

What is a Glioma?

A glioma is a cancer of the brain, or brain tumor, which forms in the glial cells of the central nervous system. Glial cells are those that surround and support nerve cells. While some brain cancers originate elsewhere in the body, gliomas originate in the central nervous system, and are often called "primary" brain tumors.



Beyond the location of their origin, gliomas have a number of characteristics. One important characteristic of gliomas is that they do not have clearly discernable boundaries, or are "diffuse." Even if removed, portions of a glioma often remain and lead to relapse. While gliomas do not spread outside of the central nervous system, it is common to find multiple gliomas throughout the brain stem during relapse phases of the disease.

Gliomas are disproportionately common among children, and they are the second highest cause of cancer deaths among young people. 85%-95% of children who are diagnosed with gliomas die within five years. Different forms of gliomas, however, have different prognoses and treatments

Different Types of Gliomas

There are many different forms of gliomas, which are categorized by their location in the brain stem as well as a number of other criteria. It is often difficult, however, to obtain an accurate diagnosis, as many gliomas appear similar yet act differently.

In the future, accurate diagnosis of specific gliomas will likely become more important. Currently, however, the location of the glioma generally dictates the treatment. Gliomas occurring in the midbrain, the dorsum of the medulla, or elsewhere in the brain stem can often be treated through surgical removal (in combination with radiation and chemotherapy), which dramatically increases the chances of survival. Some forms of gliomas, in particular many that arise in the pons or supratentorial hemisphere, cannot be removed surgically, and therefore are treated primarily with radiation and chemotherapy. The prognosis for such forms of gliomas are bleak, with a two year survival rate ranging from 30% to less than 10%, depending on the specific form of glioma.

The Symptoms of Gliomas

Symptoms common across multiple forms of gliomas include headaches, seizures, speech or reasoning difficulties, diminished vision, loss of balance, nausea, and physical weakness or paralysis. However, other symptoms arise in line with the location of the glioma. For example, a pontine glioma may involve difficulty swallowing whereas a glioma in the medulla can be associated with weakness in the legs and arms.