



Melanoma occurs when abnormal cells in the skin grow in an uncontrolled way. Melanoma forms from melanocytes, the cells in the outer layer of the skin that form melanin (the pigment that gives your skin its colour). It is a serious form of skin cancer because it can spread from the skin to other parts of the body.

## Risk factors

A risk factor is anything that increases a person's chance of developing a certain condition or disease, such as cancer. In adults, lifestyle and environmental factors (such as smoking or exposure to certain chemicals) can be significant risk factors for developing certain types of cancer. In children, very few risk factors have been identified that increase the chance of developing cancer. For most children with cancer, the underlying cause is unknown.

Even if your child has a risk factor, it does not mean they will develop cancer. Many children with a risk factor will never develop cancer, while others with cancer may have had no known risk factors. Even if a child with a risk factor develops cancer, it is usually hard to know how much that risk factor contributed to the development of their disease.

The causes of melanoma in children are not well understood, but several factors associated with a higher chance of developing melanoma include the following.

### Exposure to UV light

The main risk factor for melanoma is exposure to UV (ultraviolet) light over a long time, either as natural sunlight or as artificial sunlight (such as tanning beds). The risk is higher if your child has:

- fair skin that burns easily
- blue or green eyes
- red or blonde hair
- moles on their skin, especially if some of them are unusual
- a history of blistering sunburns.

### Family history

If other members of the family have unusual moles or have had melanoma, this may increase the chance that your child could develop melanoma.

Knowledge of your family's history relating to cancer may change over time.

### Genetic conditions





Certain genetic conditions are associated with a higher chance of developing melanoma. These include:

- giant melanocytic nevi
- xeroderma pigmentosum
- some immune system disorders
- Werner syndrome
- [retinoblastoma](#).

Mutations in a gene called *BRAF* are associated with melanoma.

If your child is diagnosed with one of these genetic conditions, they will need specific follow-up. The health care team will advise which ongoing tests your child will need.

Cancers in children that are linked to genetic conditions may also affect the risk for other family members. Speak to your child's treatment team to see whether genetic counselling is recommended for you or your family.

For more information about genetic conditions, see the [children's cancer glossary](#) or the [Centre for Genetics Education](#).

## Symptoms

Symptoms of melanoma may include:

- a mole that
  - changes size, shape or colour
  - is more than one colour
  - has irregular edges or is not symmetrical
  - is itchy, bleeding or oozing
- new moles that grow near other moles
- change in skin colour.

## Diagnosis

Your child will have a number of tests to investigate their symptoms and confirm a diagnosis of





melanoma, including:

- medical history and physical examination
- medical imaging, which may include
  - X-ray
  - computed tomography (CT) scan
  - magnetic resonance imaging (MRI)
  - positron emission tomography (PET) scan
- biopsy – where a small sample of the cancer is removed to be examined under a microscope. The sample can also be tested for genetic changes that can help determine the best type of treatment for your child
- lymph node biopsy – where one or more lymph nodes near the tumour are removed and examined under a microscope to see if the cancer has spread. This is known as a therapeutic lymph node dissection.

These tests are explained in more detail in [How is cancer diagnosed?](#)

## Staging

If your child is diagnosed with melanoma, some of the diagnostic tests will also help to stage the tumour. Staging determines where the tumour is, how big it is, which nearby organs are involved and whether the cancer has spread to other parts of the body. This is important to determine the outlook (prognosis) for your child, and to decide on the best options for treatment.

There are different ways to assess the stage and extent of disease. One of the most common ways of describing stages for melanoma is as follows:

- Stage 0 (melanoma in situ) – abnormal melanocytes are found in the outer layer of the skin (epidermis) but have not spread to other layers of the skin.
- Stage I – the tumour is small, and may or may not be ulcerated (i.e. broken on the surface).
- Stage II – the tumour is larger, and may or may not be ulcerated.
- Stage III – the cancer has spread to nearby lymph nodes, lymph vessels or skin.
- Stage IV – the cancer has spread to distant parts of the body such as the lungs, liver, brain or bone.

## Treatment

Treatment and care of children with cancer is usually provided by a team of health professionals called a multidisciplinary team. Members of this team are specialists in children's cancers – they understand the differences between children's cancer and adult cancer, and each team member brings different





skills in managing care to meet the needs of both you and your child.

The team will be led by a childhood cancer specialist (paediatric oncologist). Other members of the team depend on the age of your child and their type of disease, and may change over time as your child's needs change. A list of team members who might make up the multidisciplinary team can be found in the [The treatment team](#).

Treatment for melanoma depends on the age of your child, the stage of the disease, the biological features of the cancer and other factors identified during diagnosis. Treatment will be tailored to your child's particular situation, and may involve one or more of the following (see [How is cancer treated](#) for more detail).

## Surgery

Your child will most likely have surgery to remove the tumour and some of the surrounding healthy tissue. If the cancer has spread to nearby lymph nodes, these may be removed as well.

## Other treatments

Therapies used to treat melanoma in children are guided by treatments in adults. Immunotherapy and targeted therapies, such as interferon and BRAF inhibitors, may be considered for your child.

## Support

Diagnosis of cancer in a child is a very difficult time for the child, their family and their friends. You might feel overwhelmed, scared, anxious or angry. These are all normal feelings. It is very important to seek support from family, friends, health professionals or other services to help you, your child and your family cope with cancer.

Talk to your child's treatment team if you are having difficulties coping.

[Living with children's cancer](#) has information about physical, emotional and practical issues during and after diagnosis and treatment. There is also a page with helpful links on [where to find support](#).

The [Cancer Council](#) in your state or territory can give you general information about cancer, as well as information on resources and support groups in your local area. Call the Cancer Council Helpline from anywhere in Australia for the cost of a local call on **13 11 20**.

For additional specific information about childhood cancer, contact any of the major [children's hospitals](#)



[and networks](#) in your state or territory.

## Chance of cure

Many children with cancer are cured of the disease. Children's bodies have great capacity for healing. Also, huge improvements have been made in the treatment of childhood cancer in the past few decades. In the 1980s, around 65% of children diagnosed with cancer were alive more than 5 years after their diagnosis. Today, around 83% of children are successfully treated and become long-term survivors.

Long-term survival (also called the outlook or prognosis) and treatment options depend on a range of factors, including:

- age of your child at diagnosis
- extent or stage of the cancer
- appearance of the cancer cells under the microscope (the shape, function and structure of the cells)
- how the cancer responds to treatment
- cancer or tumour biology, which includes
  - the patterns of the cancer cells
  - how different the cancer cells are from normal cells
  - how fast the cancer cells are growing.

Talk to your child's doctor about your child's individual disease, treatment options and outlook.

## Clinical trials

Researchers are trialling new ways to diagnose and treat different types of cancer. Your child may be invited to be part of a clinical trial to test new ways of treating melanoma.

New treatments have to go through very strict regulation and approval processes before they can be used in a clinical trial. Your child's doctor will explain everything about the trial and give you detailed written information. You will need to give special permission for your child to be part of the trial.

Participating in a clinical trial may or may not directly benefit your child, but the results of clinical trials today will help children with cancer in the future.

See [Clinical trials and research](#) for more information, including whether there are any clinical trials your



child can join.

## More information

For more information about childhood melanoma, see:

- [Melanoma treatment \(PDQ®\)](#) for adults or [Unusual cancers of childhood treatment \(PDQ®\)](#), from the National Cancer Institute (United States).
- For more information about sun safety and [SunSmart schools and early childhood programs go to your state Cancer Council website.](#)
- [Paediatric Cancer Registry](#)

