



Sun Exposure and Skin Cancer

Many people love the warm sun. The sun's rays make us feel good, and in the short term, make us look good. But our love affair isn't a two way street: Exposure to sun causes most of the wrinkles and age spots on our faces.

We often associate a glowing complexion with good health, but skin color obtained from being in the sun, or in a tanning booth, actually accelerates the effects of aging and increases your risk for developing skin cancer.

Sun exposure causes most of the skin changes that we think of as a normal part of aging. Over time, the sun's ultraviolet (UV) light damages the fibers in the skin called elastin. When these fibers breakdown, the skin begins to sag, stretch, and lose its ability to go back into place after stretching. The skin also bruises and tears more easily -- taking longer to heal. So while sun damage to the skin may not be apparent when you're young, it will definitely show later in life.

How Does the Sun Change My Skin?

Exposure to the sun causes:

- Pre-cancerous (actinic keratosis) and cancerous (basal cell carcinoma, squamous cell carcinoma and melanoma) skin lesions - caused by loss of the skin's immune function
- Benign tumors
- Fine and coarse wrinkles, freckles
- Discolored areas of the skin, called mottled pigmentation;
- Sallowness -- a yellow discoloration of the skin;
- Telangiectasias -- the dilation of small blood vessels under the skin;
- Elastosis -- the destruction of the elastic tissue causing lines and wrinkles.

What Causes Skin Cancer?

Skin cancer is the most prevalent form of all cancers in the U.S. and the number of cases continues to rise. It is the uncontrolled growth of abnormal skin cells. This rapid growth results in tumors, which are either benign (noncancerous) or malignant (cancerous).

There are three main types of skin cancer: basal cell carcinoma, squamous cell carcinoma and melanoma. Basal cell and squamous cell cancers are less serious types and make up 95% of all skin cancers. Also referred to as non-melanoma skin cancers, they are highly curable when treated early. Melanoma, made up of abnormal skin pigment cells called melanocytes, is the most serious form of skin cancer and causes 75% of all skin cancer deaths. Left untreated, it can spread to other organs and is difficult to control.

Ultraviolet (UV) radiation from the sun is the number one cause of skin cancer, but UV light from tanning beds is just as harmful. Exposure to sunlight during the winter months puts you at the same risk as exposure during the summertime.

Cumulative sun exposure causes mainly basal cell and squamous cell skin cancer, while episodes of severe sunburns, usually before age 18, can cause melanoma later in life. Other less common causes are repeated X-ray exposure and occupational exposure to certain chemicals.

Who Is at Risk for Skin Cancer?

Although anyone can get skin cancer, the risk is greatest for people who have fair or freckled skin that burns easily, light eyes and blond or red hair. Darker skinned individuals are also susceptible to all types of skin cancer, although their risk is substantially lower.

Aside from complexion, other risk factors include having a family history or personal history of skin cancer, having an outdoor job and living in a sunny climate. A history of severe sunburns and an abundance of large and irregularly-shaped moles are risk factors unique to melanoma.

What Are the Symptoms of Skin Cancer?

The most common warning sign of skin cancer is a change on the skin, typically a new mole or skin lesion or a change in an existing mole.

- Basal cell carcinoma may appear as a small, smooth, pearly or waxy bump on the face ears and neck; or as a flat, pink/red- or brown-colored lesion on the trunk or arms and legs.
- Squamous cell carcinoma can appear as a firm, red nodule, or as a rough, scaly flat lesion that may itch, bleed and become crusty. Both basal cell and squamous cell cancers mainly occur on areas of the skin frequently exposed to the sun, but can occur anywhere.
- Melanoma usually appears as a pigmented patch or bump. It may resemble a normal mole, but usually has a more irregular appearance.
- When looking for melanoma, think of the ABCD rule that tells you the signs to watch for:
 - Asymmetry - the shape of one half doesn't match the other
 - Border - edges are ragged or blurred
 - Color - uneven shades of brown, black, tan, red, white or blue
 - Diameter - A significant change in size (greater than 6mm)

How is Skin Cancer Diagnosed?

Skin cancer is diagnosed only by performing a biopsy. This involves taking a sample of the tissue, which is then placed under a microscope and examined by a dermatopathologist, or doctor who specializes in examining skin cells. Sometimes a biopsy can remove all of the cancer tissue and no further treatment is needed.

How is Skin Cancer Treated?

Treatment of skin cancer is individualized and is determined by the type of skin cancer, its size and location and the patient's preference. Standard treatments for non-melanoma skin cancer (basal cell or squamous cell carcinomas) include:

- Mohs surgery (for high-risk non-melanoma skin cancers) – excision of cancer and some extra tissue
- Electrodesiccation and curettage – physically scraping away the skin cancer cells followed by electrosurgery
- Cryosurgery or freezing
- Laser therapy
- Drugs (chemotherapy, retinoids)

Standard treatments for melanoma skin cancer include:

- Wide surgical excision
- Sentinel lymph node mapping (for deeper lesions) – to determine if the melanoma has spread to local lymph nodes
- Drugs (chemotherapy, biological response modifiers)
- Radiation therapy
- New methods in clinical trials are sometimes used to treat skin cancer.

How Can I Help Prevent Skin Cancer?

Nothing can completely undo sun damage, although the skin can sometimes repair itself. So, it's never too late to begin protecting yourself from the sun. Your skin does change with age -- for example, you sweat less and your skin can take longer to heal, but you can delay these changes by staying out of the sun. Follow these tips to help prevent skin cancer:

- Apply sunscreen with a sun protection factor (SPF) of 15 or greater 30 minutes before sun exposure and then every few hours thereafter.
- Select cosmetic products and contact lenses that offer UV protection.
- Wear sunglasses with total UV protection.
- Avoid direct sun exposure as much as possible during peak UV radiation hours between 10:00 a.m. and 3:00 p.m.
- Perform skin self-exams regularly to become familiar with existing growths and to notice any changes or new growths.
- Eighty percent of a person's lifetime sun exposure is acquired before age 18. As a parent, be a good role model and foster skin cancer prevention habits in your child.