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About Basal and Squamous Cell Skin Cancer

Get an overview of basal and squamous cell skin cancer and the latest key statistics in the US.

Overview

If you have been diagnosed with basal or squamous cell skin cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Are Basal and Squamous Cell Skin Cancers?](#)

Research and Statistics

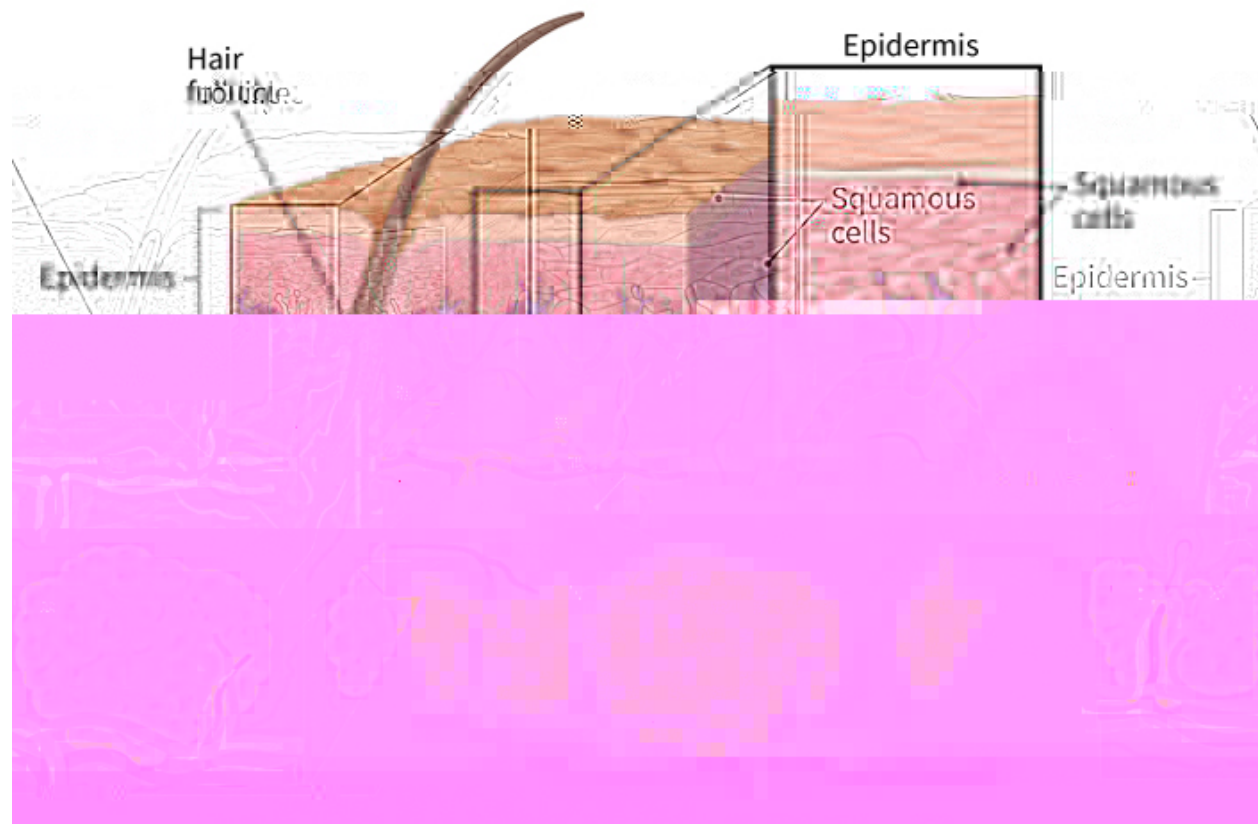
See the latest estimates for new cases of basal and squamous cell skin cancer and deaths in the US and what research is currently being done.

- [Key Statistics for Basal and Squamous Cell Skin Cancers](#)
- [What's New in Basal and Squamous Cell Skin Cancer Research?](#)

What Are Basal and Squamous Cell Skin Cancers?

Basal and squamous cell skin cancers are the most common types of skin cancer. These cancers are often related to sun exposure.

- [Where do skin cancers start?](#)
[Basal cell carcinoma](#)



[What Is Cancer?](#) ¹

Cancer starts when cells in the body begin to grow out of control. Cells in nearly any part of the body can become cancer cells. Learn more here.

[Anatomy Gallery: Skin](#) ²

Explore our 3D interactive tour of the skin system.

Basal cell carcinoma

Basal cell carcinoma (BCC, also ___dd.d

If not removed completely, BCC can come back (recur) in the same place on the skin. People who have had basal cell skin cancers are also more likely to get new ones in other places.

Squamous cell carcinoma

About 2 out of 10 skin cancers are squamous cell carcinomas (SCCs, also called **squamous cell skin cancers, cutaneous squamous cell cancers, or just squamous cell cancers**). These cancers start in the flat cells in the upper (outer) part of the epidermis.

SCCs commonly appear on sun-exposed areas of the body such as the face, ears, neck, lips, arms, and backs of the hands. They can also develop in scars or chronic skin sores elsewhere. They sometimes start in **actinic keratoses** (described below). Less often, they form in the skin of the genital area.

