

Brain Tumors

The brain is one of the largest and most complex organs in the human body. It is made up of more than 100 billion nerves that communicate in trillions of connections called synapses.

Physiologically, the function of the brain is to exert centralized control over the other organs of the body.

Brain and spinal cord tumors are formed through the growth of abnormal cells in the tissue and while these tumors typically do not metastasize to other parts of the body, they can spread throughout the brain and spinal cord making them difficult to remove completely. Even tumors classified as “benign” when allowed to grow can press on and harm normal brain tissue and cause pain. Brain tumors can also form when a tumor from another part of the body has metastasized into the brain. These are metastatic brain tumors (or brain metastases), which are more common than primary brain tumors.

Brain and Spinal Cord Tumors Overview

Most brain and spinal cord tumors develop from glial cells, which are the supporting cells of the brain. These tumors account for approximately 38% of primary brain tumors:

- Anaplastic
- Astrocytoma
- Glioblastoma

There are a few less common primary tumors, which are (ranked according to occurrence):

- Pituitary tumors
- Schwannomas
- CNS lymphomas
- Oligodendrogliomas
- Ependymomas
- Low-grade astrocytomas
- Medulloblastomas

The best strategy for early diagnosis is prompt attention to the signs and symptoms of this disease as well as knowing family medical history.

Our care is from diagnosis to treatment and recovery with the belief that compassion and mutual respect are essential for success in all the dimensions of cancer care. Dr. Ngidi follows a multi-disciplinary approach to treatment and partners with each patient encouraging them to participate in their own medical care and make informed decisions.

Symptoms

The main areas of the brain include the cerebrum, cerebellum, and brain stem and each has its own unique function. Brain cancer symptoms are determined by the location of the tumor within the tissue.

Cerebrum

The cerebrum is the brain's large, outer portion that controls reasoning, thought, emotion, and language. It also controls voluntary muscle movements (throwing a ball, walking, chewing, etc.) and for intaking and processing sensory information (vision, hearing, smell, touch, and pain).

A tumor in a cerebral hemisphere presents the following symptoms:

- Seizures
- Trouble speaking
- A change of mood such as depression
- A change in personality
- Weakness or paralysis in part of the body
- Changes in vision, hearing, or other senses

Basal Ganglia

The basal ganglia lies deep within the brain and controls involuntary muscle movement. A brain tumor here can cause symptoms of weakness and possibly tremors or other involuntary movements though these instances are rare.

Cerebellum

The cerebellum is in the back part of the brain under the cerebrum and coordinates body movement. Tumors in the cerebellum can cause problems with:

- Coordination in walking
- Fine motor movements of hands, arms, feet, and legs
- Swallowing
- Speech
- Synchronizing eye movements

Brain Stem

The brain stem is situated at the lower part of the brain and connects to the spinal cord. It consists of nerve fibers responsible for controlling muscles and sensation between the cerebrum and the rest of the body. It also helps control breathing and beating of the heart. The brain stem communicates with the cranial nerves that control the face, eyes, tongue, mouth, and other facial areas.

A brain stem tumor can manifest symptoms such as:

- Body weakness
- Stiff muscles or problems with sensation
- Facial or eye movement difficulty
- Problems hearing or swallowing
- Double vision
- Difficulty with walking

Surgical removal of tumors from this area is risky because this part of the brain is small and essential to life.

Spinal Cord

The spinal cord contains nerve fibers that control muscles, sensation, and bladder and bowel control. If a tumor develops along the spinal cord, symptoms are usually felt on both sides of the body (such as weakness or numbness of both legs not just one); this is unlike most brain tumors, which usually impact only one side of the body.

A tumor in the spinal cord causes symptoms of:

- Weakness
- Paralysis
- Numbness

Treatment

Tumors of the brain and spinal cord are difficult to treat because they are complex and located in sensitive body parts. Treatment team for brain cancer typically includes oncologist, neurosurgeon, neurologist, radiation and endocrinologist.

Several types of treatment can be used to treat brain and spinal cord tumors, including:

- Surgery
- Radiation Therapy
- Chemotherapy
- Targeted Therapy

The type and grade of the tumor and other factors affect the treatment plan, which usually includes a combination of two or more procedures. Treatments are developed to provide the patient with the best possible outcome while limiting side effects as much as possible.

We partner with patients to achieve the best outcome for their cancer care. Our integrated treatment plans consider the stage and grade of a tumor, previous treatments (if any), extent of the cancer, biopsy analysis and other unique factors to develop the most favorable medical outcome for our patients.

