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# TRAUMATIC BRAIN INJURY (TBI): INFORMATION FOR PARENTS

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Each year, as many as 4 out of 100 people experience a traumatic brain injury, resulting in approximately 100,000 hospitalizations. Traumatic brain injury (TBI) is defined as either a physical blow or an acceleration/deceleration (rapid moving and a sudden stopping) injury severe enough to require medical attention. It is more common in children than adults, and more common in males than females. Unfortunately, TBI can result in many intellectual, emotional, and social difficulties. The wide range of problems can mirror almost all academic, behavioral, or social problems seen in schools.

## Basic Facts

**Definition.** Generally, for an injury to be classified as a traumatic brain injury there must be at least a momentary loss of consciousness, some amnesia after the injury happened, and some confusion or disorientation for a brief period following the injury. Traumatic brain injuries are categorized as mild to moderate to severe, with the designations based on the length of time that the person is unconsciousness, the length of the period of memory loss, and the presence of physical injuries (including skull fractures or other broken bones). Mild head injuries are more common than moderate injuries, and moderate injuries are more common than severe injuries.

**Causes.** Motor vehicle accidents, sports related injuries, falls, and physical assault are the most frequent causes of TBI in children. Even a common activity such as riding a bicycle can cause thousands of head injuries each year (especially when riders do not wear helmets).

**Mild head injuries.** Children with mild head injury do not require extended hospitalizations (or in many cases any hospitalization at all), and they often return to school soon after injury. Many children, though, with what is classified as a mild head injury, will have at least some lasting difficulties (most research indicates that this can be about one in three children). While the difficulties experienced by these children can cover a wide range of specific symptoms, most problems can be grouped into the following general areas:

- Difficulties dealing with novelty including unfamiliar tasks or situations with even superficial changes
- Difficulties with tasks requiring maintaining attention and alertness over time
- Difficulties with tasks that require flexibility and adaptation as the child progresses
- Difficulties with tasks requiring what could be called social or emotional intelligence
- Behavioral changes including lack of self-control (called *disinhibition*) and impulsivity or apparent apathy and lack of motivation

**Moderate to severe head injuries.** Unfortunately, most children with moderate and all children with severe head injuries will have extended hospitalizations and go through rehabilitation. When the children return to school they will often already have special accommodation needs identified. Regrettably, the difficulties encountered by children with more severe injuries tend to be permanent.

## Recovery From Traumatic Brain Injury

**The course of recovery.** For children with mild and even for many with moderate head injury there is often a rapid recovery of a substantial portion of pre-injury abilities in the first year. More moderate gains may continue for roughly 2 more years. Problems still evident 3 years following an injury are likely to be permanent. Verbal language abilities and well-learned material recover more rapidly. The early recovery of language abilities may leave these children in the difficult position of seeming to be more

capable and recovered than they actually are, and this creates problems.

The course of head injury in children is complicated by the fact that the brain continues to develop and mature well into an individual's mid-twenties. While in adults the alternatives following uncomplicated TBI are either improvement or persistence of deficits, in children a third pattern is possible. Symptoms may emerge months or even years after the injury event, at a time when damaged but previously inactive brain systems typically mature.

**Developmental factors.** Until very recently, the fact that a child's brain is in an ongoing state of development was viewed as a source of optimism for recovery following a head injury, more so than for an adult. It was thought that if certain areas of a child's brain are damaged, other not yet developed areas will take over the functions of the damaged areas. This is called *neuroplasticity*. However, more recent studies have indicated that, in fact, the outcome for children suffering TBI is *worse* than the outcome for a similarly injured adult (even though some healthcare providers who are not expert in the field still believe that neuroplasticity is valid). It seems that TBI in a developing brain may result in more severe deficits than in a mature brain. In fact, there is evidence that the younger the child at the time of injury, the more negative the outcome. As an example, children younger than age 10 are more at risk for significant cognitive impairment than are adolescents.

**Expectations for recovery.** The effects of mild head injury are often subtle and not easily documented without specialized testing. It is often difficult for families and for those who work with children to connect a child's learning problems to a mild head injury the child may have had that occurred months or even years previously. The child may be mistakenly thought as being unmotivated, lazy, negative, or lacking in ability. These mistaken perceptions will only compound difficulties and will interfere with the child's recovery or adaptation to a disability. In particular, a child with mild head injuries may appear normal and may seem recovered enough to be able to return to routine activities that the child engaged in before the injury. However, more often than not, the child is *not* ready and has *not* sufficiently recovered. A more realistic expectation will be for a *gradual and cautious* return.

Physical, psychological, and environmental factors affect recovery. For more severe injuries, physical factors are generally more significant. For mild head injuries, psychological and environmental factors can be more significant. The most common problems experienced by adults who suffered TBI as children are in social adjustment and quality of life.

## Intervention Following the Injury

Children may require short- or long-term physical therapy, occupational therapy, and/or speech therapy. They may also need special education services at school to deal with academic and behavioral difficulties resulting from the injury. In other cases, minor modifications of the regular school program may be sufficient. School personnel and parent advocacy organizations can help explain these services and your child's rights.