Squamous cell cancers can usually be removed completely (or treated in other ways), although they are much more likely than basal cell cancers to grow into deeper layers of skin and spread to other parts of the body.

Pre-cancerous and other skin conditions related to squamous cell carcinoma

Actinic keratosis (solar keratosis)

Actinic keratosis (AK), also known as **solar keratosis**, is a pre-cancerous skin condition caused by too much exposure to the sun. AKs are usually small (less than 1/4 inch across), rough or scaly spots that may be pink-red or flesh-colored. Usually they start on the face, ears, backs of the hands, and arms of middle-aged or older people with fair skin, although they can occur on other sun-exposed areas. People who have them usually develop more than one.

AKs tend to grow slowly and usually do not cause any symptoms (although some might be itchy or sore). They sometimes go away on their own, but they may come back.

A small percentage of AKs may turn into squamous cell skin cancers. Most AKs do not become cancer, but it can be hard sometimes to tell them apart from true skin cancers, so doctors often recommend [treating](#)³ them. If they are not treated, you and your doctor should check them regularly for changes that might be signs of skin cancer.

Squamous cell carcinoma in situ (Bowen disease)

Squamous cell carcinoma in situ, also called **Bowen disease**, is the earliest form of squamous cell skin cancer. “In situ” means that the cells of these cancers are still only in the epidermis (the upper layer of the skin) and have not invaded into deeper layers.

Bowen disease appears as reddish patches. Compared with AKs, Bowen disease patches tend to be larger, redder, scaly, and sometimes crusted. Like AK, Bowen disease usually doesn't cause symptoms, although it might be itchy or sore.

Like most other skin cancers (and AKs), these patches most often appear in sun-exposed areas. Bowen disease can also occur in the skin of the anal and genital areas (where it is known as **erythroplasia of Queyrat** or **Bowenoid papulosis**). This is often related to sexually transmitted infection with human papillomaviruses (HPVs), the viruses that can also cause genital warts.

Bowen disease can sometimes progress to an invasive squamous cell skin cancer, so doctors usually recommend [treating](#)⁴ it. People who have these are also at higher risk for other skin cancers, so close follow-up with a doctor is important.

Other types of skin cancer are much less common and are treated differently. These include:

- [Merkel cell carcinoma](#)⁶
 - [Kaposi sarcoma](#)⁷
 - [Cutaneous \(skin\) lymphoma](#)⁸
- Skin adnexal tumors**



Cell Skin Cancers

Cancers of the skin (most of which are basal and squamous cell skin cancers) are by far the most common of all types of cancer in the United States. According to one estimate, about 5.4 million basal and squamous cell skin cancers are diagnosed each year in the US (occurring in about 3.3 million people, as some people have more than one). About 8 out of 10 of these are basal cell cancers. Squamous cell cancers occur less often.

The number of these cancers has been increasing for many years. This is probably from a combination of better skin cancer detection, people getting more sun exposure, and people living longer.

Although basal and squamous cell skin cancers are common, deaths from these cancers are not. For the US, estimates have ranged from about 2,000 to about 8,000 people each year (mostly from squamous cell skin cancer).

Lewis KG, Weinstock MA. Trends in nonmelanoma skin cancer mortality rates in the United States, 1969 through 2000. *J Invest Dermatol.* 2007;127:2323-2327.

Xu YG, Aylward JL, Swanson AM, et al. Chapter 67: Nonmelanoma Skin Cancers. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds.

What's New in Basal and Squamous Cell Skin Cancer Research?

and the serious problems they can cause is to educate people about [skin cancer risk factors and prevention](#)¹. It's important for health care professionals and skin cancer survivors to remind others about the dangers of too much [UV exposure](#)² (both from the sun and from man-made sources such as tanning beds) and about the ways you can [protect your skin from UV rays](#)³.

Skin cancer can often be [found early](#)⁴, when it is most likely to be cured. Monthly skin self-exams and awareness of the [warning signs of skin cancer](#)⁵ may be helpful in finding most skin cancer when they are at an early, curable stage.

The American Academy of Dermatology (AAD) sponsors annual free skin cancer screenings throughout the country. Many local American Cancer Society offices work closely with AAD to provide volunteers for registration, coordination, and education efforts related to these free screenings. Look for information in your area about these screenings or contact the [American Academy of Dermatology](#)⁶ for more information.

Preventing genital skin cancers

Squamous cell cancers that start in the genital region account for a large proportion of the deaths from this type of skin cancer. Many of these cancers are related to infection with certain types of [human papillomavirus \(HPV\)](#)⁷, which can be spread through sexual contact. Limiting sexual partners and using safer sex practices such as wearing condoms may therefore help lower the risk of some of these cancers.

Vaccines are available to help protect against infection from some types of HPV that can cause certain cancers. These vaccines are recommended in certain age groups to help lower the risk of getting some types of cancer, and they may also lower the risk of some squamous cell skin cancers. To learn more, see [HPV Vaccines](#)⁸.

