CONDITION

Basal cell carcinoma

Learn how basal cell carcinoma appears, what causes it, how doctors diagnose and treat it, and which changes need prompt medical attention.

WHAT IT IS
Type of skin cancer

BODY SYSTEM
Skin

MAIN SYMPTOMS
Pearly bump, nonhealing sore, bleeding or crusting spot, flat scaly patch

WHAT CAUSES IT
Genetic damage, mainly UV radiation

HOW IT IS DIAGNOSED
Biopsy with microscopic tissue examination

MAIN TREATMENT
Surgery

CAN IT BE CURED?
Sometimes - treatment is often highly effective

IS IT AN EMERGENCY?
Sometimes - bleeding does not stop

LONG-TERM OUTLOOK
Usually slow-growing but can recur and damage nearby tissues

Overview

Basal cell carcinoma, often called BCC, is a type of skin cancer. It begins in basal cells, which are found in the lower part of the skin's outer layer. These cells normally help produce new skin cells.

BCC is the most common type of skin cancer. It usually grows slowly and rarely spreads to distant parts of the body. However, it can grow into nearby skin, cartilage, bone, nerves, or other tissues if it is not treated. A tumor near an eye, ear, nose, or lip can cause significant damage even without spreading elsewhere.

Most BCCs develop on skin that receives regular ultraviolet, or UV, radiation from sunlight or indoor tanning. The face, scalp, ears, neck, shoulders, arms, and hands are common sites. BCC can also occur in areas that receive little sun.

Treatment is often highly effective, especially when the cancer is found early. The best approach depends on the tumor's size, location, growth pattern, and whether it has been treated before. A person's general health and treatment preferences also matter.

Having had one BCC raises the chance of developing another skin cancer. Ongoing skin checks and UV protection therefore remain important after treatment.

Symptoms

BCC does not always look like a typical mole. Its appearance varies with skin tone, tumor type, and location. It may be pink, red, white, brown, black, or close to the color of the surrounding skin.

Possible signs include:

Some BCCs cause no discomfort. Others may bleed during shaving or after being rubbed by clothing. Bleeding alone does not show how advanced a tumor is.

Many noncancerous conditions can cause similar changes. A clinician should examine a new, changing, or nonhealing skin lesion rather than relying on appearance alone. Pigmented BCC can resemble melanoma, another type of skin cancer that may behave more aggressively.

Arrange a prompt appointment if a spot is growing quickly, repeatedly bleeding, becoming painful, or affecting an eyelid, nose, ear, or lip. Seek urgent care for bleeding that does not stop after firm, continuous pressure or for signs of a serious infection, such as rapidly spreading redness with fever. These situations are uncommon and are different from routine evaluation of a slowly changing spot.

- A shiny, pearly, or translucent bump
- A sore that does not heal or repeatedly heals and returns
- A spot that bleeds, oozes, or forms a crust with little injury
- A flat, scaly patch with a raised edge
- A smooth growth with visible small blood vessels
- A firm, pale, waxy, or scar-like area
- A dark or unevenly pigmented spot that may resemble a mole
- A slowly enlarging area that is tender, itchy, or numb

Causes and risk factors

BCC develops when genetic damage causes basal cells to grow without normal control. UV radiation is the main preventable cause. Damage can build up over many years, so a BCC may appear long after the exposure that contributed to it.

Risk factors include:

People of every skin tone can develop BCC. In darker skin, a tumor may be more likely to contain brown or black pigment, and changes can be harder to recognize. Skin cancer can also occur in areas not regularly exposed to sunlight.

A risk factor increases likelihood but does not mean that someone will develop BCC. Some people with several risk factors never develop it, while others have no obvious risk beyond everyday UV exposure.

- Frequent or intense sun exposure, especially repeated sunburns
- Use of tanning beds or sunlamps
- Fair skin, light eyes, or hair that burns easily
- Older age, because UV damage accumulates over time
- A personal history of BCC or another skin cancer
- A close family history of skin cancer
- A weakened immune system, including after an organ transplant
- Previous radiation treatment to the affected area
- Long-term exposure to arsenic
- Certain rare inherited conditions, such as basal cell nevus syndrome

Diagnosis

Diagnosis usually begins with a skin examination. A clinician may ask how long the spot has been present, whether it has changed, and whether it bleeds, itches, or hurts. The rest of the skin may also be examined for other suspicious areas.

A dermatoscope may be used. This handheld device provides magnification and special lighting to show structures beneath the skin's surface. It can help a clinician decide whether a biopsy is needed, but it does not replace tissue testing.

A biopsy removes all or part of the abnormal area. Local anesthetic numbs the skin during the procedure. A pathologist then examines the tissue under a microscope to determine whether cancer is present and, if so, which growth pattern it has.

The biopsy report helps guide treatment. Some BCC patterns are more likely to extend beyond the visible edge or return after treatment. Tumors may also be considered higher risk because of their size, location, poorly defined borders, nerve involvement, or previous recurrence.

Most people do not need scans. Imaging may be considered when a large or deeply invasive tumor could involve bone, nerves, or other nearby structures. Lymph node testing is not routine because BCC rarely spreads to lymph nodes.

Treatment and management

Treatment aims to remove or destroy the cancer while protecting healthy tissue, function, and appearance. No single method is best for every BCC.

