

"What a long headache you've had!" Lingering concussion symptoms may not be what they appear in kids

For most children with a concussion, their symptoms disappear in 1-2 weeks. However, up to 15%-30% of children with a concussion will have symptoms that last 3 months or more. On-going symptoms are important for healthcare providers to consider as they guide children through recovery from a concussion. For example, current recommendations suggest that children should not return to sports while still having symptoms. Similarly, continuing symptoms may require special attention for students in the classroom. While on-going symptoms could be a sign that the brain has not healed after a concussion, there may be other explanations. Proper treatment for any on-going symptoms requires that healthcare providers understand their cause.

Symptoms experienced after a concussion are not specific to concussion. Symptoms, such as headache, nausea, mood changes and sleep problems, may have other causes but the symptoms are mistakenly attributed to the recent concussion. Research in adults has shown that patients with psychological traits like depression and anxiety present before a concussion are more likely to have symptoms that take a month or more to go away. This relationship has not been as well explored in children.

We studied children who suffered a concussion and were initially evaluated in a pediatric emergency department. We then followed them for 1 month to observe differences between children whose symptoms resolved and those whose symptoms did not. Specifically, we explored how pre-existing traits toward general psychological maladjustment to stress, academic competence, somatization (experiencing physical symptoms in response to stress) and post-injury anxiety and injury perception contributed to experiencing on-going symptoms. We included children 8-18 years old with sports-related and non-sports-related causes of concussion (e.g. falls, motor vehicle crashes).

Similar to other studies, 21% of the children in our study had on-going symptoms one month after they suffered their concussion. When comparing the children who had on-going symptoms to those who did not, there was no difference in the cause of their injury, sex, age, history of previous concussions or the initial severity of their concussion symptoms. For 3 of 5 of the psychological traits, we also did not see a difference between the two groups. However, two traits – pre-injury somatization and post-injury anxiety – were significantly greater in the 21% that still had symptoms one month after their concussion. The tendency to somaticize was the trait most strongly associated with on-going symptoms. This association continued even after we took age and sex into consideration. Lastly, the proportion of children who had abnormal scores on our test of somatization was almost three times higher (34.2% vs. 12.8%) for the children with on-going symptoms than for the children whose symptoms went away.

What these results suggest is that some children who continue to report on-going concussion

symptoms one month after injury have a cause other than the concussion as the source of the symptoms. Some children may report on-going symptoms because that is how they deal with stress the concussion causes rather than because the brain has not recovered from the injury. This is very important for parents and healthcare providers to recognize because treatment may be different for these children. For example, avoidance of sports and school work may not help. However, evaluation by a specialist like a neuropsychologist may be very beneficial. These specialists are trained to distinguish between different causes of ongoing symptoms and can provide appropriate therapy. We concluded that children who still have concussion symptoms one month after their injury may benefit from referral to a specialist who can explore alternate explanations for the ongoing symptoms and provide necessary treatment.

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