

# Fact Sheet



GIVING HELP, GIVING HOPE

## Childhood Brain Tumors Occurring in Adults

By TERESA E. OMERT, RN, MS, CNRN; CHICAGO INSTITUTE OF NEUROSURGERY AND NEURORESEARCH, CATHOLIC HEALTH PARTNERS

How are childhood brain tumors in adults different than adult brain tumors?

Children usually develop different types of brain tumors than adults. The most common types of childhood tumors are medulloblastomas, low grade astrocytomas (including pilocytic astrocytomas), ependymomas, craniopharyngiomas, and brain stem gliomas. The most common types of adult brain tumors are high grade astrocytomas (which includes glioblastoma multiforme), meningiomas, pituitary tumors, neurilemmomas and metastatic tumors (tumors that spread from cancers elsewhere in the body).

Childhood tumors also occur at different locations in the brain than in adults. Childhood tumors tend to occur in and around the midline (middle) of the brain whereas brain tumors in adulthood occur in the cerebral hemispheres. Childhood tumors in adults often occur in locations different than in a child with the same tumor type. For example, in children with pilocytic astrocytomas the most common location is in the cerebellum. In adults with pilocytic astrocytomas, the tumors occur more often in the brainstem and cerebral cortex.

Does an adult diagnosed with a pediatric brain tumor have a different outcome than a child diagnosed with the same tumor?

The outcome for any brain tumor depends upon the type of brain tumor as well as its location. There is no conclusive evidence to show that adults with pediatric tumors have a better or worse outcome than children with the same

tumor. Outcomes depend upon age, tumor type, location, physical health and treatments obtained. In some cases, outcomes for children and adults with the same tumor type, same location and same treatments are similar.

The age of the person with a brain tumor does effect outcome in that the very young and very old may not be able to tolerate treatments. Young children should not receive radiation to their brain if possible. The radiation may damage the developing brain cells causing them to fail to develop. Older adults and infants may have difficulty physically tolerating treatments such as chemotherapy and radiation. Being given all available treatments can help to increase outcome.

Are the treatment options for adults with childhood brain tumors different than for other adult brain tumors?

As with any brain tumor, childhood or adult, the treatment is based on the tumor type and location. The three main tools used to treat any brain tumor are surgery, radiation and chemotherapy.

What are some of the issues in treating brain tumors with surgery?

Surgical removal of a tumor, if possible, is always the first option. Any tumor located in or around the brainstem can be difficult to remove. Total removal of brainstem tumors may cause damage that can affect the patient's quality of life. Therefore, the surgeon may need to leave some tumor behind or may only be able to biopsy the tumor. When tumor cells are left behind, they need to be treated to prevent them from growing again.

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Tumors located within the brain tissue itself, also called invasive or malignant tumors, are more difficult to remove than tumors that do not invade the brain (benign tumors). Invasive tumors of childhood are medulloblastomas, some astrocytomas and ependymomas and brain stem gliomas. Benign tumors in children are some low grade astrocytomas (pilocytic astrocytoma) and craniopharyngiomas.

What can be done if a brain tumor cannot be removed by surgery or is invading the brain tissue?

If the tumor cannot be totally removed or is an invasive tumor, radiation is another option. "Conventional radiotherapy" is typically used when a tumor is invasive. "Conventional radiotherapy" means that the tumor, as well as an area around the tumor, will be radiated. Conventional radiotherapy is used when it is suspected that there are tumor cells left in the brain tissue.

Stereotactic radiosurgery is a way to give radiation to a small precise area. With this method the normal brain tissue is less effected by the radiation than with conventional radiotherapy. Radiosurgery can only be used on tumors of a certain size, location, and type. Sometimes a combination of radiosurgery and radiotherapy is an option.

Another option for brain tumors is chemotherapy. There are many different protocols for each specific tumor type. Adults with childhood brain tumors are usually given the same protocol as children with the same tumor type. Results from several studies indicate that outcomes are similar for adults and children on the same chemotherapy protocol.

What questions should the doctor be asked if an adult is diagnosed with a childhood brain tumor?

- What type of tumor is it? or What is the name of the tumor?
- Where is the tumor located?

- Can it be completely removed? or Was it completely removed?
- What are the risks of surgery?
- If it is not completely removed what other options are there?
- Can stereotactic radiosurgery be used?
- Can chemotherapy be used to treat the tumor?
- What type of chemotherapy will be used? or What is the name of the chemotherapy drugs to be used?
- What are the side effects expected from the chemotherapy?
- How often should the neurosurgeon or neuro-oncologist be seen for follow up?
- With what signs or symptoms should the neurosurgeon or neuro-oncologist be called?

Where can I go for more information?

The National Brain Tumor Foundation has resources to provide you with more information about your tumor type. Please call NBTF at 1.800.934.CURE (2873).

The information in this publication is subject to change. The reader is advised that information obtained from a physician should be considered more up-to-date and accurate than the information in this publication and that this publication does not and cannot purport to address facts and circumstances particular to any patient. This is something that can only be done by the patient's physician. Sponsorship of this publication does not imply the National Brain Tumor Foundation's endorsement or recommendation of any particular form or forms of therapy, regimen, or behavior.

The National Brain Tumor Foundation (NBTF) was founded in 1981 as a non-profit organization by people whose lives were affected by brain tumor disease. NBTF provides support services for patients and their families and raises funds for research to treat and cure brain tumors. For more information call 800.934.CURE.

NATIONAL BRAIN TUMOR FOUNDATION  
414 Thirteenth Street, Suite 700, Oakland, CA 94612-2603  
Tel: 510.839.9777 Fax: Tel: 510.839.9779  
Web Site: [www.brainumor.org](http://www.brainumor.org)  
E-mail: [nbtbf@braintumor.org](mailto:nbtbf@braintumor.org)  
800.934.CURE