

Brain Stem Glioma - Childhood - Latest Research [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 03/2014

ON THIS PAGE: You will read about the scientific research being done now to learn more about brain stem glioma and how to treat it. To see other pages, use the menu on the side of your screen.

Doctors are working to learn more about brain stem glioma, ways to prevent it, how to best treat it, and how to provide the best care to children diagnosed with this disease. The following areas of research may include new options for patients through [clinical trials](#) [3]. Always talk with your child's doctor about the diagnostic and treatment options best for your child.

Improved imaging and surgery. Imaging techniques are being developed that help the surgical oncologist pinpoint the tumor's exact location to reduce or prevent damage to the healthy parts of the brain. For example, image-guided stereotaxis allows surgeons to visualize and operate on the brain using three-dimensional computerized outlines of the brain and the tumor. Along with specialized software, these images help guide the surgeon to the tumor. Tumors that were once considered inoperable can now be removed using this technique. In certain instances, these imaging techniques are also being used to better understand the benefits and risks of using a biopsy to diagnose children with diffuse brain stem glioma.

Improved radiation therapy. Conformal radiation therapy is a way to give high doses of radiation directly to a tumor and not healthy tissue. This technique creates detailed, three-dimensional maps of the brain and tumor so doctors know exactly where to deliver the radiation therapy. In addition, drugs designed to enhance the effectiveness of radiation therapy or to slow or stop tumor growth are also being studied.

Molecular features. Other research is focused on evaluating the abnormal molecular features of brain stem glioma cells to better diagnosis and categorize these tumors. These features are found by examining the tumor after a biopsy and may eventually help doctors find treatments that target the tumor based on the specific molecular features.

Immunotherapy. Immunotherapy, also called biologic therapy, is designed to boost the body's natural defenses to fight the cancer. It uses materials made either by the body or in a laboratory to improve, target, or restore immune system function. For brain stem glioma, doctors are researching vaccines that may treat the tumor. Learn more about [immunotherapy and cancer vaccines](#) [4].

New ways to give chemotherapy. The blood-brain barrier, which normally serves to protect the brain and spinal cord from damaging chemicals, also keeps out many types of chemotherapy. New methods of giving chemotherapy called convection enhanced delivery are also being studied. This method uses a narrow tube called a catheter that is placed into the brain so chemotherapy can be directed at the tumor.

Supportive care. Clinical trials are underway to find better ways of reducing symptoms and side effects of current brain stem glioma treatments in order to improve patients' comfort and quality of life.

Tissue donation. Some families find that donating tissue feels appropriate as part of the grieving process after their child's death. Similar to organ donation, tissue donations can help researchers learn more about how tumors change and spread to help develop new treatments for children with brain stem glioma. Talk with your doctor for more information about tissue donation.

Looking for More About the Latest Research?

If you would like additional information about the latest areas of research regarding brain stem glioma, explore these related items that take you outside of this guide:

- To find clinical trials specific to your child's diagnosis, talk with your child's doctor or [search online clinical trial databases now](#) [5].
- Visit ASCO's [CancerProgress.Net](#) [6] website to learn more about the historical pace of research for childhood cancers. Please note this link takes you to a separate ASCO website.

The next section addresses how to cope with the symptoms of the disease or the side effects of its treatment. Use the menu on the side of your screen to select Coping with Side Effects, or you can select another section, to continue reading this guide.

Links:

[1] <http://www.cancer.net/cancer-types/brain-stem-glioma-childhood/latest-research>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/24863>

[4] <http://www.cancer.net/node/30679>

[5] <http://www.cancer.net/node/24878>

[6] <http://www.cancerprogress.net/timeline/pediatric>