

# Neuropsychiatric (Neurobehavioral) Symptoms



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*Providing and pursuing answers*

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Founded in 1973, the American Brain Tumor Association (ABTA) was the first national nonprofit organization dedicated solely to brain tumor research. The ABTA provides comprehensive resources that support the complex needs of brain tumor patients and caregivers, as well as the critical funding of research in the pursuit of breakthroughs in brain tumor diagnoses, treatments and care.

To learn more about the ABTA, visit [abta.org](http://abta.org).

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# Neuropsychiatric (Neurobehavioral) Symptoms

## INTRODUCTION

Brain tumors and their treatments can cause a number of mood, behavioral or cognitive symptoms that present or overlap like mental health disorders. These are called neuropsychiatric symptoms, also known as neurobehavioral symptoms. If untreated, these symptoms can cause significant change in the patient's personality, mood, and behavior. In extreme cases, these changes can lead to situations in which the patient, their caregiver, loved ones or others are placed at risk.

## SYMPTOMS

The following is a list of common psychiatric symptoms that can be experienced by those diagnosed with a brain tumor:

- > **Abusive behavior (verbal, emotional, physical)**
- > **Aggression:** Hostile or violent attitude or behavior
- > **Anger:** A strong feeling of displeasure and hostility
- > **Anxiety:** Excess fear or worry
- > **Apathy:** A lack of concern, interest, motivation
- > **Confusion:** A lack of orientation or not knowing what to do next
- > **Coping (adjustment) difficulty:** Difficult emotions (e.g., sadness, worry) or behaviors that arise in response to stressors
- > **Delirium:** A sudden change in mental status, including confusion
- > **Delusion:** A belief that contradicts reality
- > **Depression:** A group of symptoms that includes sadness and loss of interest in pleasurable activities

- > **Flight Risk**: A tendency to leave one's environment suddenly without notifying others
- > **Grandiosity**: A sense of superiority; sometimes associated with mania/hypomania
- > **Hallucination**: Hearing, seeing, or smelling something that isn't there
- > **Impulsivity/Disinhibition** (e.g., spending, sexual behavior): Acting with little or no forethought or consideration of consequences; lack of restraint
- > **Insomnia and sleep-wake cycle disorder**: Can include staying awake at night or sleeping in the day
- > **Mania/Hypomania**: A state of inflated self-esteem, decreased need for sleep, increase in goal-directed activity, difficulty maintaining attention, racing thoughts, and excessive involvement in pleasurable activities. Hypomania is a milder form of mania.
- > **Memory loss**: From transient to profound (like dementia)
- > **Profound personality change**: Exaggeration of underlying personality traits or the development of new ones
- > **Rage**: Violent, uncontrollable anger
- > **Paranoia**: An unwarranted belief that others intend to cause harm, sometimes accompanied by unreasonable self-importance
- > **Psychosis**: A general term for loss of contact with reality; may include delusion or hallucination
- > **Social withdrawal**: Less involvement in social activities
- > **Suicidal behavior**: Can include a number of behaviors including talking about wanting to die and gestures toward harming oneself
- > **Violent behavior**: Physical, sexual, or emotional attacks

## IMPACT ON PATIENTS

Patients who experience neuropsychiatric symptoms related to a brain tumor may experience consequences beyond the symptoms themselves. They may miss treatment appointments, place themselves in danger doing things they can no longer do safely (e.g., driving, handling firearms), spend money recklessly, avoid or confuse medication doses, or break ties with needed social supports.

## IMPACT ON CAREGIVERS AND OTHER LOVED ONES

A person's neuropsychiatric symptoms related to a brain tumor can be incredibly distressing for loved ones. The following are examples of how neuropsychiatric symptoms can affect family and friends:

- > **Grief:** When a patient's personality and/or behavior changes, his/her loved ones "lose" the person they knew.
- > **Family roles:** A family or friend "loses" the loved one they knew. They must decide if -- then try to figure out how -- to begin a new relationship with the patient as they are. For example, a patient who used to take a lead role in the family finances and decisions becomes passive, child-like, or too impaired to participate. A spouse, sibling or child may start to fulfill those roles.
- > **Physical safety:** The patient can act in ways that jeopardize the safety of their loved ones or others in the community. For example, patients can become violent or drive motor vehicles when prohibited by a doctor.
- > **Financial security:** A patient who is manic or impulsive can spend family money recklessly or cause damage to property.
- > **Emotional well-being:** Some patients experience personality change or other symptoms which cause them to act in ways that are different from how they used to be. They may treat loved ones in a manner that is cold, mean, or even abusive, creating risk for emotional trauma.

