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[Brain Tumor - Latest Research](#) [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 08/2015

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

Doctors are working to learn more about brain tumors, ways to prevent them, how to best treat them, and how to provide the best care to people diagnosed with a brain tumor. The following areas of research may include new options for patients through [clinical trials](#) [3]. Always talk with your doctor about the diagnostic and treatment options best for you.

- **Enhanced imaging tests.** New techniques for imaging scans are being researched. These may help doctors better track how well treatment is working and watch for possible tumor recurrence or growth.
- **Biomarkers.** Researchers are examining [biomarkers](#) [4] to diagnose a brain tumor and estimate a patient's prognosis.
- **Immunotherapy.** [Immunotherapy](#) [5], also called biological response modifier (BRM) therapy, is designed to boost the body's natural defenses to fight the cancer. It uses materials either made by the body or in a laboratory to improve, target, or restore immune system function. Different methods are being studied for brain tumors, such as the use of dendritic cells or the use of [vaccines](#) [6] aimed against a specific molecule on the surface of the tumor cells. Several methods are currently being tested in clinical trials.

- **Oncolytic virus therapy.** This therapy uses a virus that infects and destroys tumor cells, sparing healthy brain cells. It is currently being researched as a treatment for brain tumors.
- **Targeted therapy.** As outlined in [Treatment Options](#) [7], this type of treatment targets faulty genes or proteins that contribute to cancer growth and development. Research continues on the use of therapies for brain tumors that target the different ways a tumor grows, how a tumor spreads, and how tumor cells die.
- **Blood-brain barrier disruption.** This technique temporarily disrupts the brain's natural protective barrier in order to allow chemotherapy to more easily enter the brain from the bloodstream.
- **New drugs and combinations of drugs.** Researchers are looking at using drugs currently used for other types of cancer as treatment for a brain tumor. In addition, combinations of drugs that target different pathways a tumor uses to grow and spread are being explored. Since tumors can develop resistance to chemotherapy, meaning the treatment stops working, another approach is to use a treatment that targets how tumor cells develop resistance.
- **Gene therapy.** This type of therapy seeks to replace or repair abnormal genes that are causing or helping tumor growth.
- **Genetic research.** Researchers are seeking to learn more about mutations of specific genes and how they relate to the risk and growth of brain tumors. In particular, [The Cancer Genome Atlas Research Network](#) [8] is a large, ongoing effort by the National Institutes of Health to find out more about the link between genetics and glioblastoma. Recent results include the discovery of three specific genetic mutations not previously linked to glioblastoma: *NF1*, *ERBB2*, and *PIK3R1*. Other findings focused on the involvement of the *MGMT* gene and mutations of *IDH* gene. This information is useful to researchers and may eventually lead to advances in the diagnosis and treatment of this type of brain tumor. Precision medicine approaches that target tumor specific mutations are being explored.
- **Palliative care.** Clinical trials are underway to find better ways of reducing symptoms and side effects of current brain tumor treatments, in order to improve patients' comfort and quality of life.

Looking for More About the Latest Research?

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

- To find clinical trials specific to your diagnosis, talk with your doctor or [search online clinical trial databases now](#) [9].
- Review research announced at the [2013](#) [10] and [2012](#) [11] ASCO Annual Meeting.
- Visit ASCO's [CancerProgress.Net](#) [12] website to learn more about the historical pace of research for brain tumors. Please note this link takes you to a separate ASCO website.
- Visit the website of the [Conquer Cancer Foundation](#) [13] to find out how to help support research for every cancer type. Please note this link takes you to a separate ASCO website.

The [next section in this guide is Coping with Side Effects](#) [14] and it offers some guidance in how to cope with the physical, emotional, and social changes that a brain tumor and its treatment can bring. Or, use the menu on the side of your screen to choose another section to continue reading this guide.

Links

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

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

[3] <http://www.cancer.net/node/18570>

[4] <http://www.cancer.net/node/24730>

[5] <http://www.cancer.net/node/24726>

[6] <http://www.cancer.net/navigating-cancer-care/how-cancer-treated/immunotherapy-and-vaccines/what-are-cancer-vaccines>

[7] <http://www.cancer.net/node/18569>

[8] <http://cancergenome.nih.gov/>

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

[10] <http://www.cancer.net/node/29596>

[11] <http://www.cancer.net/node/24482>

[12] <http://www.cancerprogress.net/timeline/brain>

[13] <https://www.conquercancerfoundation.org/research-results>

[14] <http://www.cancer.net/node/18571>