

Classifying concussions could help kids

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It's estimated that more than a half million kids in the U.S. go to the hospital each year with a concussion.* That's an average of a kid per minute- every minute of every day. Some concussions are worse than others but it might surprise you to know that almost all of them are treated the same. New research is pointing toward a more sophisticated way of diagnosing and treating concussions in kids.

13 year old Dustin Edens had to work on his game by himself for a few days, after a recent run-in with a teammate during basketball practice.

"He drove right around the pick and came at me and hit me with his shoulder first, right into my chest, and my head bounced off the ground," says Dustin.

It was Dustin's third concussion in two months, although it might surprise you to know that it's often hard for doctors to tell where one concussion ends and another begins.

"We don't have tests that tell us when someone has recovered from their concussion," says Karl Klamar, MD at Nationwide Children's Hospital.

Instead doctors have to rely mostly on patients to tell them when they feel better. Things like headaches, fatigue, and irritability can all be signs that the concussion is lingering, and in some cases they can linger a long time.

"There is this group of kids that are at risk and do seem to be able to

continue to have these symptoms even up to a year after their injury," says Keith Yeates, PhD at Nationwide Children's Hospital.

To better understand which kids may be at risk Doctor Yeates, of Nationwide Children's Hospital followed nearly 200 children with concussions for a year. His study, published in *Pediatrics*, found that while most kids had few problems, one out of every four experiences significant post concussive symptoms, some of which never fully resolved. And those whose concussions resulted in a loss of consciousness, amnesia or an abnormal CT scan were more likely to have symptoms that persist.

"We do know that there are kids at risk, and we can begin to identify them, monitor them over time and provide appropriate intervention and assistance if they have these symptoms," says Dr. Yeates.

Doctor Yeates believes classifying concussions as high risk or low risk may help physicians determine which patients need special attention, which could give them a better "shot" at a faster recovery. So how do you know if your child has suffered a concussion? For tips and symptoms you should watch for, log on it www.NationwideChildrens.org, keyword "concussion."

*Longitudinal Trajectories of Postconcussive Symptoms in Children With Mild Traumatic Brain Injuries and Their Relationship to Acute Clinical Status, *Pediatrics*, Volume 123, Number 3, March, 2009.

It's well known that mild traumatic brain injuries and concussions are a common occurrence in children and adolescents, especially young athletes. But what researchers at Nationwide Children's Hospital have found is that although not all concussions are the same, they are often

treated in the same way - a potential problem when it comes to long-term health outcomes.

The research, published in the March issue of *Pediatrics*, studied a sample of nearly 200 children ages 8- to 15-years-old who suffered concussions. The study looks at the trajectory of the children's symptoms over the year after their injuries and found that one out of every four children in the study experienced significant post-concussive symptoms. Also, those with more severe concussions, such as those resulting in a loss of consciousness, post-traumatic amnesia, or an abnormal CT scan or MRI, were more likely to have symptoms that persisted.

Keith Yeates, PhD, director of the Center for Biobehavioral Health at The Research Institute at Nationwide Children's Hospital and the study's lead author, believes this study shows the need to classify concussions based on their severity as either high- or low-risk so patients can receive better treatment.

"This study provides reassurance for parents of kids who suffer first-time concussions because we can see that more often than not they recover fully within a short amount of time," said Dr. Yeates, also a professor of Pediatrics, Psychology and Psychiatry at The Ohio State University College of Medicine.

"However, the study also shows that kids who are at risk because their concussions are more severe need to be monitored for a longer period of time as their symptoms may last longer."

Parents of kids suffering from severe or multiple concussions need to pay attention and track their child's symptoms across time. Post-concussive symptoms, according to Dr. Yeates, can be divided into three groups: somatic, cognitive, and emotional. Somatic symptoms like headaches and fatigue generally resolve themselves quickly. However,

cognitive symptoms like trouble paying attention and forgetfulness may persist longer.

"Parents should pay particular attention to these symptoms when they last more than a month or two and report all ongoing symptoms to their child's doctor so they can intervene appropriately," said Dr. Yeates.

Source: Nationwide Children's Hospital

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