

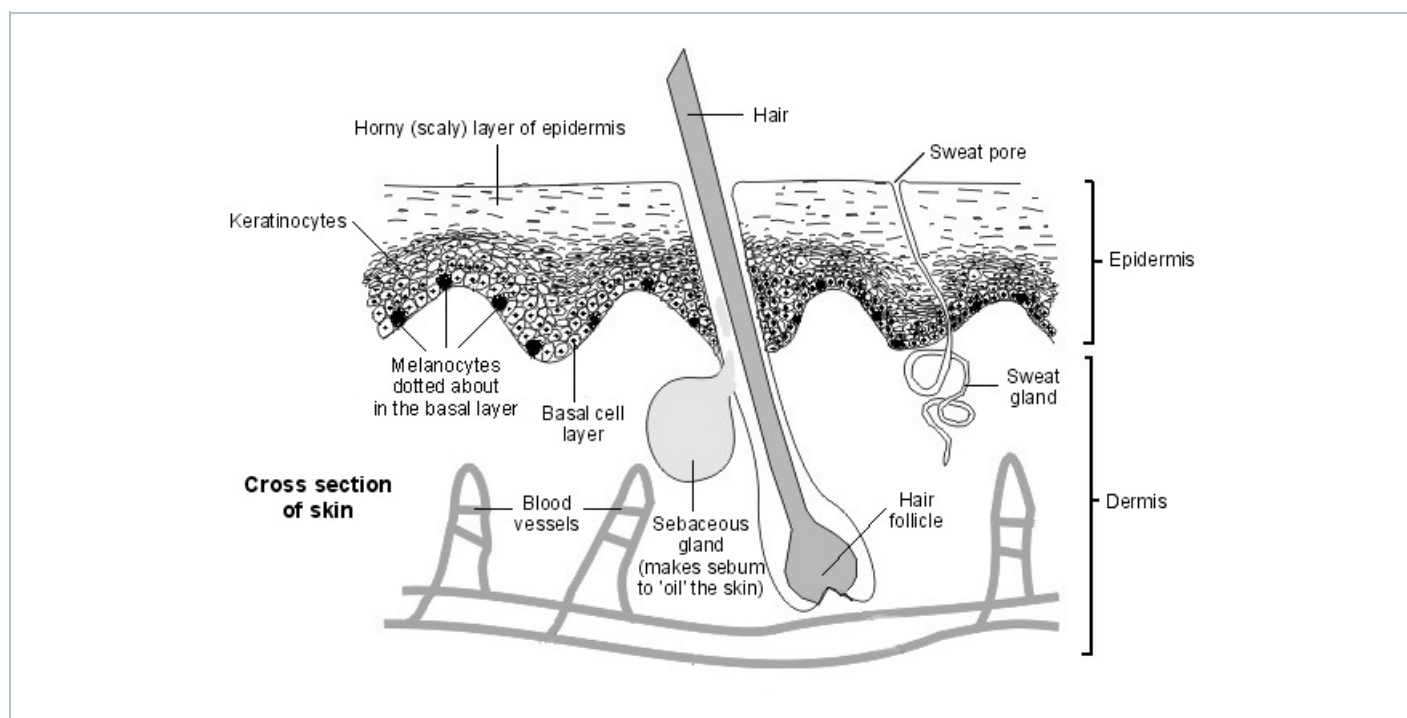
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Skin Cancer - Non-melanoma

Non-melanoma skin cancers include basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). They usually occur in older people. Most cases of non-melanoma skin cancer are easily treated and cured. See your doctor if you develop an abnormal lump or patch of skin which does not clear over 3-4 weeks.

Understanding the skin

The skin has two layers - the epidermis and the dermis. Beneath the dermis is a layer of fat and then the deeper structures such as muscles and tendons.



The epidermis has three main types of cell:

- **Basal cells.** These are the bottom layer of cells in the epidermis.
- **Keratinocytes.** These cells are in layers above the basal layer. They make keratin which is a hard wax-like material. Keratinocytes are constantly dividing and a certain number are dying at any given time. The top horny layer of the epidermis is made of dead keratinocytes which contain keratin. The top of the skin is constantly being shed and replaced by new dead cells which contain keratin.
- **Melanocytes.** These cells are dotted about at the bottom of the epidermis. They make a pigment called melanin when the skin is exposed to sun. The melanin is passed to the nearby skin cells to protect them from the sun's rays. Melanin causes the skin to tan in fair-skinned people. Dark-skinned people have more active melanocytes.

What are cancer, skin cancer and tumours?

Cancer is a disease of the cells in the body. The body is made up from millions of tiny cells. There are many different types of cell in the body and there are many different types of cancer which arise from different types of cell. What all types of cancer have in common is that the cancer cells are abnormal and multiply out of control. See separate leaflet called [What is Cancer for more details](#).

