Squamous cell carcinoma is the second most common type of skin cancer. It arises from plate-like cell layer in the epidermis and is due to extensive sun exposure. The majority occur in fair-skinned and elderly people. Squamous cell carcinoma can metastasize if is not treated.

Squamous cell carcinoma is typically found on areas often exposed to the sun, such as the scalp, face and neck, however, it can develop on other parts of the body including the mucous membrane and the genitalia.

SCCs often look like scaly red patches, open sores, warts or elevated growths with a central depression; they may crust or bleed. They can become disfiguring and sometimes deadly if allowed to grow. More than 1 million cases of squamous cell carcinoma are diagnosed each year in the U.S., which translates to about 115 cases diagnosed every hour. Incidence has increased up to 200 percent in the past three decades in the U.S., and more than 15,000 Americans die each year from the disease.

SCCs may occur on all areas of the body, including the mucous membranes and genitals, but are most common in areas frequently exposed to the sun, such as the rim of the ear, lower lip, face, balding scalp, neck, hands, arms and legs. The skin in these areas often reveals telltale signs of sun damage, including wrinkles, pigment changes, freckles, “age spots,” loss of elasticity and broken blood vessels.

Although researchers know what causes many cases of squamous cell carcinoma – most notably, excessive exposure to ultraviolet radiation – studies are still underway to determine how this type of cancer develops in parts of the body that are seldom or never exposed to sunlight. Past studies show that nearly 95 percent of all non-melanoma skin cancers are the direct result of DNA changes that occur in the skin after cells are damaged by UVA or UVB rays, and scientists continue to investigate the possible causes of the remaining 5 percent.

Through ongoing studies, researchers are also investigating the exact changes that occur within the body after squamous cells are damaged by UV exposure. Currently, with regard to what causes squamous cell carcinoma, medical professionals know that:

* Healthy skin regenerates itself every few days. As old cells die, they are pushed to the surface of the skin by the new cells developing underneath. The old cells are then sloughed off.
* When squamous cells sustain DNA damage, the cells aren’t able to regulate their own growth as they normally should. Abnormal cells can accumulate without dying off and create bumps or sores on the skin.
* Although squamous cell carcinomas are slow to spread, they can eventually grow into nearby tissues, bones or lymph nodes if not properly treated.

Squamous cell carcinoma shares many risk factors with other types of skin cancer. Extensive UV exposure, for instance, is one of the most well-established risk factors for all forms of skin cancer, including squamous cell carcinomas, basal cell carcinomas and melanomas. Repeated exposure to ultraviolet rays – whether from the sun or an indoor tanning booth - can significantly damage the skin, potentially causing healthy cells to become cancerous. And, while a history of UV exposure does not necessarily mean that an individual will develop cancer, it does heighten the importance of routine skin cancer screenings.

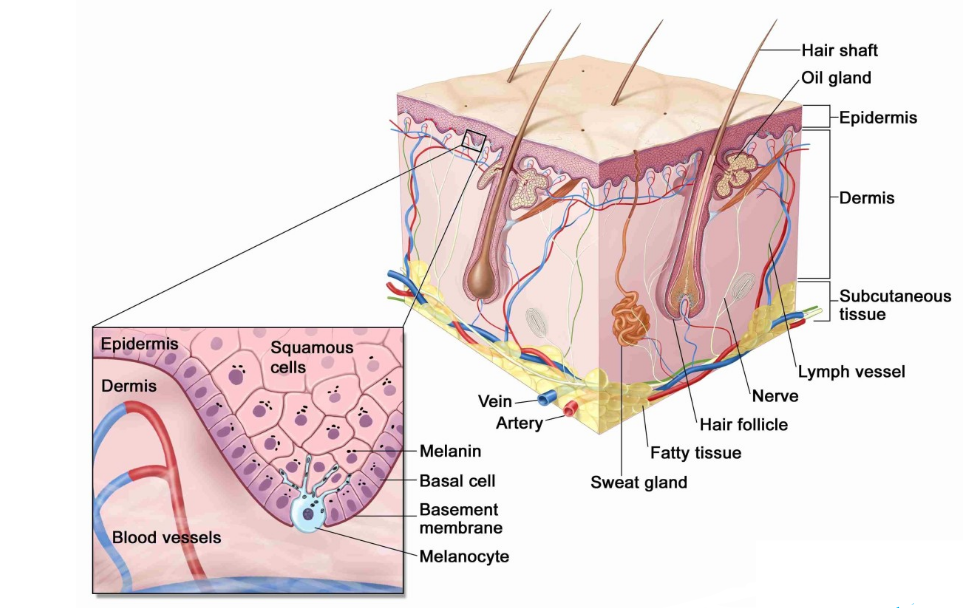
Many other risk factors associated with squamous cell carcinoma have a direct link to UV exposure. For instance:

