
Cancer explained

Summary

- Cancer is a disease of cells in the body and it is caused by changes to some genes that control how cells behave.
 - There are around 200 different types of cancer and most areas of the body can be affected.
 - Different things cause cancers. Early symptoms, signs, treatment and outcomes of cancers differ.
 - The earlier a cancer is found, the easier it is to treat.
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Cancer is abnormal cell growth. It is the most common cause of death in Victoria, accounting for more than 11,009 deaths in 2013. 29,738 Victorians were diagnosed with cancer in 2013. There are about 200 different types of cancer and most areas of the body can be affected.

Avoiding risk factors can prevent some cancers. For others, early detection and treatment is the best way to improve your chance of a cure.

Types of tumours

A tumour is a lump or growth of abnormal cells. It can be benign (not cancerous) or malignant (cancerous). A benign tumour is made up of cells that are similar to normal cells. They do not cause problems unless they grow very large and begin to press on other organs in the body.

Malignant tumours are made up of cancer cells and they usually grow much faster than a benign tumour. If left untreated, they may spread into surrounding tissue and to other parts of the body, and cause serious problems.

Cancer involves abnormal cell growth

Generally, cancer occurs when the normal cells in our body grow in an uncontrolled way. Our bodies are made up of billions of different types of cells. We are always making new cells. This enables us to grow, replace worn-out cells and heal damaged cells after an injury. Special genes make sure the new cells develop and behave the way they should.

If these genes are damaged, our cells can multiply rapidly and grow abnormally. This abnormal cell growth may turn into a cancer. If cancer cells replace too many healthy cells, the affected organ can no longer work properly.

Where cancers begin

Cancers can start growing in any part of the body. They have different names depending on where they start. For example:

- Carcinomas start growing in the cells that line the skin and body cavities.
- Sarcomas grow within supportive tissues of the body such as muscle, bone and fatty tissue.
- Leukaemia is one type of cancer that develops in the tissue where white blood cells are formed, called the bone marrow, and affects the cells in the blood.
- Myeloma develops in the plasma cells.
- Lymphoma begins in the cells of the lymphatic system.

How cancers spread

A cancer begins to spread when part of the original tumour (primary tumour) breaks away from where it started and travels to nearby tissue or to another part of the body. The cancer cells then start to grow in that area.

A malignant tumour that spreads its cells into nearby tissues is known as an invasive cancer. When a cancer

spreads from one part of the body to another, it is known as a secondary cancer or a 'metastasis'.

For a cancer to grow bigger than a pinhead and spread, it has to grow its own blood supply. This is called angiogenesis. Without this blood supply, the cells at the edge of the tumour will die from lack of oxygen.

Cancer cells produce substances that allow them to move through the body much more easily than normal cells. Also, cancer cells do not stick together as well as normal cells.

A cancer can spread in three main ways, being:

- locally, in and near the tissue around the primary cancer
- through the lymphatic system
- through the blood circulation.

Cancers and their stages

Many cancers are classified according to stages, numbered 1 to 4. Stage reflects the size of the cancer and how far the cancer has spread.

Stages are also related to the severity of the cancer. Stage 1 is usually the least severe, small and confined to a local area of the body, while stage 4 is generally called metastatic or secondary cancer, as it has spread to other parts of the body. Knowing the stage of a cancer helps medical professionals decide on the best treatment to use.

There are various ways to stage cancer, but most systems look for a number of key factors including:

- the size of the cancer
- if the cancer has invaded nearby tissues and by how much
- if the cancer has spread to nearby lymph vessels and by how much
- if the cancer has spread to other parts of the body, such as the lungs, bone, liver and brain.

Risk factors for cancer

The exact cause of most cancers is unknown and there is no one cause for any type of cancer. Some risk factors are likely to cause cancer, whereas others will only slightly increase the likelihood of developing cancer. A combination of genetic and environmental factors may increase the risk of cancer.

Some risk factors include:

- **Age** – most types of cancer become more common as we get older.
- **Genetic make-up** – some people are born with a genetic mutation that already puts them at more of a risk of developing a cancer.
- **Family history** – a changed gene is passed on from a parent to a child.
- **Lifestyle choices** – these include diet, smoking, high alcohol intake and lack of physical activity.
- **Environmental causes** – these include exposure to too much natural radiation from the sun or radon gas (a radioactive, colourless, odourless, tasteless noble gas).
- **Exposure to harmful chemicals in the workplace** – includes some dyes, rubber, gas and asbestos (now banned in Australia).
- **Man-made radiation** – this can include radiation from medical applications (for example, x-rays), televisions and burning of combustible fuels.
- **Viruses** – specific viruses can help to cause some cancers, although you cannot 'catch' a cancer like you can an infection.
- **Your immune system** – people who have problems with their immune system are at more risk of some forms of cancer.