- > **Damaged relationships:** A patient may harm or end previously cherished relationships through neglect, abuse, or infidelity.

## POSSIBLE CAUSES

Neuropsychiatric symptoms related to a brain tumor often have several causes. They are often a combination of:

- > Tumor location (e.g. frontal lobes and medial frontal structures)
- > Injury caused by the tumor – and its treatments – in the anatomic area affected by the tumor
- > Age and general health
- > Other health issues and their treatments. Common examples include:
  - > Corticosteroid medications (e.g., dexamethasone)
  - > Anti-epileptic medications (e.g., levetiracetam)
  - > Biochemical and electrical changes in brain due to tumor
  - > Changes in brain due to treatment side effects
  - > Elevated intracranial pressure
  - > Changes in cytokine levels
  - > Family history of psychiatric disease

## PROFESSIONALS WHO CAN HELP

Professional intervention may be needed if you or your loved one is experiencing neuropsychiatric symptoms. These are the types of professionals who can help:

- > **Neuropsychiatrist:** A psychiatrist who diagnoses and treats disorders of the brain which cause mood, behavioral or cognitive symptoms
- > **Behavioral Neurologist:** A neurologist who specializes in behavioral and cognitive functions of the brain
- > **Behavioral Oncologist:** An oncologist trained to care for the emotional and behavioral health needs of

patients and their families; often available at cancer centers

- > **Counselor or Therapist:** Professional who provides counseling or therapy; can be a clinical social worker or clinical psychologist
- > **Psychiatrist:** A physician who diagnoses and treats mental health issues such as depression or other mood disturbances
- > **Neuro-Oncologist:** A doctor who specializes in cancer of the brain and the rest of the nervous system and is typically the primary coordinator of your care team
- > **Medical Oncologist:** A doctor who has special training in diagnosing and treating cancer in adults using chemotherapy, hormonal therapy, biological therapy, and targeted therapy
- > **Neurologist:** A doctor who diagnoses and treats disorders of the nervous system
- > **Neuropsychologist:** A psychologist who specializes in understanding how cognitive, emotional, and psychological functioning work in the brain
- > **Religious and Spiritual Leaders:** Many religious leaders have training in counseling and can offer guidance based on your spiritual needs

## EVALUATION & TREATMENT

There are many ways in which psychiatric symptoms can be evaluated and treated. These methods are discussed below:

- > **Clinical assessment:** A doctor may assess the patient to determine the presence and severity of symptoms.
- > **Neuroimaging:** If the patient has not been diagnosed with a brain tumor, an imaging test (such as a CT or MRI) can detect a mass in the brain which may be the cause of symptoms.
- > **Brain tumor treatment:** If a tumor is detected in the brain and is causing symptoms, treatment like surgery or radiation can relieve symptoms.

- > **Treating mass effect or increased intracranial pressure:** Brain tumors can press into healthy brain tissue, impairing brain function and causing symptoms. Symptoms can also be caused by build-up of cerebrospinal fluid or edema (inflammation).
- > **Early detection of symptoms:** Catching symptoms early on, before they progress, can limit the progression of symptoms.
- > **Patient/Caregiver education:** Knowing which symptoms to look for can help provide direction and expedite medical intervention.
- > **Referral to specialist:** Medical professionals who specialize in brain tumors can suggest treatment strategies. See the “Professional Who Can Help” section above for a description of different types of health care professionals who can assist.
- > **Change in current medications:** Some medications cause neuropsychiatric symptoms. In order to address the symptoms, a doctor may suggest changing the dosage of a current medication or trying a new medication.
- > **Psychiatric medication:** Many medications used for treating mental health disorders (e.g., antidepressants, antipsychotics, mood stabilizers) are also effective in treating the neuropsychiatric symptoms related to brain tumors.
- > **Counseling/Psychotherapy:** Patients and caregivers alike can benefit from learning new coping strategies.
- > **Lifestyle changes:** Eating healthy, getting enough sleep, and reducing stress can help improve physical and emotional well-being.

