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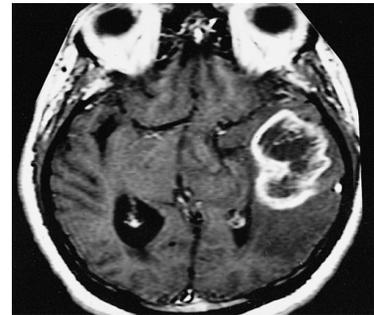
For additional Information Sheets or to learn more about other brain tumour topics, visit [www.BrainTumour.ca](http://www.BrainTumour.ca)

Brain Tumour Foundation of Canada Information Sheets are provided as an informational and educational tool and are not intended to replace the advice or instruction of a professional healthcare practitioner, or to substitute for medical care. We urge you to seek specific medical advice on individual matters of concern.

Brain Tumour Foundation of Canada is generously supported by individuals, corporations and employee groups. It is through the tireless dedication of donors that help is available for anyone affected by a brain tumour, including patients, survivors and their loved ones.

# Brain Tumour Types Info Sheet

## Glioblastoma Multiforme (GBM)



### Overview:

*Tumour Group:*  
Gliomas

*WHO Grade:*  
Grade IV

The incidence of glioblastoma multiforme (GBM) is 2 to 3 per 100,000 people in the United States and Europe. GBM accounts for 12 to 15% of all intracranial tumours and 50 to 60 of astrocytic tumours

### *Prevalence/Incidence:*

GBMs increase in frequency with age, and affect more men than women

### *Typical Age Range:*

GBMs may manifest at any age, but mostly affect adults with a peak incidence between 45 and 75 years of age. Only 3% of childhood brain tumours are glioblastomas.

### Description of Tumour:

A GBM is the most common and most aggressive malignant primary brain tumour. These tumours contain various cell types, hence the name multiforme, the most common being astrocytes.

Most of these tumours occur in the cerebral hemispheres but can develop in other parts of the brain such as the corpus callosum, brainstem or spinal cord. The cells of these tumours grow quickly, are not well defined, and can spread throughout the brain

Like many brain tumour types, the exact cause of glioblastoma multiforme is not known, but increasingly research is pointing toward genetic mutations.

- Can be composed of several different cell types
- Can develop directly or evolve from a lower grade glioma (secondary GBM)
- Less common in children
- Most common in older individuals and more common in men than women
- Most of these tumours occur in the cerebral hemisphere and often involves the corpus callosum
- The cells of these tumours grow quickly, are not well defined, and they may frequently spread throughout the brain.

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you are **not** alone

## Additional support, information and education offered by Brain Tumour Foundation of Canada:

Adult, Pediatric and Non-Malignant Brain Tumour Handbooks available in English and French.

"A Friend in Hope" children's storybook available in English and French.

20+ Adult Support Groups across Canada (in-person and virtual)

Toll-free information and support line

BrainWAVE Pediatric Support Program

Print BrainStorm Newsletter  
Email Newsletters:

- E-BrainStorm
- Peace of Mind

"Grey Matters" Blog

All patient resources are available free-of-charge. In Canada Call 1-800-265-5106 or visit [www.BrainTumour.ca](http://www.BrainTumour.ca) for additional details and information.

## Symptoms:

Common symptoms include, but are not necessarily limited to:

- Headache: The most common symptom, it's caused by an increased pressure in the brain
- Hemiparesis
- Nausea
- Seizure
- Progressive memory
- Personality deficit
- Vomiting

## Treatment/Standard of Care:

### Surgery

The first treatment step is surgery to remove as much tumour as possible. Surgery is almost always followed by radiation. Glioblastoma's capacity to wildly invade and infiltrate normal surrounding brain tissue makes complete resection impossible. The goal of surgery is to de-bulk -- a surgical procedure with the goal of decreasing the mass effect of a tumour by removing dead tissue or a portion of the tumour. However, improvements in neuro-imaging have helped make better distinctions between tumour types and between tumour and normal cells

### Radiation

After surgery, radiation therapy is used to kill leftover tumour cells and in attempts to prevent recurrence.

### Chemotherapy

Chemotherapy is often given at the same time as radiation and may be used to delay radiation in young children.

### Prognosis:

For adults with glioblastoma, treated with temozolomide chemotherapy and radiation therapy at the same time, medium survival is about 14.6 months with two-year survival accounts for 30 per cent of patients. However, study reported that almost 10 per cent of patients with glioblastoma may live five years or longer.

Our understanding of the molecular profile of GBM helps in guiding treatment decisions and providing a more accurate expectation for prognosis. For example, glioblastoma patients who have had their MGMT gene shut off by a process called methylation are more likely to have prolonged survival rates. The MGMT gene is thought to be a significant predictor of treatment response.

Not all glioblastomas have the same biologic abnormalities. This may be the reason different patients respond differently to the same treatment and why different patients with the same tumour have different outcomes.

**For references, please refer to [braintumour.ca](http://braintumour.ca).**



**braintumour**  
foundation  
OF CANADA

205 Horton St E  
Suite 203  
London, Ontario  
N6B 1K7

📞 519.642.7755  
1 [800] 265.5106  
📠 519.642.7192  
[www.braintumour.ca](http://www.braintumour.ca)