Some children benefit from medication following TBI to control seizures, to help focus attention, or to reduce anxiety and regulate mood. Medication to address behavioral and emotional issues is best used in combination with behavioral management and modifications of the environment. Supportive counseling either through your local school or through a community agency can also be helpful. Families may also benefit from support groups and counseling to maintain realistic expectations.

## What Parents Can Do

**An ounce of prevention is worth a pound of cure.** It is far better to prevent a traumatic brain injury than to deal with the consequences of one. Use child safety seats and seat belts. If your children are participating in high-risk activities (bicycling, horseback riding, contact sports) insist that they wear protective headgear.

**Better safe than sorry.** Seek medical attention if your child has had even a momentary loss of consciousness or period of unresponsiveness or confusion, grogginess, visual problems, difficulty remembering what happened immediately before or after a head injury, a headache that develops a few hours after an injury, or vomiting, uneven pupil size, or limb weakness on one side. If you are not sure whether or not to see a physician, *see a physician*.

**Don't keep schools in the dark.** The types of intellectual and behavioral deficits seen following mild head injury are often first noticed in school. If school personnel are not aware that your child has had a traumatic brain injury, their expectations may not be consistent with your child's capabilities. This discrepancy can lead to the stress and negative conditions that prolong difficulties. Once school personnel are aware of your child's head injury, they can work with you to help manage any academic or behavioral difficulties your child may experience.

**Let nature take its course.** An important role of the family is to maintain realistic optimism and to allow the natural recovery process to occur.

**Be your child's advocate.** Particularly with mild head injury, difficulties may be subtle and inconsistent.

Therefore it will be important for you to be know about your child's needs and performance at school, and to work cooperatively with school personnel.

## Resources

- Begali, V. (1996). *Head injury in children and adolescents: A resource and review for school and allied professionals*. Brandon, VT: Clinical Psychology Publishing. ISBN: 0884220982.
- Cattelani, R., Lombardi, F., Brianti, R., et al. (1998). Traumatic brain injury in childhood: Intellectual, behavioral, and social outcomes into adulthood. *Brain Injury*, 12, 283.
- Granacher, R. P. (2003). *Traumatic brain injury: Methods for clinical and forensic neuropsychiatric assessment*. New York: CRC. ISBN: 0849314291.
- Schoenbrodt, L. (2003). *Children with traumatic brain injury: A parent's guide*. Bethesda, MD: Woodbine House. ISBN: 0933149999.

## Websites

- Brain Injury Association of America—[www.biausa.org](http://www.biausa.org)  
(English and Spanish pages)
- Brain Injury in Children—[braininjury.com/children.html](http://braininjury.com/children.html)

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The National Association of School Psychologists (NASP) offers a wide variety of free or low cost online resources to parents, teachers, and others working with children and youth through the NASP website [www.nasponline.org](http://www.nasponline.org)

and the NASP Center for Children & Families website [www.naspcenter.org](http://www.naspcenter.org). Or use the direct links below to access information that can help you improve outcomes for the children and youth in your care.

**About School Psychology**—Downloadable brochures, FAQs, and facts about training, practice, and career choices for the profession.  
[www.nasponline.org/about\\_nasp/spsych.html](http://www.nasponline.org/about_nasp/spsych.html)

**Crisis Resources**—Handouts, fact sheets, and links regarding crisis prevention/intervention, coping with trauma, suicide prevention, and school safety.  
[www.nasponline.org/crisisresources](http://www.nasponline.org/crisisresources)

**Culturally Competent Practice**—Materials and resources promoting culturally competent assessment and intervention, minority recruitment, and issues related to cultural diversity and tolerance.  
[www.nasponline.org/culturalcompetence](http://www.nasponline.org/culturalcompetence)

**En Español**—Parent handouts and materials translated into Spanish. [www.naspcenter.org/espanol/](http://www.naspcenter.org/espanol/)

**IDEA Information**—Information, resources, and advocacy tools regarding IDEA policy and practical implementation.  
[www.nasponline.org/advocacy/IDEAinformation.html](http://www.nasponline.org/advocacy/IDEAinformation.html)

**Information for Educators**—Handouts, articles, and other resources on a variety of topics.  
[www.naspcenter.org/teachers/teachers.html](http://www.naspcenter.org/teachers/teachers.html)

**Information for Parents**—Handouts and other resources a variety of topics.  
[www.naspcenter.org/parents/parents.html](http://www.naspcenter.org/parents/parents.html)

**Links to State Associations**—Easy access to state association websites.  
[www.nasponline.org/information/links\\_state\\_orgs.html](http://www.nasponline.org/information/links_state_orgs.html)

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**Success in School/Skills for Life**—Parent handouts that can be posted on your school's website.  
[www.naspcenter.org/resourcekit](http://www.naspcenter.org/resourcekit)

