Brain tumours - cancer

Summary

- Brain tumours can be either malignant (cancerous) or benign (not cancerous).
- Malignant (cancerous) brain tumours affect adults of all ages and are one of the few cancers that occur in children.
- Symptoms and treatment will depend on which part of the brain is affected.
- Many malignant brain tumours are secondary cancers, which have similar symptoms to those of a primary tumour but are treated differently.

Brain cancer affects adults of all ages and is one of the few cancers that occur in children. Most brain tumours are gliomas, which develop from glial cells. Symptoms and treatment depend on which part of the brain is affected.

The brain and spinal cord make up the central nervous system. Brain and spinal cord tumours can be either malignant (cancerous) or benign (not cancerous). Approximately 510 Victorians are diagnosed with cancerous tumours of the central nervous system each year.

About the brain

The brain controls your thoughts, intelligence, memory and emotions. It coordinates body functions (such as movement, blood circulation and production of hormones) and interprets information from our senses (sight, hearing, smell, touch and taste). It weighs about one and a half kilograms and is made up of nerve cells (neurones).

The nerve fibres run out of the brain and join together to make the spinal cord. Together, the brain and spinal cord form the central nervous system. This system helps all the different parts of the body to communicate with each other.

Types of brain tumours

There are over 100 different types of brain tumours. They are commonly named after the type of cell they come from. Most brain tumours develop from glial cells, which grow from the supporting cells of the brain. These tumours are called ‘gliomas’. Tumours that begin in the brain are known as primary brain tumours.

- Some types of brain tumours are malignant (cancerous) and others are benign (non-cancerous). Differences include:
  - Benign brain tumours – are often slow growing and are unlikely to spread, but they can press on and damage the surrounding brain tissue. Usually, this type of tumour can be successfully removed with surgery.
  - Malignant brain tumours – vary in how fast they grow and respond to treatment. Some are contained inside a capsule and are easy to remove, while others have thin filaments spreading through the brain that make them very difficult to take out.

Causes of brain tumours

The causes of primary brain tumours are not fully understood. Researchers around the world are investigating possible causes. We know that brain and spinal cord tumours are more common in people with certain inherited or genetic conditions. They are also more common in people exposed to very high doses of radiation. However, for most people, the cause of their brain tumour is unknown.

Many people ask whether or not mobile phones cause cancer and more specifically, brain tumours. At the moment, the evidence is very weak that mobile phones cause cancer. Importantly, despite over a decade of widespread mobile phone usage in Victoria, there has been no upward trend observed in brain cancer incidence rates. Globally, brain tumour incidence rates have also remained relatively steady, but research continues in this area.
Symptoms of brain tumours
Symptoms will depend on which part of the brain the tumour affects. Generally, a growing tumour and swelling brain tissue presses on the brain, causing symptoms.

Symptoms can include:
- headaches – are the most common symptom. They may be severe and persistent, or come and go
- seizures (fits)
- nausea and vomiting
- difficulty speaking or thinking of words
- disturbed vision, hearing, smell or taste
- weakness or paralysis in parts of the body
- loss of balance
- irritability, drowsiness or personality changes
- loss of consciousness.

It is important to remember that headaches and feeling sick are very common symptoms of many illnesses. If these are the only symptoms you have, it is very unlikely that you will have a brain tumour. Always see your doctor if you are worried about symptoms.

Diagnosis of brain tumours
If your doctor suspects a brain tumour, you will be referred to a specialist doctor called a neurologist or neurosurgeon.

Some of the tests they will do may include:
- neurological examination – such as checking your muscle strength, reflexes, memory and your ability to tell hot from cold on your skin (sensation tests)
- eye test – the optic nerve, which connects the eye to the brain, tends to bulge a little if a tumour is present at the front of the brain
- CT scan – three dimensional x-rays. A dye will be injected or swallowed if you are having a full body scan, so that anything unusual will show more clearly
- magnetic resonance imaging (MRI) – similar to a CT scan, but magnetism is used to create a picture. This test will almost certainly show up any brain tumour
- x-rays and blood tests – to test your general health
- angiogram – injected dye is x-rayed as it flows through the blood vessels of your brain. This is not done for all types of brain tumours.

There may be other scans and tests that you will need to help diagnose your tumour. This will depend on the type of tumour you have and whether it has spread to other parts of your body.

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

Treatment for brain tumours
Treatment aims to remove the tumour or at least slow its growth and relieve the symptoms. Some of the treatment options include:
- Surgery – some tumours can be completely removed. In other cases, a tumour may have spread throughout the brain and may be very close to important structures in the brain. In this case, only pieces of it can be removed.
- Radiotherapy – uses x-rays to kill cancer cells. In children, low doses are used because the x-rays can slow a child’s development and growth. Treatment is carefully planned to do as little harm as possible to normal body tissues.
Chemotherapy – uses anti-cancer drugs to stop the cancer cells from multiplying. Chemotherapy is rarely used for adults, but often used for children because of the possible side effects of radiotherapy.

Steroid therapy – uses medication to reduce the swelling around the tumour. These do not treat the tumour itself, but they do help to relieve the swelling and pressure caused by the tumour.

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. The Cancer Council Victoria booklet called Understanding complementary therapies can be a useful resource.

All treatments have side effects. These will vary depending on the type of treatment you are having. Many side effects are temporary, but some may be permanent. Your doctor will explain all the possible side effects before your treatment begins.

Spinal cord tumours
These are rarer than primary brain tumours. There are a few different types of spinal cord tumours. The success of treatment will depend on the type of tumour.

Secondary brain tumours
Many malignant brain tumours are ‘secondary cancers’. This means they developed from a cancer that began elsewhere in the body. Cancers of the lung, breast, kidney, stomach, bowel (colon), and skin (melanoma) can all spread to the brain. For example, breast cancer cells may spread to the brain and cause a tumour. This is known as breast cancer with brain secondaries.

The symptoms of secondary brain tumours are similar to those of a primary tumour, but they are treated differently.

Research into brain tumours
Early detection and better treatment have improved survival for people with brain tumours. Research for brain tumours is ongoing. The CancerHelp UK website has information about research into brain tumours.

Clinical trials can test the effectiveness of promising new treatments or new ways of combining cancer treatments. Always discuss treatment options with your doctor.

Brain tumours and your sexuality
Having a brain tumour and its treatment can affect the way you feel about your body, who you are, your relationships, the way you express yourself sexually and your sexual feelings (your ‘sexuality’). These changes can be very upsetting.

Your medical team should discuss these issues with you before and during your treatment. If you feel you would like to discuss things further, ask your doctor for a referral to a counsellor or call the Cancer Council Helpline on 13 11 20. The Cancer Council Victoria booklet called Sexuality, intimacy and cancer may also be helpful to read.

Caring for someone with cancer
Caring for someone with cancer can be a difficult and emotional time. If you or someone you know is caring for someone with a brain tumour, there is support available. The Cancer Council Victoria booklet called Caring for someone with cancer may also be helpful to read.

When a cure isn't possible
If brain cancer has been diagnosed in its later stages, the cancer may have spread to the point where a cure is no longer possible. Treatment then focuses on improving quality of life by relieving the symptoms (this is called ‘palliative’ treatment), using medication to relieve pain, nausea and vomiting. The Cancer Council Victoria booklet called Living with advanced cancer may be helpful to read.

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

betterhealth.vic.gov.au
• **WeCan website** helps people affected by cancer find the information, resources and support services they may need following a diagnosis of cancer.

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

Cancer Council Victoria

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