



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Fact Sheet

The American Cancer Society states that many of the more than one million skin cancers expected to be diagnosed this year could have been prevented. To a great extent, protection from the sun will prevent development of skin cancer. Helping people understand the danger of sun exposure and simple protective measures they can take will reduce the amount of skin cancer in the next generation. This fact sheet will focus on (1) measures that can be used to prevent sun damage, (2) how to recognize skin cancer and (3) what to do if skin cancer is detected.

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FRY NOW, PAY LATER

What is skin cancer?

There are three types of skin cancer: 1) basal cell carcinomas, 2) squamous cell carcinomas, and 3) malignant melanomas. Malignant melanoma is the most serious form of skin cancer; it grows rapidly. Basal cell and squamous cell carcinomas are less lethal, but still dangerous if not treated in time.

Skin cancer is preventable and curable in most cases. The American Cancer Society has stated that up to 90 percent of skin cancers diagnosed could be prevented by protection from the sun's rays. Because skin cancer is visible, it can be detected soon after it begins. Rates of cure are high when the cancer is diagnosed and treated in its early stages.

What genetics or life habits increase chances of developing skin cancer?

The sun is identified as the source of the problem. Overexposure to the sun's ultraviolet radiation causes all three types of skin cancer. Regardless of skin color, all skin can burn. Light-skinned, light-eyed people of North European descent – particularly those with red or blond hair and freckled skin that reddens and burns easily, blisters and peels – are at high risk. Caucasians with dark hair and eyes and more even pigmentation, as well as Hispanics and Asians, are somewhat less susceptible, and blacks rarely develop either carcinomas or melanomas. The rate of melanomas in blacks, though increasing, is only one fiftieth that of whites. The melanomas that develop in blacks appear to be hereditary.

Tanning inflicts a burn on the skin, causing it to grow darker in color, depending upon how much melanin is present. Melanin acts as a defense mechanism against ultraviolet (UV) rays. It darkens the skin as a means of preventing further injury. The darker a person's natural skin coloring, the more melanin pigmentation is present. Individuals who have at birth or who produce more melanin (those with darker skin or who tan easily) have a limited amount of built-in protection. Melanin helps protect the skin from cancer, but not enough is present to eliminate the risk.

How do we avoid getting skin cancer?

If avoiding overexposure to the sun is the primary preventive skin cancer strategy, staying out of the sun will eliminate the risk. But who wants to stay indoors all day? How can we work outdoors, enjoy outside activities, and protect our skin from harmful rays of the sun?

Skin damage from the sun is cumulative, building up over the years. Long periods of daily sun exposure, even if the skin does not burn, add to your risk of skin cancer. The longer the exposure time, the higher the risk, and exposure during childhood and adolescence plays a major role in development of skin cancer in susceptible individuals. One study showed that blistering sunburns between ages 15 and 20 were associated with an increased risk of melanoma (the relative risk 2.2 for five or more burns vs. none).

A sun-worshiping culture, the popularity of sunny vacation spots, and possibly the thinning of the ozone have led to the near epidemic proportions of skin cancers. The Harvard Medical School Health Letter reports, "the bronzed youth of the baby boom, now reaching middle age, are in the vanguard of the melanoma plague." According to recent medical reports, patients under age 40 were rarely treated for skin cancer two decades ago. Today, individuals in their 20s, most female, are commonly diagnosed with skin cancer.

In addition to skin cancer, ultraviolet light can increase eye damage, agerelated nearsightedness, deformation of lens capsule and nuclear cataract. These effects appear to be independent of pigmentation.

How can we protect our families?

We can reduce the amount of skin cancer in the future by teaching our children to protect themselves. Since sun damage is cumulative, with a great proportion of damage occurring before a person is 18 years old, much can be accomplished by influencing the life habits of our children.

