

Skin Cancer

Introduction

The skin is the outermost covering of the body. If weighted by itself it would weigh almost 6 pounds. It is the largest organ in the body. The skin is composed of two main layers. The outermost layer is called the epidermis. It is made up of small scale-like cells called squamous cells. Directly underneath these cells are another type of cell called basal cells. The deepest part of the epidermis is made up of melanocytes. These cells contain a pigment called melanin. This pigment gives the skin its color. The innermost layer is called the dermis. It contains blood vessels, hair follicles, and glands. The skin plays many important roles for the body. It helps regulate the body's temperature. It protects it from injury, heat, light, and infection. The skin also stores fat and water, and produces vitamin D.

Cancer

The body is composed of very small cells. Throughout one's life, these cells grow and die in a very predictable manner. Sometimes these cells begin to grow and divide in an uncontrolled manner. This abnormal cell growth is referred to as a tumor. If this tumor continues to grow in other parts of the body it is called a benign tumor, or non-cancerous cell growth. These types of tumors most often are not life threatening. If the tumor begins to grow in and destroy other parts of the body it is called a malignant tumor, or cancer. On occasion, this type can become life threatening. Cells contain hereditary or genetic components called chromosomes. These chromosomes control the growth and development of cells. Cancer always begins due to changes in the chromosomes. This can cause the cells to lose the ability to control their own growth. Sudden changes in the chromosomes can happen for a variety of reasons. Sometimes it is inherited from family. Other times it is a result of infections, drugs, chemical exposure, or other factors. In the case of skin cancer, it is related to exposure to the sun.

Skin Cancer

Each year, 1 million Americans discover that they have skin cancer. There are three main types of skin cancer: basal cell carcinoma, squamous cell carcinoma, and melanoma.

Basal cell carcinoma

More than 90% of all skin cancers in the United States are basal cell carcinomas. Carcinoma is cancer in the cells that line or cover an organ. It is a slow developing cancer that rarely spreads to other parts of the body. Until recently, those most often affected were older people, particularly men who had worked outdoors. New data reveal that the average age for contracting this type of cancer is steadily going down (getting younger). Men are at greater risk for this form of cancer than are women.

There are five warning signs for detecting basal cell carcinomas:

1. An open sore
2. Reddish patch
3. A shiny growth
4. A pink growth
5. A scar-like growth

Click for photos of each type:

<http://www.skincancer.org/basal/index.php>

To learn more about basal and squamous cell carcinomas please click here:

<http://www.nlm.nih.gov/medlineplus/tutorials/skincancer/oc189101.html>

Squamous cell carcinoma

This form of cancer can appear on any part of the body, although it is most common on areas exposed to the sun. Squamous cell carcinomas, if left untreated, can spread (metastasize) to other parts of the body. It is important to detect and treat skin cancer before it spreads to other areas of the body. Basal and Squamous cell carcinomas are sometimes referred to as non-melanoma skin cancers.

Click here for warning signs and photos:

<http://www.skincancer.org/squamous/index.php>

Melanoma

This type is the most serious form of skin cancer. Melanomas occur when the pigment cells in the skin, melanocytes, become malignant. Medical research has yet to determine the exact cause of melanoma. A doctor can determine what stage the cancer is in. Early stages, known as "in situ," Latin meaning in one site, or localized. Late stage, known as "invasive," means it has penetrated the deep layer of skin and may be traveling to other areas of the body. There are four basic types of melanomas.

The Four Basic Types

(this section comes directly from www.skincancer.org)

Melanomas fall into four basic categories. Three of them begin in situ and sometimes become invasive; the fourth is invasive from the start. It is helpful to recognize the names and be able to define the characteristics of each type.

Click here for photos (scroll to very bottom):