* People with fair or freckled skin are especially susceptible to sunburns, which can increase their likelihood of sustaining ultraviolet light-induced cell damage.
* People with an inherited condition known as xeroderma pigmentosum have an extreme sensitivity to sunlight are also very susceptible to cellular damage caused by UVA and UVB rays.
* Males are nearly three times more likely to develop squamous cell carcinoma than females, which may be partially attributed to their comparatively higher tendency to spend time outdoors without adequate sun protection.
* Older adults are more frequently diagnosed with squamous cell carcinoma than younger individuals, presumably due to the cumulative effects of UV exposure over a person’s lifetime.
* People with psoriasis and other inflammatory skin diseases often receive ultraviolet light-based treatments, which can increase their risk of developing skin cancer in the future.
* **Fair skin.** Anyone, regardless of skin color, can get squamous cell carcinoma of the skin. However, having less pigment (melanin) in your skin provides less protection from damaging UV radiation.

If you have blond or red hair and light-colored eyes and you freckle or sunburn easily, you're much more likely to develop skin cancer than is a person with darker skin.

* **Excessive sun exposure.** Being exposed to UV light from the sun increases your risk of squamous cell carcinoma of the skin. Spending lots of time in the sun — particularly if you don't cover your skin with clothing or sunblock — increases your risk of squamous cell carcinoma of the skin even more.
* **Use of tanning beds.** People who use indoor tanning beds have an increased risk of squamous cell carcinoma of the skin.
* **A history of sunburns.** Having had one or more blistering sunburns as a child or teenager increases your risk of developing squamous cell carcinoma of the skin as an adult. Sunburns in adulthood also are a risk factor.
* **A personal history of precancerous skin lesions.** Having a precancerous skin lesion, such as actinic keratosis or Bowen's disease, increases your risk of squamous cell carcinoma of the skin.
* **A personal history of skin cancer.** If you've had squamous cell carcinoma of the skin once, you're much more likely to develop it again.
* **Weakened immune system.** People with weakened immune systems have an increased risk of skin cancer. This includes people who have leukemia or lymphoma and those who take medications that suppress the immune system, such as those who have undergone organ transplants.
* **Rare genetic disorder.** People with xeroderma pigmentosum, which causes an extreme sensitivity to sunlight, have a greatly increased risk of developing skin cancer.

Additional risk factors include exposure to large amounts of arsenic, coal tar or other carcinogenic chemicals; smoking; chronic ulcers and a history of radiation therapy for previous cancers. Also, a person who has already been diagnosed with skin cancer has an elevated risk of developing a second skin cancer during his or her lifetime.



**Complications**

Untreated squamous cell carcinoma of the skin can destroy nearby healthy tissue, spread to the lymph nodes or other organs, and may be fatal, although this is uncommon.

The risk of aggressive squamous cell carcinoma of the skin may be increased in cases where the cancer:

* Is particularly large or deep
* Involves the mucous membranes, such as the lips
* Occurs in a person with a weakened immune system, such as someone who takes anti-rejection medications after an organ transplant or someone who has chronic leukemia

**Prevention**

Most squamous cell carcinomas of the skin can be prevented. To protect yourself:

* **Avoid the sun during the middle of the day.** For many people in North America, the sun's rays are strongest between about 10 a.m. and 4 p.m. Schedule outdoor activities for other times of the day, even during winter or when the sky is cloudy.
* **Wear sunscreen year-round.** Use a broad-spectrum sunscreen with an SPF of at least 15. Apply sunscreen generously, and reapply every two hours — or more often if you're swimming or perspiring. Use a generous amount of sunscreen on all exposed skin, including your lips, the tips of your ears, and the backs of your hands and neck.
* **Wear protective clothing.** Cover your skin with dark, tightly woven clothing that covers your arms and legs, and a broad-brimmed hat, which provides more protection than does a baseball cap or visor.

Some companies also sell protective clothing. A dermatologist can recommend an appropriate brand. Don't forget sunglasses. Look for those that block both types of UV radiation — UVA and UVB rays.