Skin cancers are divided into:

- **Melanoma ('malignant melanoma')**. This type of skin cancer develops from melanocytes.
- **Non-melanoma**. These are divided into:
 - **Basal cell carcinoma (BCC)** - skin cancer which develops from basal cells. This is also sometimes called a rodent ulcer.
 - **Squamous cell carcinoma (SCC)** - skin cancer which develops from keratinocytes.
 - **Other** - other types of skin cancer, which are rare.

A malignant tumour is a lump or growth of tissue made up from cancer cells which continue to multiply. Malignant tumours invade into nearby tissues and organs, which can cause damage. (Most types of malignant tumour also tend to spread (metastasise) to other parts of the body. This is very rare with BCC of the skin, and uncommon with SCC of the skin. This is why these non-melanoma types of cancer have a very high cure rate. Melanoma skin cancer has a high chance of spread.)

The rest of this leaflet is just about BCC and SCC of the skin. See separate leaflet called [Skin Cancer - Melanoma for more details](#).

Who gets basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) of the skin?

BCCs and SCCs become more common with increasing age. Over 7 in 10 cases occur in people over the age of 60. Over 60,000 people in the UK develop a BCC or SCC each year. (BCC is the most common type of cancer of all.) They are rare in children. BCC is the most common skin cancer in white and fair-skinned people. SCC is the second most common skin cancer in white and fair-skinned people.

What causes basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) of the skin?

A cancerous tumour starts from one abnormal cell. The exact reason why a cell becomes cancerous is unclear. It is thought that something damages or alters certain genes in the cell. This makes the cell abnormal and multiply out of control.

Sun damage to skin

A BCC typically develops on a [sun-exposed area of the skin](#) such as the head and neck. However, they can develop on any area of skin. The main risk factor which damages skin and can lead to a BCC or SCC is sun damage. About 9 in 10 cases of BCC and SCC are thought to be caused by sun damage. It is the ultraviolet (UV) radiation in the sunshine which does the damage.

People most at risk of skin damage are people with fair skin. In particular, those with skin which always burns and never tans, red or blond hair, green or blue eyes. Dark-skinned people rarely develop BCC or SCC, as they have more protective melanin in their skin.

Children's skin is most vulnerable to damage. Sun exposure in childhood is the most damaging. People who have a history of freckling in childhood, or frequent or severe sunburn in childhood, are most at risk of developing skin cancer as adults. (The damage to the skin can occur many years before a cancer actually develops.) Also, people who have worked outdoors for much of their life and had long-term exposure to the sun are at risk.

Other risk factors

Other factors which increase the risk of developing an SCC or BCC include the following:

- A family history of skin cancer. This may be related to the fact that you may inherit fair skin which is more easily sun-damaged but other genetic factors may play a part in some cases.
- Using sunbeds or similar tanning machines which emit UV light.
- If you have a **solar keratosis (actinic keratosis)**. This is a small, rough bump which develops on the skin. It is caused by a lot of exposure to the sun over many years.
- If you have already had a previous skin cancer.
- Occasionally, a skin cancer can develop on an area of skin previously damaged with a burn, scar, a long-standing sore, persistent inflammation, X-ray exposure or certain chemicals (such as arsenic or creosote).
- A weakened immune system. For example, if you take immunosuppressant medication following an organ transplant.
- Some rare inherited disorders, which are associated with an increased risk, such as albinism, xeroderma pigmentosa, Gorlin's syndrome and Bazex syndrome.

Skin cancer symptoms

Always see your doctor if you develop an abnormal lump or patch of skin which does not go away within a few weeks.

Basal cell carcinoma (BCC)

A BCC typically develops on a sun-exposed area of the skin such as the head and neck. However, they can develop on any area of skin. The first sign is often a small red, pink or pearly lump which appears on previously normal skin. The lump is often dome-shaped. However, BCCs can vary in shape and colour. They usually grow very slowly and it can take many months for one to grow to a centimetre or more.

In time, the lump on the skin may crust over, ulcerate or bleed from time to time. A skin ulcer caused by a BCC is sometimes called a rodent ulcer which often looks like a small crater with a raised edge. BCCs very rarely spread (metastasise) to other parts of the body. However, untreated they continue to grow locally and can cause damage to nearby structures. For example, a BCC on the face may erode and damage the nose or an ear.

Squamous cell carcinoma (SCC)

An SCC typically develops on the face - most commonly on or around the ears or lips. But, again, any area of skin can be affected. It typically starts as a small crusted or scaly area of skin with a red or pink base. It may grow into a lump which may look like a wart. An SCC may ulcerate or bleed from time to time. However, an early SCC can vary in shape, appearance and colour.

