the epidermis to darken skin color and simulate a tan, and the result usually last for several days.

You should know that while the FDA allows DHA to be "externally applied" for skin coloring, there are restrictions on its use. DHA should not be inhaled, ingested, or used in such a way that the eyes and eye area are exposed to it because the risks, if any, are unknown.

Before using a sunless tanning booth, ask the tanning salon these questions to make sure you'll be protected:

- Will my eyes and the area surrounding them be protected?
- Will my nose, mouth and ears be protected?
- Will I be protected from inhaling the tanning spray through my nose or mouth?

If the answer to any of these questions is "no," look for another salon. Otherwise you're putting yourself at risk for exposure to chemicals with potentially dangerous effects.

You should also take precautions if you're applying a self-tanner at home. Most self tanners contain the same DHA used in sunless tanning salons. Self-tanners are available in many forms, including lotions, creams and sprays that you apply and let soak in to your skin. Follow the directions on the self-tanner label carefully and take care not to get the self-tanner in your eyes, nose, or mouth.



Tanning Pills

You may have seen ads that promise to give you a golden glow just by swallowing a pill. This may sound too good to be true, because it is. These, so-called, tanning pills are unsafe and none are approved by the FDA.

Some tanning pills contain the color additive canthaxanthin. When large amounts of canthaxanthin are ingested, the substance can turn the skin a range of colors from orange to brown. They can also cause serious health problems including liver damage; a severe itching condition called urticaria; and an eye disorder called canthaxanthin retinopathy, in which yellow deposits form in the retinas.

Learn More

To learn more about UV rays, tanning, and sun safety visit:

The Environmental Protection Agency's SunWise Web site at <http://www.epa.gov/sunwise>.

The FDA's Web page on sunscreens, tanning products, and sun safety at <http://vm.cfsan.fda.gov/~dms/cos-220.html>

VISIT OUR BOOTH

FDA & YOU will be exhibiting at the National Association of Health Education Centers (NAHEC) Conference in Houston, Texas August 30 & 31st

DID YOU KNOW?

Many self-tanners don't have sunscreen in them.

Check the label. If it doesn't have sunscreen, apply one with SPF 15 or higher before going outside

About FDA & You

FDA & You is an FDA publication to inform and encourage health educators and students to learn about the latest FDA medical device and health news.

The publication's contents may be freely reproduced. Comments may be sent to the editors.

Editor: Alicia Witters

Editor: Edie Seligson

Email: FDAandyou@cdrh.fda.gov

Read us online at
<http://www.fda.gov/cdrh/fdaandyou.html>

Department of Health and Human Services
Food and Drug Administration
Center for Devices and Radiological Health, HFZ-230
Rockville, MD 20850

Special thanks to
Sharon Miller, the OCER Radiation Experts and
Tammy Wallace
for contributing to this issue.