* **Avoid tanning beds.** Tanning beds emit UV rays and can increase your risk of skin cancer.
* **Check your skin regularly and report changes to your doctor.** Examine your skin often for new skin growths or changes in existing moles, freckles, bumps and birthmarks. With the help of mirrors, check your face, neck, ears and scalp.

Examine your chest and trunk and the tops and undersides of your arms and hands. Examine both the front and back of your legs and your feet, including the soles and the spaces between your toes. Also check your genital area and between your buttocks.

**Signs and Symptoms of Squamous Cell Carcinoma**

Skin cancers often do not cause bothersome symptoms until they have grown quite large. Then they may itch, bleed, or even hurt. But typically they can be seen or felt long before they reach this point.

Squamous cell carcinoma are usually easy to find early, during a thorough skin examination by a dermatologist. Regular examination of the skin for any new or unusual growths, or changes in the size, shape or color of an existing spot, is key to finding and treating these cancers early. If you believe you have found symptoms of squamous cell carcinoma or are concerned about a suspicious-looking patch of skin, you should discuss it with your primary care physician or a dermatologist (skin doctor).

General warning signs of skin cancer include a new spot or growth that increases in size, or a sore that doesn’t heal within two months. In addition, common signs of squamous cell carcinomas include: A growing lump with a rough, scaly or crusty surface Slow-growing flat reddish patch Squamous cell carcinomas may also develop as a flat area that does not look much different from normal skin, so it is important to discuss any changes with your doctor. These cancers are most frequently found in areas exposed to the sun, such as the face, ear, lip, neck or back of the hands, but they can also develop in other areas, such as the genital region or in scars or skin sores. If you see any spots or growths with these features, or anything else unusual, it is important to discuss what you found with your doctor. The earlier your squamous cell carcinoma symptoms are found, the easier the disease is to treat and the better the prognosis.

Squamous cell cancers tend to occur on sun-exposed areas of the body such as the face, ear, neck, lip, and back of the hands. Less often, they form in the skin of the genital area. They can also develop in scars or skin sores elsewhere.

These cancers can appear as:

* Rough or scaly red patches, which might crust or bleed
* Raised growths or lumps, sometimes with a lower area in the center
* Open sores (which may have oozing or crusted areas) that don’t heal, or that heal and then come back
* Wart-like growths

Other types of skin cancers can also look different from the descriptions above. This is why it’s important to have any new or changing skin growths, sores that don’t heal, or other areas that concern you checked by your doctor.

How is squamous cell carcinoma diagnosed?

The following procedures may be used to detect and diagnose non-melanoma skin cancers.

**Skin examination:** A doctor or nurse checks the skin for bumps or spots that look abnormal in color, size, shape or texture

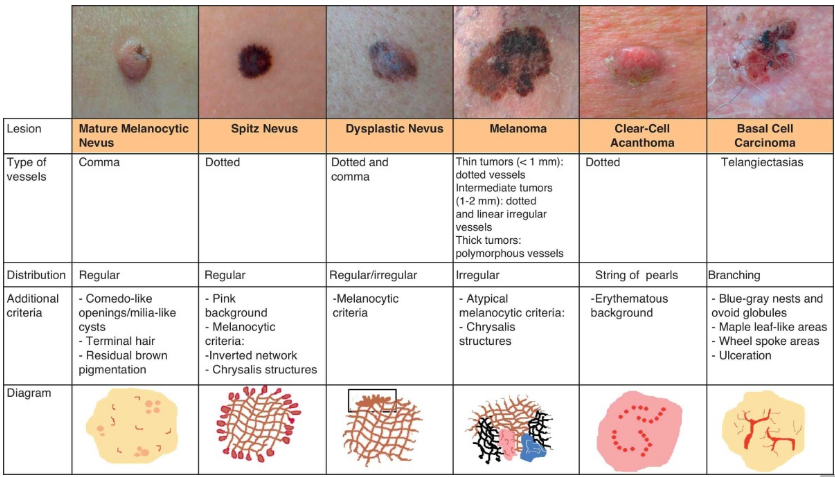
**Biopsy:** All or part of the abnormal-looking growth is removed from the skin and viewed under a microscope by a pathologist to see if cancer cells are present. There are 3 main types of skin biopsies:

**Shave biopsy**: A sterile razor blade is used to ''shave off'' the abnormal-looking growth

**Punch biopsy:** A special instrument called a punch or a trephine is used to remove a circle of tissue from the abnormal-looking growth