- Teach children to avoid and protect themselves from the sun from 10 a.m. to 3 p.m., when the rays are the strongest. Schedule outdoor activities early in the morning or late in the afternoon.
- Warn them that protection is needed on cloudy days; even on a cloudy or over-cast day, 80 percent of the sun's ultraviolet rays reach the earth.
- Encourage a natural, untanned skin look as fashionable. If they insist on a tan, make sure they get it from a bottle: Self-tanner products are safe and, applied correctly, give a tanned appearance.
- Make sure family vacations include sufficient sun damage protection.
- Do not allow children to use tanning beds, booths, or lamps. Manufacturers' claims that these products are "safer than the sun" are false. According to the Skin Cancer Foundation, exposure to the radiation of a tanning booth may be more dangerous than exposure to the sun. Many tanning booths use a combination of UVA- and UVB-radiating light. One hazard of being exposed to UVA/ UVB light is the damage it can do to the cornea. Unprotected exposure to UVA radiation can damage the skin's blood vessels, effect immunologic cells in the epidermis, and cause the skin to lose elasticity, resulting in wrinkles, a leathery appearance and premature aging.
- Help children choose protective cover-ups that keep the rays off the body: wide-brimmed hats, long-sleeved tops and long pants made of tightly woven, medium-weight fabrics that prevent light penetration.
- Provide them with sunscreen lotions with a Sun Protect Factor (SPF) of 15 or greater. An SPF of 15 means that if a person can stay in the sun without reddening for 10 minutes, a lotion labeled SPF 15 will allow staying out 15 times as long, or 150 minutes (2 hours and 30 minutes) without reddening. However, the lotion must stay on the skin to be fully effective during that time. Make sure children know how to apply sunscreen and when to reapply. Follow label directions, and rub on sunscreen at least 30 minutes before going out. Reapply every two to four hours. An SPF of greater that 24 is not recommended: It provides protection for a greater period of time than it is practical to keep the lotion in place.
- Provide children with sunglasses that screen out at least 99 percent of UVB rays and 95 percent of UVA rays. Be wary of broad label claims: "blocks harmful UV" or "100 percent UV protection." All sunglasses offer some protection and no sunglasses offer 100 percent protection.

Although people of all ages should protect themselves from the sun's damaging rays, some may already have damaged their skin and have the early stages of skin cancer. Skin cancer caused by sun damage may not show up for 30 or more years, but early detection is essential to a cure. Get in the habit of examining your body. Once a month look for unusual blemishes, sores, or discolorations. Other things to observe are:

- Spots or new lesions that bleed and do not heal.
- Precancerous spots that are reddish-brown with a scaly crust.
- Any changes in moles: color, shape, size, irritation and bleeding, painful or itchy.

The following are characteristic warning signs of melanoma:

- Asymmetry: One-half of the mole is unlike the other half.
- Border irregularity: The edges of a mole are ragged, notched, or blurred.
- Color: Pigmentation is not uniform. Shades of tan, brown, and black with dashes of red, white, and blue.
- Diameter: Any mole or growth larger than a pencil eraser should be examined.

Skin cancers have many different looks. Report any unusual blemishes, sores, or skin discolorations to your doctor.

Assess Your Health Risk

Checklist: What are your risks of developing skin cancer?

Your susceptibility to developing skin cancer is a combination of lifestyle and genetics. We all should protect ourselves from harmful solar rays. If you spend a great deal of time outdoors, you will experience more sun exposure; but a short vacation resulting in a severe sunburn can be just as harmful. If you have a genetic predisposition to develop skin cancer even more protection is advised. Each of the following situations involves risk. The higher your risk level, the more precautions you should take.

My eyes are blue or light green.
My hair is naturally blond, red, or light-colored.
My skin is very light in color.
I have many freckles on my body.
My parents or other close relatives have experienced skin cancer.
I have worked outside much of my life.
I seldom use sun protection lotions or wear protective clothing.
I work or play outdoors without protection on cloudy days.
I have taken vacations in sunny locations and have experienced several
moderate to severe sunburns.
I have used a tanning bed or booth.
I have sunbathed with the goal of obtaining a tan.

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Assess Your Child's Health Risk

Checklist for parents, grandparents, or child-care providers: Which of the following do you do to protect your child?

- ☐ I make sure the child has applied adequate lotion (SPF of at least 15) or is wearing clothing that will protect her from the sun's rays when playing or working in the sun on both sunny and cloudy days. ☐ I have taught the child to reapply lotion when needed.
- ☐ I have taught my child to never use a tanning bed.
- ☐ I have taught my child that there is no such thing as a healthy tan and have encouraged him to see a lighter look as fashionable.
- ☐ I never placed a child under the age of 6 months in the sun without appropriate protection.

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