As an SCC grows larger and deeper, it damages nearby structures. For example, if left untreated, an SCC next to a nose or ear can grow into, erode and then completely destroy the nose or ear. An SCC may also spread to other areas of the body. However, this is uncommon in the early stages and most are treated before any spread occurs.

Bowen's disease is a condition which is thought to be a very flat early pre-cancerous SCC. It looks like a red-brown, scaly patch which may resemble psoriasis or eczema. If untreated, it may become a true SCC.

How is basal cell carcinoma (BCC) or squamous cell carcinoma (SCC) diagnosed?

Biopsy

A **small sample (biopsy) of tissue can be taken from a suspicious lump on the skin**. This is looked at under the microscope, which can confirm the diagnosis. If the skin lump is small, the whole lump may be removed and then looked at under the microscope (an excisional biopsy). This may diagnose and cure the problem at the same time.

Further tests

No further tests are usually needed for a BCC or an SCC which is diagnosed when it is small. If a doctor suspects that there has been some spread from an SCC to other parts of the body, then further tests such as X-rays, blood tests or scans may be advised.

What is the treatment for basal cell carcinoma (BCC) or squamous cell carcinoma (SCC) of the skin?

Treatment for small skin cancers

Most cases are diagnosed when the skin cancer is still quite small. Depending on the site, size and depth of the tumour, one of the following treatments may be used:

- A common treatment is a simple operation done under local anaesthetic to cut out the cancer. The edges of the normal skin are then stitched together.
- Curettage and cautery. In this procedure the tumour is scraped off (curettage). Any bleeding is stopped by small electrical burns given by an electric needle (cautery).
- **Cryosurgery**. This is a freezing treatment with liquid nitrogen which destroys cancer cells.
- Photodynamic therapy. This is a special kind of light therapy which kills cancer cells.

- Chemotherapy creams are sometimes placed on skin cancers to kill cancer cells. These are usually either 5-fluorouracil (5-FU) or imiquimod.
- Mohs' micrographic surgery is done in some situations. In this technique, the tumour is removed piece by piece. Each piece is looked at under the microscope straightaway for cancer cells. Further pieces are removed until no cancer cells are seen. The aim is to remove all the cancer but to remove as little healthy tissue as possible.

More extensive surgery is needed in some cases

If the skin cancer is larger then a more extensive operation may be required. This may need a general anaesthetic. For example, if a large area of affected skin is cut away you may need plastic surgery to place a skin graft over the wound.

If an SCC has spread to the nearby lymph glands (nodes) then an operation to remove these glands may be advised.

Other treatments

Radiotherapy is sometimes used as an alternative to surgery. For example, if the area covered by the cancer is large, if the site is difficult to operate on or if an operation cannot be done for any other reason. Radiotherapy is a treatment which uses high-energy beams of radiation which are focused on cancerous tissue to kill cancer cells.

If an SCC has spread to lymph nodes or other areas of the body, radiotherapy and/or chemotherapy may be used to treat the secondary cancers.

What is the outlook (prognosis)

Almost all basal cell carcinomas (BCCs) can be treated and cured, mostly with a simple operation or other simple technique. They rarely spread. Most squamous cell carcinomas (SCCs) can also be treated and cured, as most are treated before there has been any spread to other parts of the body. Treatment is less likely to be curative if there has been any spread to other parts of the body.

Note: people who have one skin cancer have an increased risk of developing another one in the future.

Can skin cancer be prevented?

Most skin cancers (non-melanoma and melanoma skin cancers) are caused by excessive exposure to the sun. We should all limit our sun exposure in the summer months (or all year when in hot countries nearer the equator) by:

- Staying indoors or in the shade as much as possible between 11 am and 3 pm.
- Covering up with clothes and a wide-brimmed hat when out in the sunshine.
- Applying sunscreen of at least sun protection factor (SPF) 15 (SPF 30 for children or people with pale skin) which also has high ultraviolet A (UVA) protection.

In particular, children should be protected from the sun. Sunburn or excessive exposure to the sun in childhood is thought to be the biggest risk factor to the developing of skin cancer as an adult. [See separate leaflet called Preventing Skin Cancer for more details.](#)

Further reading & references

- [Guideline on the Treatment of Basal Cell Carcinoma](#); European Dermatology Forum (2012)
- [Multi-professional guidelines for the management of the patient with primary cutaneous squamous cell carcinoma](#); British Association of Dermatologists (2009)
- [Basal Cell Carcinoma](#); DermIS (Dermatology Information System)
- [Squamous cell carcinoma of the skin](#); DermNet NZ

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