Overview:

**Tumour Group:**
Pediatric Brain Tumours

**WHO Grade:**
Grade IV

**Prevalence/Incidence:**
Medulloblastoma is relatively rare and accounts for less than 2% of all primary brain tumours and 18% of all pediatric brain tumours. Medulloblastoma occurs more often in men than in women. More than 70% of all pediatric medulloblastomas are diagnosed in children under age 10; very few occur in children up to age one.

**Typical Age Range:**
Medulloblastoma in adults is far less common, but does occur. About one-third of all medulloblastomas diagnosed in the United States are found in adults between the ages of 20-44. The incidence in adults sharply decreases in frequency after age 45, with very few older adults having this tumour.

**Description of Tumour:**
Medulloblastoma is a fast-growing, high-grade brain tumour. Like many tumour types, the exact cause of medulloblastoma is not known. However, scientists are making significant strides in understanding its biology. Changes have been identified in genes and chromosomes (the cell’s DNA blueprints) that may play a role in the development of this tumour. There are also a few rare, genetic health syndromes that are associated with increased risk for developing this tumour. These include Gorlin syndrome and Turcot syndrome.

Different subtypes of medulloblastoma tumours have recently been identified and described using “molecular classification.” Each subtype has different characteristics and may
- Be more likely to occur in a specific patient age range
- Have different pathological, genetic and molecular biology characteristics
- Have different clinical outcomes
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 for additional details and information.

Symptoms:
Common symptoms are usually those of raised intracranial pressure and include:

- Behavioural or personality changes
- Double vision
- Headaches (which are worse first thing in the morning)
- Lack of coordination
- Lethargy or sleepiness
- Vomiting

Treatment/Standard of Care:
The management of medulloblastoma involves a multidisciplinary team:

- Surgery is the most important first line treatment and involves removing as much of the tumour as possible
- Sometimes the CDF pathways do not re-establish themselves after surgery and then a shunt may be necessary to treat the raised intracranial pressure (hydrocephalus)
- Chemotherapy is usually an important part of the treatment plan. In very young children aged 3 years or less, it is standard to treat children with medulloblastoma using chemotherapy alone, as radiation therapy can be associated with significant long-term health problems (late effects)
- Radiation therapy is used for older children and involves treatment of the brain and spine followed by a “boost” of extra radiation therapy to the area where the tumour started in the posterior fossa.

Prognosis:
The outcome for patients with medulloblastoma depends on many different factors which include:

- Extent of disease at presentation. Children who have a tumour that has already spread through the tumour is localised (average-risk disease)
- If all of the tumour can be surgically resected, then there is less chance of the tumour recurring later
- The molecular classification of the tumour
- The age of the child (younger children have a poorer prognosis)

With current therapies, at least 80% of children with average-risk medulloblastoma can be expected to be alive and free of disease five years from diagnosis. Even in those children with high-risk disease, effective therapy is possible and results in long-term disease control in as many as 70% of patients.

For more details, please refer to braintumour.ca.