Chemoprevention

Chemoprevention is the use of drugs to reduce cancer risk. This is likely to be more useful for people at [high risk of skin cancers](#)⁹, such as those with certain congenital conditions (basal cell nevus syndrome (Gorlin syndrome), xeroderma pigmentosum, etc.), a history of skin cancer, or those with weakened immune systems (such as people who've had organ transplants), rather than for people at average risk of skin cancer.

Some of the most widely studied drugs so far are the **retinoids**, which are drugs related to vitamin A. They have shown some promise in reducing the risk of squamous cell cancers, but they can have side effects, including possibly causing birth defects. For this reason, they are not widely used at this time, except in some people at very high

risk. Further studies of retinoids are under way.

Nicotinamide, a form of vitamin B3, has been shown to lower the risk of basal and squamous cell cancers in people at high risk, and with very few side effects, although it hasn't been studied extensively in people with weakened immune systems.

Optical biopsies

Some newer approaches to diagnosing skin cancer don't require the removal of a skin sample. For example, in **reflectance confocal microscopy (RCM)**, a low-powered laser is aimed at the suspicious area. The light from the laser enters the upper layers of the skin and reflects off the structures there. A special microscope detects the light as it bounces back, which is used to create a detailed, three-dimensional image of the area. This can help the doctor determine if the area needs to be removed. RCM is now available in some centers and will likely become more common in the coming years.

Testing for biomarkers

While it's not common for basal or squamous cell cancers to spread to other parts of the body, these cancers can be hard to treat once they do. Doctors are now looking for better ways to determine which skin cancers (especially squamous cell cancers) are likely to grow and spread more quickly, and therefore might require more intense treatment.

One way to do this is to test the cancer cells for certain **biomarkers**, which are gene or protein changes inside the cells that can help tell if a cancer is more likely to grow and spread. Some research is looking at the activity of many genes at once (known as **gene expression profiling**) to see if these patterns can help predict risk. Other studies are looking at single biomarkers. For example, some research has shown that squamous cell skin cancers seem to be more likely to spread if the cells have higher levels of the PD-L1 protein, or lower levels of the INPP5A protein.

More research is needed before testing tumors for biomarkers becomes a standard part of cancer care.

Most basal and squamous cell skin cancers are found and treated at an early stage, when they are likely to be cured, but some can grow into other areas or spread to other parts of the body. These cancers can often be hard to treat with therapies such as [radiation](#)¹⁴ and [chemotherapy](#)¹⁵.

Squamous cell cancers: Several studies are testing newer **targeted drugs** for advanced squamous cell cancers. For example, cells from these cancers often have too much of the EGFR protein on their surfaces, which can help them grow. [Drugs that target this protein](#)¹⁶, such as cetuximab (Erbix), are now being tested in clinical trials, both alone and combined with other treatments.

Immunotherapy is another newer approach to treating some advanced squamous cell cancers. Drugs called [immune checkpoint inhibitors](#)¹⁷ are now coming into use as an option to treat some of these cancers.

Basal cell cancers: It's very rare for basal cell cancers to reach an advanced stage, but when they do, these cancers can be hard to treat. Vismodegib and sonidegib, drugs that target the hedgehog signaling pathway in cells, may help some people (see [Targeted Therapy for Basal and Squamous Cell Skin Cancers](#)¹⁸). Other drugs that target this pathway are now being studied as well.

Immunotherapy drugs called [immune checkpoint inhibitors](#)¹⁹ are now an option to treat some of these cancers as well.

[Skin Cancer ACS Research Highlights](#)²⁰

See latest examples of how the Society conducts & funds research to help prevent, find, diagnose, treat, and live with skin cancers.

Hyperlinks

1. www.cancer.org/cancer/types/basal-and-squamous-cell-skin-cancer/causes-risks-prevention.html
2. www.cancer.org/cancer/risk-prevention/sun-and-uv/uv-radiation.html
3. www.cancer.org/cancer/risk-prevention/sun-and-uv/uv-protection.html
4. www.cancer.org/cancer/types/basal-and-squamous-cell-skin-cancer/detection-diagnosis-staging/detection.html
5. www.cancer.org/cancer/types/basal-and-squamous-cell-skin-cancer/detection-diagnosis-staging/signs-and-symptoms.html

6. www.aad.org/public/public-health/skin-cancer-screenings
 7. www.cancer.org/cancer/risk-prevention/hpv.html
 8. www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccines.html
 9. www.cancer.org/cancer/types/basal-and-squamous-cell-skin-cancer/causes-risks-prevention/risk-factors.html
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 11. [/cancer/types/basal-and-squamous-cell-skin-cancer/treating/surgery.html](http://cancer/types/basal-and-squamous-cell-skin-cancer/treating/surgery.html)
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 14. [/cancer/types/basal-and-squamous-cell-skin-cancer/treating/radiation-therapy.html](http://cancer/types/basal-and-squamous-cell-skin-cancer/treating/radiation-therapy.html)
 15. [/cancer/types/basal-and-squamous-cell-skin-cancer/treating/systemic-chemotherapy.html](http://cancer/types/basal-and-squamous-cell-skin-cancer/treating/systemic-chemotherapy.html)
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