

Information about pathology tests to help Australians take control of their health and make the right decisions about their care.

WHAT YOU SHOULD KNOW ABOUT INVESTIGATING SKIN CANCER

To diagnose skin cancer, a sample of your skin tissue will be sent to the pathology lab for examination under a microscope. This can show if you have skin cancer or not, and tell what type it is. Here's what to expect.

Your doctor usually will start by looking closely at the area of skin that is suspicious, often using a dermatoscope, an instrument that uses light and magnification to give a better view. They will look at the size, shape, colour, and texture of the area. They will ask you some questions such as when the mark first appeared, if it has changed, and if you have had symptoms such as itchiness or bleeding. They will also ask about your medical and family history.

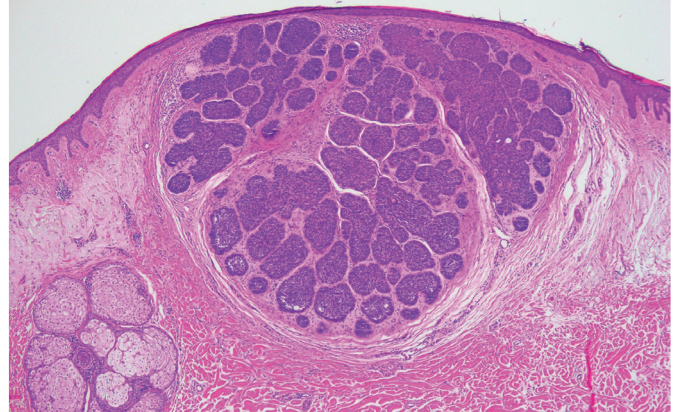
How skin cancer develops

Most skin cancers start in the outermost layer of your skin, the epidermis.

Your skin is continually renewing itself. New cells are being made all the time in the deeper layers of the epidermis and these gradually work their way up to the surface of the skin where they are shed as tiny flakes.

Your body makes new skin cells by copying existing skin cells, and this includes copying the cells' DNA. Skin cancer occurs when mistakes are made in the DNA copying process. These 'mistakes' are called mutations and one important cause is sun damage. Mutations make the cells grow out of control and form a mass of cancer cells – a tumour.

Basal cell carcinoma



The type of skin cancer you have depends on the type of cell it starts in. The three most common types are:

- **SCC (squamous cell carcinoma) and BCC (basal cell carcinoma)** start in the keratinocytes, a type of cell within the epidermis
- **Melanoma** starts in cells called melanocytes, which are also found in the epidermis. Melanocytes make the brown pigment called melanin that gives skin its colour. Melanocytes produce more melanin when you're in the sun to help protect the deeper layers of skin.

Pathology can provide important information about the precise type of cancer and the particular treatment that will work best.



Taking a sample for investigation

If your doctor decides to take a sample of your skin tissue they need to choose the best method. To do this, they will consider the type of skin cancer they think it is, where it is on your body, and its size.

Your doctor may decide to take only part of the suspicious area and send it to the lab, and then remove the whole skin cancer using the lab results to guide them.

Punch biopsy – this uses a special instrument to remove a small cylinder of skin. This type of biopsy often allows the pathologist to assess the deeper layers of skin.

Shave biopsy – this sample mainly looks at the upper layers of the skin, but can be used to assess a broader area than a punch biopsy.

Curette – this scrapes off skin, often in multiple fragments.

Your doctor might decide to do an excisional biopsy – this removes all of the suspicious area.



What happens in the lab?

Your skin sample is processed, and stained with chemicals that highlight cells. A small piece of this processed skin tissue is placed on a glass slide to be viewed under the microscope, by a dermatopathologist.

Diagnosis: The dermatopathologist aims to make a *diagnosis*. This means identifying the type of tumour and deciding whether it is benign or malignant. They will look at the size and shape of the individual cells that make up the tumour and the way the tumour is constructed as a whole, for example, malignant tumours often have an infiltrating growth pattern in which the tumour infiltrates between the collagen fibres of the skin.

Prognosis: Depending on the type of tumour, the dermatopathologist will also look for features that enable them to give a *prognosis*. Prognosis means giving an opinion on how the tumour can be expected to behave and progress. For example, in cases of melanoma, important prognostic features include the thickness of the tumour, and whether or not it is ulcerated.

The pathologist who investigates your skin cancer is a medical doctor who has done several years of further training in anatomical pathology.

A **dermatopathologist** is a pathologist who has gone on to further specialise in investigating skin and interpreting what they find.

What happens after your diagnosis?

After your doctor receives the pathology diagnosis you may need a second procedure.

- If the biopsy sample shows skin cancer, you may need surgery to remove the cancer completely.
- If you've had an excisional biopsy in which the whole skin cancer was removed, you may need more surgery.

Looking through the microscope, the dermatopathologist carefully checks the removed skin cancer to make sure there is a border of healthy skin tissue all around it. This is called the margin. You will need more surgery if not enough healthy tissue has been removed. This is important. If any cancer cells are left behind, the cancer may continue to grow.

It is extremely rare for BCC, and very uncommon for SCC, to spread beyond the skin to other parts of the body, but this may be of concern with invasive melanoma.

Depending on the type of skin tumour, and/ or your medical and family history, you may need further tests to see if the cancer has spread. These can include blood tests, imaging, or further tissue samples (for example examining nearby lymph nodes).

Possible further tests on your skin sample

Your dermatopathologist may need to perform further tests on the skin tissue. These may add to the time taken for the report to be finalised. If there is a delay, don't jump to any conclusions that something is bad. It is simply that the dermatopathologist is making every effort to provide an accurate assessment.

Tests for specific genetic mutations can also be required to decide if one of the new targeted treatments will be effective. These treatments are drugs that are designed to attack cancer by interfering with the actions of specific abnormal cancer molecules.

Most skin cancers can be clearly diagnosed but some are harder to explain. Skin cancers present in many and varied ways, often with subtle differences. Your dermatopathologist will often confer with a colleague for a second opinion. When faced with an extremely difficult case to diagnose, they may seek the opinion of a pathologist elsewhere in Australia, or overseas.

Don't be complacent – keep an eye on it

You have an important role to play when it comes to skin cancer. Even if your report says no cancer has been found, it's a good idea to keep track of any further changes. Talk with your doctor if you have any suspicions or if your biopsy doesn't heal. Early detection of skin cancer gives you the best chance of successful treatment.



5 questions to ask your doctor

- What type of skin cancer do I have?
- Do I need further surgery?
- Do I need more tests?
- What should I look for on my skin?
- When should I come in for a follow-up check?



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- We are supported by the **Royal College of Pathologists of Australasia**.
- As the consumer pathology testing support resource for **My Health Record**, there is a direct link to the LTO^{AU} website embedded in the pathology results pages of every registered person's online record.



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