**Excisional biopsy:** A scalpel is used to remove the entire growth

**Types of Squamous Cell Carcinoma**

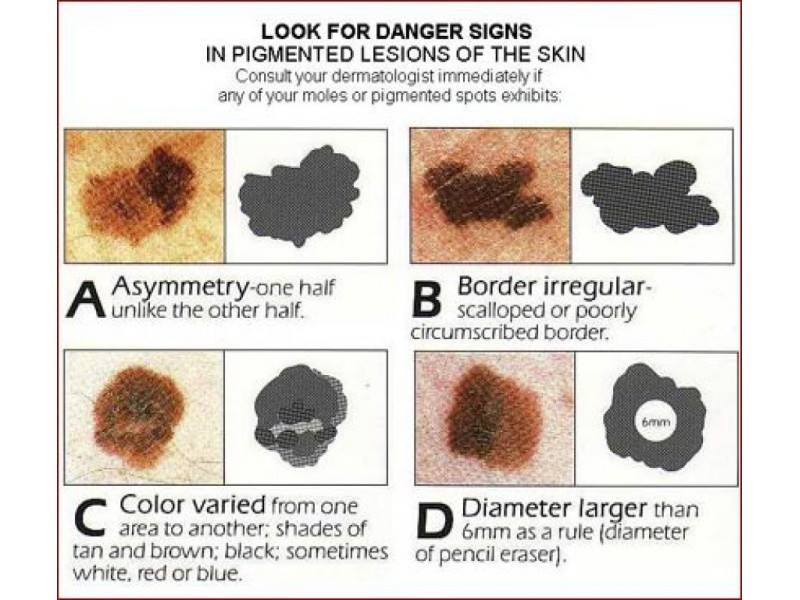


There are several types of squamous cell carcinoma. Some are more likely to spread than others, but in general, most share similar characteristics. The primary difference between each subtype is histological (related to the unique characteristics of the cancerous cells).

To determine which type of squamous cell carcinoma a patient has, a pathologist will examine a tissue sample underneath a microscope. By identifying the type of cells that are present in a lesion, an oncologist can tailor a patient’s treatment plan to achieve the best possible outcome and quality of life.

**The primary types of squamous cell carcinoma are:**

* Adenoid/pseudoglandular squamous cell carcinoma
* Intraepidermal squamous cell carcinoma
* Large cell keratinizing squamous cell carcinoma
* Large cell non-keratinizing squamous cell carcinoma
* Lymphoepithelial carcinoma
* Papillary squamous cell carcinoma
* Papillary thyroid carcinoma
* Small cell keratinizing squamous cell carcinoma
* Spindle cell squamous cell carcinoma
* Verrucous squamous-cell carcinoma



NORMAL MOLE

These are common small brown spots or growths on the skin that appear in the first few decades of life in almost everyone. They can be either flat, or elevated and are generally round and regularly shaped. Many are caused by sun exposure.



DYSPLASTIC NEVI (Atypical Moles)

These are unusual benign moles that may resemble melanoma. People who have are at increased risk of developing single or multiple melanomas. The higher the number of these moles someone has, the higher the risk. Those who have 10 or more have 12 times the risk of developing melanoma compared to the general population.



SQUAMOUS CELL

More than 250,000 new cases of squamous cell carcinoma are diagnosed every year. This form of skin cancer arises in the squamous cells that make up most of the skin’s upper layers (epidermis). Squamous cell carcinoma are most common in areas frequently exposed to the sun, such as the lower lip, face, bald scalp, neck, hands, arms and legs. Anyone with a history of substantial sun exposure is at increased risk.



MELANOMA

This is one of the deadliest form of skin cancer, most often appears as an asymmetrical, irregularly bordered, multicolored or tan/brown spot or growth that continues to increase in size over time. It may begin as a flat spot and become more elevated. In rare instances, it may not be pigmented.



ACTINIC KERATOSIS

More Than Ten Million: This figure is generally accepted as the best current estimate of the number of Americans with actinic keratosis. People with blond or red hair, and blue, green or gray eyes have a high likelihood of developing one or more these pre-cancers if they spend time in the sun and live long enough. Location makes a difference: The closer to the equator you live; the more likely you are to have actinic keratosis.



BASAL CELL CARCINOMA

Basal cell carcinoma is the most common form of skin cancer, affecting approximately one million Americans each year. More than one out of every three new cancers are skin cancers, and the vast majority are basal cell carcinomas. Basal cell carcinomas are easily treated in their early stages. The larger the tumor has grown, however, the more extensive the treatment needed.

