

## Identifying a Concussion and Its Long- and Short-Term Effects

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**Dr. Jeffrey Barth:** The issue of young people, and I'm going to talk about college level and below, having head injuries, it's important to manage those injuries correctly. The first thing is to identify whether they've actually had a concussion or not and a concussion in a younger person is more in essence severe than in an older person. So it's identifying the concussion. How do we tell if someone's had a concussion on the field? Well they will perhaps know themselves. They'll feel woozy. They'll feel what some people refer to as "dinged." They'll see stars, that sort of thing. They'll be confused and hopefully the players around them will notice that as well. When that happens, they need to be removed from the game immediately. That's the first thing. So you, you have to count on the person reporting the fact that something happened to them. They feel confused or they're dazed. They may get over that very quickly and that sometimes interferes with them reporting that injury.

Often times parents are pretty good at picking that up. They see their child on the football or soccer field for example and they see them having difficulty. That's a warning sign. So the team physician, the athletic trainer, if you're lucky enough to have those folks there in observation, should be able to see these things. Hopefully they're educated on it and they would get that player out. The coaches should be educated to this and there's a, the legislature has passed a resolution. It may be more strong than a resolution, but that we should get education and assessment and management in all of our schools at this point. So part of that is related to this issue of identifying the concussion and pulling the child out.

Someone who has been diagnosed with a mild head injury in middle school, high school, and actually the college level should not return to games. The NCAA just two weeks ago came up with new guidelines and they're, they and the National Football League now have a rule - "one and done." So if you have one concussion, you are out of that game. So it's critical that you not go in and have that second head injury. Not that you're going to have second impact syndrome happen because it's a very rare thing but that brain is vulnerable no matter who you are right away after this mild head injury and a child is much more vulnerable. So you want to get them out of the game. You want to check their symptoms. You want to see if they actually had a concussion that can be done through a sideline evaluation. There's a thing called the SAC, the SAC, it's called the Standardized Assessment of Concussion, and it's a very brief mental status examination that you can do on the sideline and if a person does not reach a certain score, it probably means that they're not thinking too well and it probably indicates a concussion.

They should be kept out of any game situation or any practice situation until they are symptom free. So that's the sort of second rule. Remove them and then be sure they are symptom free before they go back. They do not go back in the same game and they may not be at practice and so on until they're symptoms are gone. What do I mean by symptoms? The confusion is gone, dizziness, headache, any neurological symptoms meaning diplopia or double

vision, balance problems and so on. Now if you're in the good situation with a good school that has implemented a very sophisticated program like what goes on in many of our colleges and all of the pros at this point, you may have some baseline neuro-cognitive testing that has taken place earlier in the season before the season begins and that's a very quick set of tests that are usually done by computer that will give you a baseline of how well you're thinking and remembering and doing problem solving. That baseline can be used after a concussion to compare a new testing.

So if a person has had a concussion and three days later they seem to be symptom free and they're doing fine, the first thing we would do is exert them a little bit and ask if any of the symptoms came back. So we'd just have them run a little bit, do some sit ups and push ups, jumping jacks, then say, Did your headache come back? Are you feeling dizzy, etcetera? And we're of course depending on them to be honest with us which is a whole 'nother issue and then if you had the baseline testing, if they were symptom free you would then perhaps give them that testing to see that they do as well or better than their baseline testing. There should be some practice effects so they should be able to do a little bit better actually. And then you're as sure as we can be at this point that that person has gotten over that concussion.