Brain Stem Glioma - Childhood - Diagnosis [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 05/2016

ON THIS PAGE: You will find a list of common tests, procedures, and scans that doctors use to find out the cause of a medical problem. To see other pages, use the menu.

Doctors use many tests to find, or diagnose, a brain stem glioma. They also do tests to learn if the tumor has spread to another part of the body from where it started. If this happens, it is called metastasis. For example, imaging tests can show if the tumor has spread. Imaging tests show pictures of the inside of the body. Doctors may also do tests to learn which treatments could work best.

For most tumors, a biopsy is the only sure way for the doctor to know whether an area of the body has a tumor. In a biopsy, the doctor takes a small sample of tissue for testing in a laboratory.

In general, a biopsy is avoided in children with diffuse brain stem glioma because the results of the biopsy do not change treatment options. In addition, the procedure can have serious risks. However, a biopsy may be used when a brain stem glioma has unusual features. As new treatments based on molecular information from the tumor increase and the risk of a biopsy decreases, these procedures may be done more often.

For most patients, diagnosing a brain stem glioma is done with magnetic resonance imaging (MRI) only (see below). Because of this, diffuse brain stem glioma is unlike most other tumors. For a focal tumor, a biopsy and removing the tumor with surgery may be considered. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis.

This list describes options for diagnosing brain stem glioma, and not all tests listed will be used for every person. Your child's doctor may consider these factors when choosing a diagnostic

test:

- The type of tumor suspected
- Your child's signs and symptoms
- Your child's age and medical condition
- The results of earlier medical tests

In addition to a physical examination, the following tests may be used to diagnose a brain stem glioma:

- **MRI.** An MRI [3] uses magnetic fields, not x-rays, to produce detailed images of the body. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a pill to swallow.
- **Computed tomography (CT or CAT) scan.** A CT scan [4] creates a 3-dimensional picture of the inside of the body using x-rays taken from different angles. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumors. A CT scan can also be used to measure the tumor's size. Sometimes, a contrast medium is given before the scan to provide better detail on the image. This dye can be injected into a patient's vein or given as a pill to swallow. For a brain stem glioma, this test generally does not provide enough information to make a definite diagnosis, and an MRI is still needed.
- **Biopsy.** A biopsy [5] is the removal of a small amount of tissue for examination under a microscope. As explained above, a biopsy is generally not done for the more common, diffuse type of brain stem tumor. However, for a focal tumor, it is often used to find out the type of tumor. If possible, a doctor called a neurosurgeon will remove a small piece of tissue from the brain. A neurosurgeon specializes in treating a CNS tumor using surgery. A pathologist then analyzes the sample(s). A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease.

After diagnostic tests are done, your child's doctor will review all of the results with you. If the diagnosis is brain stem glioma, these results also help the doctor describe the tumor; this is called staging and grading.

The next section in this guide is Stages and Grades. [6] It explains the system doctors use to describe the extent of the disease. Or, use the menu to choose another section to continue reading this guide.

Links
[1] http://www.cancer.net/cancer-types/brain-stem-glioma-childhood/diagnosis
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/24578
[4] http://www.cancer.net/node/24486
[5] http://www.cancer.net/node/24406
[6] http://www.cancer.net/node/18554