

## Children with Previous Concussions Show Longer Recovery Time

Chronic traumatic encephalopathy (CTE) is a degenerative dementia-like brain disease linked to repeated brain trauma. Recently, researchers reviewed two youth cases, one case in which CTE was found in an 18-year-old high school athlete and another in a Marine veteran in his 20s, both of whom suffered multiple concussions. Cases like these lead researchers to become more concerned with youth concussions.

Concussions, or mild traumatic brain injuries (mTBI), send 173,000 children to the emergency room annually, not including the children seen by primary care doctors or specialists. In addition, an estimated 70-90% of all concussions are undiagnosed. When athletic trainers are present, there are 4-8 times more concussions diagnosed than when they are not on the field, proving that coaches and players alone do not properly diagnose concussions. Parents should not be afraid of concussions, but should be aware of the symptoms and the importance of resting. If a player suffers a concussion during practice, a game or a



situation off the field, it is crucial not to resume any activity until all of the symptoms stop. Symptoms of concussions include headache, dizziness, neck pain, nausea/vomiting, balance problems, sensitivity to light/hearing, confusion, difficulty concentrating and in rare cases, loss of consciousness and amnesia.

A study released earlier this year in *Pediatrics* looked at patients 11-22 years old who visited the emergency room for a concussion. While previous studies showed that most people exhibit no symptoms after 7-10 days, the current study showed patients who had no previous concussions were symptom free a median 12 days after the injury, suggesting children may need more recovery time than originally thought.

If the patient had multiple, previous concussions it took generally 28 days to be symptom free, more than double the duration of symptoms compared to those with no previous concussions. For patients with at least one previous concussion occurring within the last year, it usually took about 35 days to be symptom free, almost triple the median duration of symptoms for those who had no previous concussions. Conversely, there was no significant difference in the median number of days when the single

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previous concussion occurred more than a year earlier. This data suggests the proximity of the concussions and the total number of concussions have an effect on the duration of the symptoms, and there is a timetable where repeated trauma will have a greater effect.

While this study used one year as a threshold, it is unknown what the threshold actually is. It is important to find this window in order to prevent extended recovery time and protect children.



Children's brains are still developing, so not having a long enough time period for rest and recovery can inhibit a child's development. For this reason, doctors recommend a conservative approach for deciding when pediatric and adolescent athletes are ready to return to activity after a concussion.

Another important message from the study for parents is to not consider the concussion data so alarming that it causes people to pull their children out of youth sports. The Center for the Study of Traumatic Encephalopathy (CSTE) reminds parents, "There is no available evidence that occasional, isolated or well-managed concussions give rise to CTE." The benefits of physical activity outweigh the risks of a concussion, but only when concussions are diagnosed and treated properly with sufficient physical and cognitive rest.

Eisenberg et al. Time interval between concussions and symptom duration. *Pediatrics*. 2013; 132: 8-17.

### What to do if your child has a concussion

- Strict physical and mental rest is recommended initially
- Make sure they awaken every 1 to 2 hours for 24 hours, or as recommended by the treating physician
- Do not give any medicine, including nonprescription acetaminophen or aspirin, until the diagnosis is certain because these may mask developing symptoms
- Return to play should be discussed with the treating physician, factors include length of time of unconsciousness, amnesia and other altered brain functions and the number of previous concussions
- Athletes should not return to play until all symptoms have completely subsided and remain that way during and after a physical exertion test
- Remember, even after all symptoms have resolved, brain healing may not be complete

