



braintumour
foundation
OF CANADA

Brain Tumour 101



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What is a brain tumour?

- A brain tumour is a mass of abnormal cells within or around the structure of the brain.
- A brain tumour can be benign or malignant, and can be primary or secondary.

Primary or Secondary?

Primary Tumours

- Originated from cells within the brain.
- Primary brain tumours stay within the brain or spinal cord.

Secondary Tumours (or Metastatic)

- Originated from cells from somewhere else in the body.
- Common for other cancers to move, i.e. breast, lung, melanoma, etc.

Growth: Benign or Malignant?

Benign Tumours

- WHO Grade 1 or 2
- Slow growing
- Well defined borders
- Does not invade surrounding tissue

Malignant Tumours

- WHO Grade 3 or 4
- Fast growing
- Poorly defined borders
- Can invade surrounding tissue and structures

(WHO: World Health Organization)



Common Symptoms

Headaches	Seizures	Visual changes
Personality changes	One-sided weakness	Hearing loss
Dizziness	Nausea and vomiting	One-sided paralysis



Diagnosing Brain Tumours

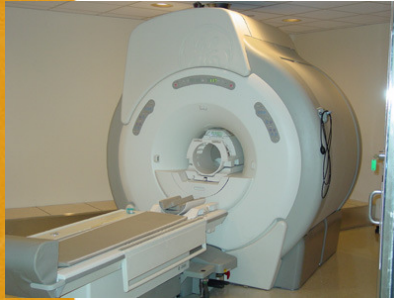
CT (or CAT) Scan

- A CT Scanner is often used to take pictures (X-rays) of the brain.
- Abnormalities such as a tumour will show up on a scan.



Diagnosing Brain Tumours

MRI Scan



- An MRI Scan uses a magnet and radio waves to take pictures of the brain.
- MRI scans show more detail than CT scans. However, a CT may be done first to determine any abnormalities. If one is present, an MRI provides further detail.

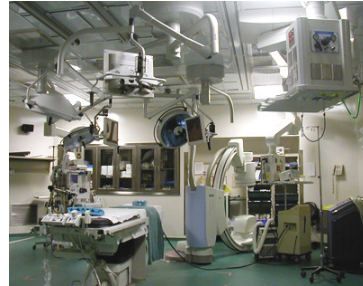
Types of Treatments

Three standard treatments exist for brain tumours:

- **Surgery**
- **Radiation therapy**
- **Chemotherapy**
- *However, a **wait-and-see approach** is often used to monitor any changes in the tumour.*
- Treatment plans are individualized to the patient, and the type and grade of tumour.

Surgery

- Often surgery is the first treatment offered **if** the tumour is in an operable area. If surgery is not an option, a biopsy may be ordered.
- The goal of surgery is to remove or de-bulk as much tumour as possible, and get an accurate diagnosis by the pathologist.



Radiation Therapy

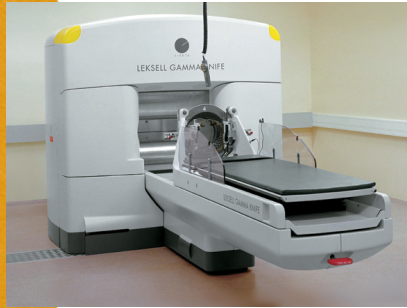
- Radiation therapy involves administering high levels of radiation directly at a tumour.
- Standard radiation therapy lasts for 6 weeks, Monday to Friday for 30 treatments.





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Radiation Therapy



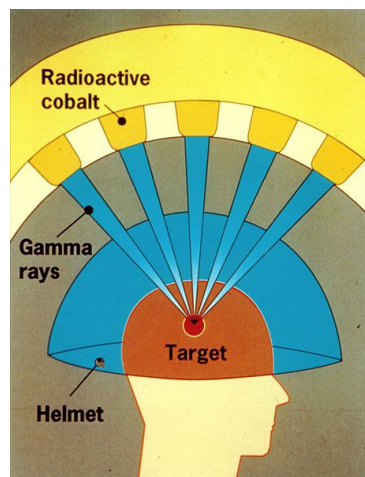
Stereotactic Radiosurgery is another form of radiation that is given in one single treatment.

Gamma Knife is used to treat meningiomas, pituitary tumours, acoustic neuromas, and secondary tumours.



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Gamma Knife



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Gamma Knife

Chemotherapy

- Chemotherapy is the use of medication to stop or slow the growth of tumour cells.
- Often given orally or intravenously.
- Temozolomide or Temodal is becoming a common chemo drug for brain tumour patients. But VERY expensive if not covered by insurance or provincial coverage. Often given concurrently with radiation therapy for high-grade gliomas.

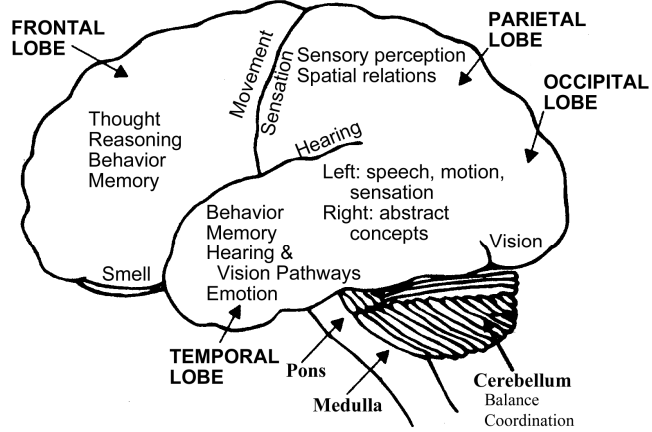
Common Tumour Types

Astrocytoma

- Grade 1: Pilocytic Astrocytoma [Pediatric]
- Grade 2: Astrocytoma
- Grade 3: Anaplastic Astrocytoma
- Grade 4: Glioblastoma Multiforme



Lobes of the Brain



*For right handed individuals