

Second Impact Syndrome in Children

Source: Produced by Vicky Youcha and Brian King

Video Link: <http://www.brainline.org/content/multimedia.php?id=3495>

Dr. Jeffrey Barth: With children and mild concussion we also have another thing that's very controversial in literature and that's a disorder referred to as Second Impact Syndrome. This apparently only happens in younger people. There are two recorded cases of people over the age of 21 who have had this injury and all of the rest are below 21. Now it's not a great deal of cases, there's about 30, 35 cases and they are case studies so there hasn't been a controlled study on this issue so there is some controversy as to whether it actually exists or not. But these are the people that have a mild head injury and then within hours or a few days have a second mild head injury on top of it and this is characteristic of violent sports or contact sports.

Where you see it the most, this would be in football players for example is where we find many of these injuries and we believe it's due to the fact that once you have a mild head injury it takes you time to recover, to get back to normal glucose utilization and so on, this five to ten day curve and the person is getting their injury before their brain has had a full chance to recover. Why it may be happening in children more than adults is that their brain in fact may be more vulnerable based on the model I just talked about with mice, that it takes longer for the brain to get back to normal.

This makes sense on another practical level with regard to sports injuries. That is, for example if you strain your knee, the ACL, you know that coaches on the sidelines or at basketball games when they get a sprained knee, they take players out of the game, they don't let them play through that injury which is kind of typical of athletes they like to play through things and play through that pain. They pull them out of the game because they know if they have a strained knee they are vulnerable to that knee in fact having a much more severe injury associated with the second injury on top of it and I think we're dealing with similar types of dynamics here.