
Cancer in children

Summary

- In children, the genetic changes that cause cancer are not due to lifestyle, but are more likely to be random and difficult to predict.
 - The types of cancer seen in children differ from those seen in adults.
 - Symptoms will vary greatly depending on the type of cancer.
 - To diagnose cancer, the doctor will use tests that vary depending on the type of cancer.
 - The treatments will depend on the type and stage of the cancer.
 - Ask your healthcare professional about how you can best support your child through this difficult time.
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Cancer is uncommon in children. The most common cancers in children are different to those seen in adults.

Cancer is caused by genetic changes in a cell resulting in uncontrolled cell growth. In adults, these changes are often caused by lifestyle factors, such as smoking or obesity. In children, the genetic changes that cause cancer are not due to lifestyle. Therefore, they are more likely to be random and difficult to predict. This makes cancer in children difficult to prevent.

A cancer diagnosis in a child is a very difficult time for the child, the parents and family and friends. Ask your healthcare professional for advice about how you can best get support for yourself and support your child.

Causes of cancer in children

Lifestyle-related factors such as obesity and smoking play a role in cancer in adults, but these typically take years to develop. Lifestyle factors have not had sufficient time to affect children in the same way and so cancer in children tends to be more to do with random genetic changes.

Some children can inherit genetic changes and a risk for cancer from their parents but, more commonly, the genetic changes are not inherited and happen early in the child's life, sometimes before birth. The reasons for these genetic changes are not known. The changes are considered to be random, although in some cases, they could be caused by environmental factors, such as exposure to radiation.

Types of cancer in children

The types of cancer seen in children differ from those in adults. The most common childhood cancers, from more common to less common, are:

- leukaemia – acute lymphoblastic leukaemia or acute myeloid leukaemia begin in the bone marrow and spread via the bloodstream
- brain and central nervous system tumours – gliomas and medulloblastoma
- neuroblastoma – a cancer of the nerve tissue found around the kidneys
- lymphoma – Hodgkin and non-Hodgkin lymphomas begin in white blood cells (lymphocytes), usually in the lymph nodes and other lymph tissues
- Wilms' tumour – a type of kidney cancer
- bone cancer – osteosarcoma and Ewing sarcoma
- rhabdomyosarcoma – cancer of muscle and connective tissue such as tendons and cartilage
- retinoblastoma – cancer of the retina, the light-sensing tissue at the back of the eye.

Symptoms of cancer in children

Symptoms will vary greatly depending on the type of cancer. The best course of action is to visit your doctor if you

are concerned about your child's health.

Symptoms for the common childhood cancers include:

- leukaemia – bone and joint pain, fatigue, weakness, pale skin, bleeding or bruising, fever or weight loss
- brain and central nervous system tumours – headaches, nausea, vomiting, blurred or double vision, dizziness or difficulty walking
- neuroblastoma – a swelling in the abdomen, bone pain or fever
- lymphoma – weight loss, fever, sweats, tiredness and lumps (swollen lymph nodes) in the neck, armpit or groin
- Wilms' tumour – fever, pain, nausea or lack of interest in food
- bone cancer – bone pain and swelling
- rhabdomyosarcoma – pain and swelling almost anywhere in the body
- retinoblastoma – eye appears unusual and can look white or pink rather than red during flash photography.

Diagnosis of cancer in children

If your doctor thinks your child's symptoms may be caused by cancer, you will be referred to a specialist medical doctor called an oncologist.

Having medical tests can be unpleasant for everyone, but it can be especially difficult for children. Your healthcare professionals can help you to support your child through this difficult time.

To diagnose cancer, the specialist will use tests that vary depending on the type of cancer. Typical tests include:

- biopsy – a small amount of tumour is removed and analysed
- blood tests
- bone marrow aspirate – a small amount of bone marrow is taken using a needle and analysed
- imaging tests – bone scan, CT scan (computed tomography), MRI (magnetic resonance imaging), PET (positron emission tomography), ultrasound or x-ray
- lumbar puncture – a small amount of spinal fluid is removed using a needle and analysed.

Test results can take a few days to come back. It is very natural to feel anxious while waiting to get your child's results. It can sometimes help to talk to a close friend or relative about how you are feeling. You could also contact the Cancer Council Helpline on 13 11 20 and speak with a cancer nurse.

Once the tests are complete, the medical specialists will usually 'stage' the cancer, which helps to choose treatment options. The meaning of stages depends on the type of cancer, but in general, the stages are:

- stage 1 – cancer has not spread to other parts of the body
- stages 2 and 3 – cancer has spread to areas close to the original main (or primary) tumour (for example, lymph nodes)
- stage 4 – cancer has spread (metastasised) to other areas of the body and may have produced secondary tumours.

Treatment for cancer in children

The treatments for cancer will depend on the type and stage of the cancer.

Typical treatments used, alone or in combination, include:

- surgery – common for solid tumours
- radiation therapy – uses high-energy x-rays to kill or damage cancer cells, but can damage other cells close to the area being treated
- chemotherapy – drugs that are toxic to cancer cells, but may also be toxic to healthy cells in the body
- immunotherapy (also known as biological therapy) – a wide variety of treatments based on biological molecules that aim to boost the immune system to specifically kill cancer cells. Much cancer research goes towards developing new immunotherapies for cancer.

New treatments are always being researched and tested for all types of children's cancers. Clinical trials are available for many types of cancer, which either test new treatments, new combinations of treatments or better ways of dealing with side effects. Ask your doctor about clinical trials currently running that may be relevant to your child's condition.

Side effects of cancer treatments

Although treatment is designed to kill or damage cancer cells, it usually also kills some healthy cells and this results in side effects. You should speak with your healthcare professionals about how best to deal with the most likely side effects of the treatments being used for your child.

Complementary medicine or therapy and cancer

Some people may choose to include therapies such as massage and relaxation to support their children to cope with their cancer diagnosis and treatment.

Other complementary treatments such as herbal therapies and dietary changes are not scientifically proven to help and may be harmful. In some cases, the complementary treatment can make the conventional treatment less effective.

Always consult your doctor if you are thinking of starting complementary and alternative medicine for your child. Never let your child stop taking their conventional medicine or alter the dose without the knowledge and approval of your doctor.

Where to get help

- Your **GP (doctor)**
- **Cancer Council Victoria, Information and Support Service** Tel. **13 11 20**
- **Multilingual Cancer Information Line**, Victoria Tel. **13 14 50**
- **WeCan website** helps people affected by cancer find the information, resources and support services they may need following a diagnosis of cancer.

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