Standard surgical excision removes the tumor along with a margin of normal-looking skin. The tissue is examined to check whether cancer cells reach the cut edges. If cancer remains at an edge, another procedure may be needed.

Mohs surgery removes the tumor in thin layers. Each layer is examined under a microscope while the patient waits, and additional tissue is removed only where cancer remains. This approach checks the entire surgical edge and preserves as much healthy tissue as possible. It is often considered for tumors on functionally or cosmetically sensitive areas, tumors with poorly defined borders, certain aggressive growth patterns, or BCC that has returned.

Curettage and electrodesiccation involves scraping away the tumor and using an electric current to treat the area. It may be appropriate for selected low-risk tumors. It does not provide the same complete margin assessment as excision or Mohs surgery.

Topical medicines may be used for some superficial BCCs, meaning tumors limited to the upper skin layers. Imiquimod stimulates a local immune response, while fluorouracil interferes with the growth of abnormal cells. These treatments commonly cause redness, crusting, soreness, and irritation during therapy. They are not suitable for every tumor and should be used with clinical supervision.

Radiation therapy may be an option when surgery would be difficult, would cause major functional problems, or is not appropriate because of a person's health. It usually requires several treatment visits. Skin changes can occur during treatment, and long-term effects may develop in the treated area.

Other local treatments , including cryosurgery or photodynamic therapy, may be considered for selected superficial, low-risk lesions. Availability and suitability vary. These methods generally offer less information about whether the entire tumor has been removed.

Rarely, BCC is too advanced for straightforward surgery or radiation, or it spreads to another

part of the body. Specialist teams may then consider medicines that work throughout the body. Hedgehog pathway inhibitors, such as vismodegib or sonidegib, block a cell-growth signal involved in many BCCs. Cemiplimab is an immunotherapy that helps the immune system recognize cancer cells and may be considered in certain advanced cases.

Systemic treatments can cause important side effects and require monitoring. Some can seriously harm a developing fetus. Patients who may become pregnant or contribute to a pregnancy should discuss pregnancy prevention, fertility, and medication precautions with the treating team. Treatment choices and schedules must be individualized by cancer specialists.

After any procedure, the care team should explain wound care, expected discomfort, activity limits, and when pathology results will be available. New or worsening pain, pus, fever, spreading redness, or persistent bleeding should be reported promptly.

Complications

Untreated BCC can continue to enlarge and damage nearby tissues. Possible effects include an open wound, bleeding, infection, scarring, loss of cartilage or bone, and problems with the function of an eyelid, nose, ear, or lip. A tumor growing around a nerve may cause pain, tingling, weakness, or numbness.

BCC can return after treatment. The likelihood depends on features such as location, size, growth pattern, previous treatment, and whether the tumor was fully removed.

Spread to distant organs is rare, but locally advanced disease can still be serious. Early evaluation generally allows treatment to be less extensive.

Treatment itself can cause complications such as bleeding, infection, scarring, skin color changes, nerve injury, or changes in movement and appearance. A clinician can explain the risks that apply to the proposed method and location.

Follow up

Follow-up is used to check the treated area and look for new skin cancers. The timing of visits depends on the original tumor's risk features, treatment, immune status, and history of skin cancer. A clinician may recommend more frequent visits after a high-risk or recurrent BCC.

Between visits, examine the skin regularly in good light. Include the scalp, ears, back, soles, between the toes, and other areas that are difficult to see. A mirror or help from another person may be useful. Contact a clinician about a new growth, a changing spot, or a sore that does not heal rather than waiting for the next routine appointment.

Protecting skin from UV radiation may reduce further damage:

Sun protection does not replace follow-up examinations. It also does not mean avoiding all outdoor activity. The goal is to reduce UV exposure while continuing normal daily life.

Routine follow-up is appropriate for a stable scar and no new concerns. Request an earlier review if the treated area develops a persistent lump, ulcer, scale, bleeding, pain, or numbness. New weakness, vision changes, severe facial pain, or uncontrolled bleeding needs prompt medical assessment.

- Seek shade, especially when sunlight is intense.
- Wear protective clothing, a wide-brimmed hat, and UV-blocking sunglasses.
- Use a broad-spectrum, water-resistant sunscreen with an SPF of 30 or higher on exposed skin, and reapply as directed.
- Avoid tanning beds and sunlamps.
- Protect children from sunburn and excessive UV exposure.

Sources

- National Cancer Institute. Skin Cancer Treatment (PDQ), Health Professional Version . PDQ Cancer Information Summaries. National Cancer Institute.
- National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Basal Cell Skin Cancer . Version 2.2024.
- Kim JYS, Kozlow JH, Mittal B, Moyer J, Olenecki T, Rodgers P. "Guidelines of care for the management of basal cell carcinoma." Journal of the American Academy of Dermatology . 2018;78(3):540-559.
- Stratigos AJ, Basset-Seguin N, Peris K, et al. "European consensus-based interdisciplinary guideline for diagnosis and treatment of basal cell carcinoma-update 2023." European Journal of Cancer . 2023;192:113254.
- U.S. Food and Drug Administration. ERIVEDGE (vismodegib) prescribing information . Genentech, Inc.
- U.S. Food and Drug Administration. LIBTAYO (cemiplimab-rwlc) prescribing information . Regeneron Pharmaceuticals, Inc.