



## The truth about traumatic brain injury in children

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### Dispelling common myths about brain injury

Media coverage surrounding the tragic deaths of promising student-athletes from head injuries has raised public awareness about traumatic brain injury, or TBI. Indeed, TBI is the leading cause of death and disability among children 0 to 4 years old and adolescents 15 to 19 years old.

Unfortunately, this heightened public awareness has not translated into broader public understanding of prevention, symptoms, and treatment of TBI.

Recently, we asked three experts in the field of pediatric traumatic brain injury to discuss four common myths about childhood TBI:



- Mark J. Chelder, Ph.D., clinical coordinator of the Brain Injury Program and Neuropsychology Services at [Bacharach Institute for Rehabilitation](#) in Pomona, New Jersey
- Margaret Fankhauser, D.O., medical director at [Origami Brain Injury Rehabilitation Center](#) in Mason, Michigan. Her board certifications are in Pediatrics and Physical Medicine and Rehabilitation
- Kristi Pardue, SLP, outpatient brain injury program manager at [Elks Rehab Hospital](#) in Boise, Idaho

#### Myth 1 - A concussion and a brain injury are different

"Parents think that there is a difference between a concussion and a traumatic brain injury," Dr. Chelder says. "We stress to parents that a concussion is a traumatic brain injury. A concussion may be mild and without radiological evidence of bleeding or bruising on the brain. However, in terms of the symptoms and the impact on someone's life, a TBI and concussion are the same."

#### Myth 2 – A second blow improves memory

Dr. Chelder laughs, "I call this 'Gilligan's Island' syndrome. In the old TV sitcom, a character lost his memory when he was knocked on his head with a falling coconut. He regained his memory when he was hit on the head with another coconut. When patients suggest this possibility to me, they say it jokingly, but are fishing to see whether it could be actually true. The truth is that the effects of a second blow to the head can result in a worse traumatic brain injury."

"What parents might not understand is the severity of a TBI and the grave danger of receiving a second one," Ms. Pardue adds. "Second impact syndrome is where an athlete has sustained a concussion, but before the first concussion has healed, receives a second blow to the head. It can be a very minor blow, but could result in a major brain injury, leaving the person permanently disabled or in extreme cases, even lead to death. As professionals, we work with community members, athletic trainers, and physicians to come up with ways to get information out to parents of athletes about the danger of second impact syndrome."

#### Myth 3 – Children are resistant to traumatic brain injury

At one time it was assumed that children were more resistant to brain trauma than adults because their developing brains could "rewire" over time.

Dr. Chelder asserts that this myth is not only untrue, but dangerous: “One of the things families come in with is the idea that younger children might recover better or faster than older children. The research doesn’t support this. In fact, children younger than seven years might face more impairment than children over that age. The reason is because younger children have more brain development yet to occur. They are more vulnerable to alterations in their brain function.”

Dr. Fankhauser notes, “The brain continues to develop until 24 years of age. If a child is injured before the brain is fully developed, that specific area of the brain is not going to mature. For instance, the ability to make informed decisions begins to develop at 12 years of age. Decision-making involves the frontal lobe area—the area most frequently injured in motor vehicle accidents. When a child is injured at five or six years old, the problem won’t appear until they reach age 12.”

She continues, “I tell parents to ensure the child is sounding out and remembering words, maintaining their grade level in reading, and making inferences from what they read. Parents also need to monitor the child’s social skills. Many children become class clowns because of their impulsivity and disinhibition or to take the attention away from the fact that they are not doing well.”

#### **Myth 4 – There are no long-term effects**

According to Dr. Chelder, “Not everyone who has a traumatic brain injury comes to develop long-term effects. It is difficult to predict which patients will develop long-term problems, and that’s why we need to address them early.” Yet he hastens to add, “People wrongly believe that a TBI is harmless and never results in long-term problems or brain damage.”

He goes on to explain, “One of the expectations families have is seeing progress along the spectrum of severity. For mild to severe cases, both parents and children have difficulty accepting how long recovery could take. This is especially true if the child has other injuries, like fractures, that heal up more quickly than the brain has recovered. This can create frustration and impatience. Some children actually get worse in certain sections of recovery.”

Dr. Fankhauser adds, “During an initial emphasis on the recovery process, parents are very good about bringing the child to therapy. A year or two later, therapy becomes a burden and they want life to be back to normal. The fact that traumatic brain injury is a chronic problem, not a short-term one, makes it difficult for them to stay with the treatment process.”

#### **Not a myth - Education is essential**

“We as professionals need to do a better job educating families and school systems about signs to watch for and what resources are available to them,” says Ms. Pardue. “One resource is the signs of concussion on the Centers for Disease Control and Prevention website, <http://www.cdc.gov/concussion>. Another resource is the [Brain Injury Association of America](#) (BIAA), a national network of state affiliates and local chapters across the country that provide help.”

Dr. Chelder mentions, “We like to say to parents that prevention is the only cure. There is no other cure for traumatic brain injury other than trying to prevent the first one from happening or a second one from occurring after the child has had one injury. We sit down with a patient and a family to individually educate them. One of things we help the parents understand is that a traumatic brain injury is about the child’s welfare, recovery, and future. It is not about whether or not they can pitch in the finals of the Little League game or if they can return to a star position. It is about giving a child the time they deserve to recover from the injury.”

“I foresee in the future of pediatric traumatic brain injury that professionals will focus on preventive education in schools, communities, sports, and with other medical practitioners,” Ms. Pardue concludes. “Integrative teams between hospitals and schools will make tracking and evaluation easier. Another goal is giving front-line physicians (i.e. emergency room physicians) educational resources on pediatric traumatic brain injury, which allows them to connect a brain-injured child to the appropriate healthcare networks that best meet their recovery needs. Education is key; the more preventative education we do, the less often brain injuries will occur.”

#### **About the authors**

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