## WHEN PATIENT WILL NOT ACCEPT HELP

People who experience neuropsychiatric symptoms due to a brain tumor sometimes avoid help or treatment. This can be caused by their limited awareness of any problems, stigma associated with mental health issues, or by the symptoms themselves, which interfere with their ability to make reasonable decisions about their



health (e.g., paranoia, mania). Loved ones are often confused and distressed by this. Making matters worse, the person diagnosed with a brain tumor may act in ways that threaten his/her own safety, the safety of their loved ones, and relationship and financial security. If your loved one is behaving in a way that puts him/her or anyone else at risk, the following strategies may be helpful:

- > **Crisis Response Tools:** When a loved one acts in ways that is threatening to himself/herself or others, it can be difficult to know what to do next. Learn how to de-escalate a crisis situation by reading these
  - > [Respond in a crisis](#)
  - > [LEAPS model](#)
- > **Mental health warrant:** You can contact your local court to request that a mental health warrant be filed for your loved one. This warrant may have another name, like “civil commitment”, “writ” or “order for detention and examination”. If the court approves the warrant, a law enforcement officer will take the patient in custody to ensure that he/she is evaluated by a doctor. If the doctor finds evidence of symptoms that require treatment, a referral for treatment may be made. This treatment may be involuntary, and the patient may be placed in a psychiatric treatment facility until he/she is stable. Different states have different laws regarding mental health warrants, so speak with a municipal court representative, law enforcement officer, or a lawyer for guidance.
- > **Involuntary psychiatric hospitalization:** If a patient is in imminent risk of harming him-/herself or someone else, you may call emergency services (911). If the patient exhibits signs of psychiatric instability and is a risk to self and/or others, he or she may be placed in involuntary psychiatric care. In this setting, the patient is detained and treated for as long as is necessary until stabilized. Different states have different laws around involuntary psychiatric hospitalization. To learn about laws for involuntary

hospitalization in your state, visit the [Treatment Advocacy Center website](#). You may also speak with a lawyer or local law enforcement agent.

- > **Crisis Intervention Team (CIT)**: Some local police departments train officers to address crisis situations. These officers are trained in techniques aimed at de-escalating situations and avoiding violence or detention as a solution. Learn more about CIT by visiting this [website](#).
- > **Emergency Services**: When unsure or worried about the safety of the patient or others, call 911.
- > **Local Resources**: Learn your county's emergency psychiatric resources. County health departments and police departments can assist you.

## REFERENCES

[Psychiatric Symptoms in Glioma Patients: From Diagnosis to Management](#) (2015)

[Psychiatric Aspects of Brain Tumors: A Review](#) (2015)

## ABTA RESOURCES

The ABTA offers support and information about brain tumors and their treatment and care.

The ABTA website, [abta.org](http://abta.org), is a comprehensive and trustworthy source of brain tumor information, including the following:

- > **Information about brain tumors:**
  - > Symptoms and side effects
  - > Diagnosis
  - > Types of brain tumors
  - > Treatment options
  - > Support and resources
  - > Caregiving information
- > **Patient education publications** related to tumor types and treatment options offered at no charge.
- > **Webinars** featuring nationally recognized health, medical and scientific experts on a range of brain tumor topics.
- > **Local resources** including support groups and patient education conferences.
- > **CareLine** 1-800-886-ABTA (2282) and email ([abta cares@abta.org](mailto:abta cares@abta.org)) are staffed by caring professionals who are available Monday–Friday, 8:30 a.m.–5 p.m. CT.
- > **ABTA CommYOUUnity™ Connect** matches brain tumor patients or caregivers with someone who has been through a similar journey. Our trained volunteer mentors provide broad insight and support that ranges from a single phone call to lasting friendships. Visit [abta.org/commYOUUnity-connect](http://abta.org/commYOUUnity-connect) for more information.
- > **Connections**, our online support community, connects those impacted by a brain tumor diagnosis with each other to share information, experiences, support and inspiration. Unlike other social media outlets, ABTA's Connections site (provided through [Inspire.com](http://Inspire.com)) is a safe and more private setting where members can share their personal stories. Learn more at [abta.inspire.com](http://abta.inspire.com).
- > **Brain tumor educational conferences** The ABTA hosts a national conference annually in Chicago. Regional community meetings are also offered in select locations across the country. Renowned experts from top brain tumor centers present the latest advances in brain tumor research, treatment and care. Visit [abta.org](http://abta.org) for more information.



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