Early detection of some cancers

A person with cancer may not show any symptoms until the disease is advanced. Screening a section of the population for a cancer is done if:

- the disease can be recognised at an early stage
- there is an effective low-risk and low-cost screening test
- early treatment is likely to give a better outcome.

Three national population-screening programs operate in Victoria, being:

- BreastScreen Victoria, call 13 20 50 for further information
- **National Cervical Screening Program**, or call 13 11 20
- National Bowel Cancer Screening Program, call 1800 118 868 for further information.

Treatment for cancer

There are three main types of standard treatment that are used in cancer care. Each one can be used to try to cure cancer, to relieve symptoms, to help other treatments work better or to improve survival.

They are:

- **Surgery** – the cancer is surgically removed. This is often the first line of treatment if the cancer has not spread. It may be used to remove lymph nodes if these are also affected by the cancer. Cancers of the blood system (such as leukaemia) cannot be treated with surgery.
- **Chemotherapy** – the use of cancer-killing medication. There are many different types of chemotherapy medication. Some are given as tablets or capsules, but most are given by drip (infusion) into a vein. The medication goes into the bloodstream and travels through the body to destroy the cancer cells.
- **Radiation therapy (or radiotherapy)** – uses small, precise doses of radiation that target and destroy cancer cells. Cancers that have not spread can often be treated effectively with radiation therapy.
- **Biological therapies** ,include Immunotherapies that trigger the immune system to fight cancer, and monoclonal antibodies that block molecules which stop the immune system working. Several types of biological therapies are now used to treat certain types of cancer. Research is continuing and many therapies are being tested in clinical trials.

You may be given one treatment only or a combination of treatments. Some people may also use complementary and alternative therapies. When used alongside your conventional cancer treatment, some of these therapies can make you feel better and improve quality of life. Others may not be so helpful and in some cases may be harmful. It is advisable to discuss any treatments with your doctor.

Another cancer treatment is the use of hormone therapy. There is ongoing research in new cancer treatments, and some of these may involve laser treatment, cryotherapy, photodynamic therapy and high-intensity focused ultrasound (HIFU).

Sometimes, a cancer is diagnosed when it is very advanced. This may mean that standard treatment is not going to cure the cancer. When a cure is unlikely, chemotherapy, radiotherapy or other treatments can relieve symptoms and help the person feel as comfortable as possible. They may also prolong life. This is called palliative treatment.

Remission – disappearance of symptoms of cancer

Cancer that responds to treatment either stops growing or starts to shrink. This means that the signs and symptoms of cancer disappear. Doctors call this remission. A remission can last anywhere from months to years.

Cancer statistics

It is important to remember that statistics are very general and they are only used as a guide. The three most common groups of statistics that are used to describe cancer are:

- **incidence** – the number of people who develop a certain type of cancer each year
- **survival** – how long you may survive a cancer depending on the type of cancer, your age, the stage of the cancer and the treatment you receive. It is usually described as 'five-year survival' and '10-year survival', which refers to the percentage of people who are living five or 10 years after their diagnosis with a certain type of cancer. Some people may be cured, but for others, the cancer will come back (recur) within these periods. Others may be in remission for many years before the cancer comes back

- **mortality** – the number of people who have died from a particular type of cancer in a year.

If you or someone you know has cancer, the best person to talk to about statistics and survival rates is your treating specialist.

Incidence and mortality rates can vary among different groups of people. Some factors that may affect these rates include:

- **Socioeconomic differences** – lung cancer and stomach cancer are more common in lower socioeconomic groups, while breast and prostate cancer and melanoma are more common in higher socioeconomic groups.
- **Geographic differences** – the male death rate from lung cancer is 25 per cent higher in rural areas, compared with metropolitan areas of Victoria.
- **Birthplace differences** – people born overseas have lower death rates from some cancers and higher death rates from others, depending on the country of origin. This may be due to differences in lifestyle factors such as smoking, sun exposure or diet.

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.
- **myCarePlan** - Plan your future after cancer. Create a personalised survivorship care plan, giving you a better understanding of life after cancer treatment. An initiative of the Australian Cancer Survivorship Centre and Peter Mac.

This page has been produced in consultation with and approved by:

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