<http://www.skincancer.org/melanoma/index.php>

1. Superficial spreading melanoma is by far the most common type, accounting for about 70 percent of all cases. As you might expect, this melanoma travels along the top layer of the skin for a fairly long time before penetrating more deeply. The first sign is the appearance of a flat or slightly raised discolored patch that has irregular borders and is somewhat geometrical in form. The color varies, and you may see areas of tan, brown, black, red, blue, or white. Sometimes an older mole will change in these ways, or a new one will arise. The melanoma can be seen almost anywhere on the body, but is most likely to occur on the trunk in men, the legs in women, and the upper back in both. Most melanomas found in the young are of the superficial spreading type.
2. Lentigo maligna is similar to the superficial spreading type, as it also remains close to the skin surface for quite a while, and usually appears as a flat or mildly elevated mottled tan, brown, or dark brown discoloration. This type of in situ melanoma is found most often in the elderly, arising on chronically sun-exposed, damaged skin on the face, ears, arms, and upper trunk. Lentigo maligna is the most common form of melanoma in Hawaii. Lentigo maligna melanoma is the invasive form.
3. The third type of melanoma, acral lentiginous melanoma, also spreads superficially before penetrating more deeply. It is quite different from the others, though, as it usually appears as a black or brown discoloration under the nails or on the soles of the feet or palms of the hands. This type of melanoma is sometimes found in dark-skinned people. It is the most common melanoma in African-Americans and Asians, and the least common among Caucasians.
4. Unlike the other three types, nodular melanoma, is usually invasive at the time it is first diagnosed. The malignancy is recognized when it becomes a bump. The color is most often black, but occasionally is blue, gray, white, brown, tan, red, or skin tone. The most frequent locations are the trunk, legs, and arms, mainly of elderly people, as well as the scalp in men. This is the most aggressive of the melanomas, and is found in 10 to 15 percent of cases.

To learn more about melanoma please click here:

<http://www.nlm.nih.gov/medlineplus/tutorials/melanoma/oc199101.html>

Prevention

The biggest way to try and prevent skin cancer is to limit your time spent in the sun. If being outdoors is a requirement, then proper prevention should be taken to limit the sun's harmful effects to your skin. Listed below are a few ideas to help protect you against the damaging effects of the sun:

1. Wear sunscreen with at least an SPF of 15 or higher. SPF stands for sun protective factor. It measures how long a product will protect against skin reddening from UVB (short wave radiation given off by the sun), compared to how long it would take for the skin to redden without protection. As an example, it takes your skin 20 minutes to redden on its own without protection. If sunscreen, with an SPF of 15 is applied to the skin, it would take 15 times longer (20x15) or 5 hours for your skin to redden. Sunscreen should be applied liberally to all parts of the body, especially focusing on those parts exposed to the sun. Make sure the sunscreen matches the activities that you are performing. Sweating and water can cause the sunscreen to wash off, so reapply directly after a workout or swimming. Different products are available for different activities.
2. Avoid being outdoors during the brightest times of the day. This is between 10 am and 4 pm. Plan activities that can be done indoors or in shady places during this time. These hours are when the sun's damaging rays are at their peak.
3. Never seek a sun tan, or sunbathe.
4. Dress in clothing that will protect you against the sun. Wear long brimmed hats, long sleeves, and pants. Click here for additional ideas on how and what to wear: <http://www.skincancer.org/prevention/dress.php>
5. Teach your children sun safety. Problems related to adult skin cancer begin with childhood.
6. Avoid using artificial tanning salons. The radiation from these machines is much more harmful than the sun's rays.
7. Examine your skin from head to toe at least once every three months.
8. Outdoor Workers click here: <http://www.skincancer.org/050103.pdf>

The Skin Cancer Foundation Seal of Recommendation

(this section comes directly from www.skincancer.org)

If you want to be assured that a sunscreen product is a good one, look for The Skin Cancer Foundation's Seal of Recommendation on the label. Sunscreen products that have been awarded the Seal of Recommendation have met stringent criteria for safety and effectiveness.



The Foundation's Photobiology Committee, comprised of physicians expert in the effects of solar radiation, determines whether a sunscreen satisfies these criteria. To earn the Seal, a manufacturer must prove that its product sufficiently and safely "aids in the prevention of sun-induced damage to the skin."

The requirements include:

- A sun protection factor (SPF) of 15 or greater
- Validation of the SPF number by testing on 20 people
- Acceptable test results for phototoxic reactions and contact irritation
- Substantiation for any claims that a sunscreen is water- or sweat-resistant

The Seal is also granted to products such as sunglasses and window glass film, sun-protective clothing and laundry products that provide UV protection for fabrics. More than 230 sun-protection products carry the Seal. It may appear on product labels, packaging and advertising. Click here for a list of products bearing the Seal.

Helpful Links:

For further information about children, older adults, tanning beds, sun safety, and frequently asked questions please visit the skin cancer foundation at <http://www.skincancer.org/index.php>

American Cancer Society

<http://www.cancer.org/docroot/home/index.asp>

Medline Plus Health Information A service of the U.S. National Library of Medicine and the National Institutes of Health.

<http://www.nlm.nih.gov/medlineplus/skincancer.html>

Melanoma the ABC's

<http://www.melanoma.com/melanoma/index.jsp>

National Cancer Institute

<http://www.nci.nih.gov/>

National Center for Chronic Disease Prevention and Health Promotion

<http://www.cdc.gov/cancer/nscpep/skin.htm>

The Skin Cancer Resources Directory

<http://www.cancerindex.org/clinks2s.htm>