

BRAIN CANCER

A brain tumor or intracranial neoplasm, is an abnormal mass of tissue with cells growing and multiplying uncontrollably, seemingly unchecked by the mechanisms that control normal cells.

There are more than 125 types of brain tumors officially recognized by the world health organization.



Tumors in the brain can be either primary or metastatic.

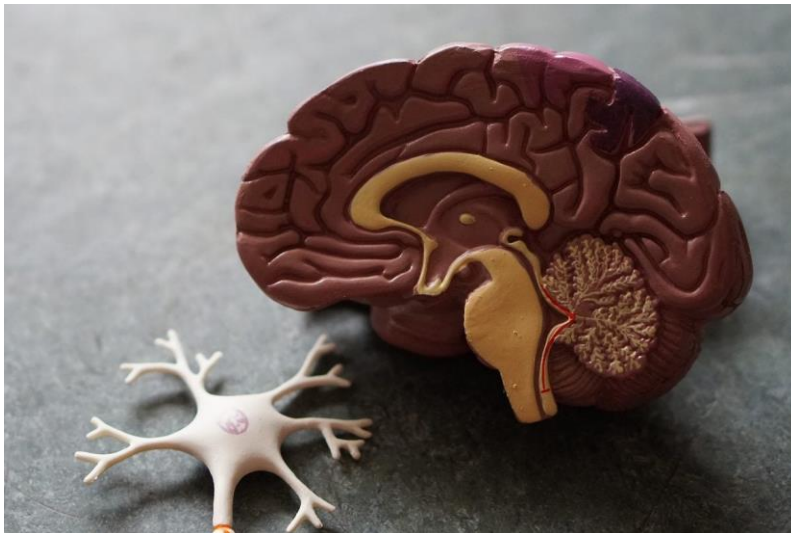
Primary brain tumors are those arising from the tissues of the brain or its immediate surroundings like meninges etc. They are mostly malignant i.e., cancerous. Only few of them are benign i.e. (space occupying lesions)

Primary brain tumors occur in around 250000 people a year globally, making up < 2% of all cancers. Median age at diagnosis is around 55yrs and has a bimodal distribution with the incidence peaking in the 1st and 6th decade of life. The most common primary brain tumors are gliomas, meningiomas,

pituitary adenomas, vestibular schwannomas, primary CNS lymphomas, and primitive neuroectodermal tumors (medulloblastomas).

In children, brain tumors are second only to Leukemias as a cause of cancer. Most common types of tumors in children are medulloblastomas, low grade astrocytoma, craniopharyngiomas and brainstem gliomas. In adults, the most common types include meningiomas and astrocytoma such as glioblastoma

Metastatic brain tumors are those which originate elsewhere in the body (most commonly lung cancer, breast cancer, Kidney, Prostrate etc) and migrate to the brain and grow there, usually through the bloodstream.



Treatments and Procedures

Brain cancer treatment options include a combination of chemo-, biological, radiation, or gene therapy approaches. For patients with metastases to the central nervous system from systemic cancer, procedures may involve:

- Surgery
- Chemotherapy
- Radiation Therapy
- Radiotherapy
- Steroids (to treat and prevent swelling especially in the brain)
- Anti-seizure medication (to treat and prevent seizures associated with intracranial pressure)
- Bone marrow transplantation
- Palliative care
- Rehabilitation
- Continuous follow-up care

Latest Technology Used To treat brain cancer.

- **CyberKnife: Image-Guided Robotic Radiosurgery:** Stereotactic radiosurgery is a non-invasive treatment in which high dose radiation beams enter the body through various angles and intersect at the desired target. This allows for a concentrated dose to reach the tumor while limiting the dose to surrounding healthy tissues. The Cyber Knife uses a linear accelerator mounted on a robotic arm to focus multiple beams of radiation into the tumor. It is used to treat both primary and metastatic brain tumors.