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CONCUSSIONS

Last month, I saw a teenager who "got his bell rung" when he had a helmet-to-helmet collision in a football game. He had blurred vision, poor coordination, and clouded thinking for several days, as well as nausea and a headache that lasted for an additional week (the other player was knocked out completely and spent two days in the hospital). Unfortunately, this scenario is all too common.

At least once a week, I see a child who has had a concussion. Most of these are sports-related injuries, but a lot of head injuries also come from accidents, including home accidents and motor vehicle accidents. Some accidents happen when kids are just being kids – when I was six years old, I knocked myself out while swinging on the teeter-totter in our back yard swing set. As careful as we try to be, some things still happen.

There has been a lot in the news recently about concussions and closed head injuries. Some of these stories have been about wounded soldiers, and others have been about professional football players who are now disabled after having repeated injuries (with depression, dementia, and even Parkinson's disease). There has also been a lot about children and teenagers who are injured while playing sports. Sports like football, soccer, hockey, and basketball have become more physical and more competitive since I was a kid. To top it off, the players are also getting bigger (especially in football), which means that the hits are much harder than they used to be. As a result, concussions are becoming more and more common.

Physicians have argued over how to define a concussion, and there is still some disagreement. The definition that I use is a minor closed head injury that causes a temporary loss of any brain function. This can result in loss of consciousness (usually over a short period of time), confusion, amnesia, vision problems, balance problems, clouded thinking, difficulty sleeping, emotional problems, headache (even with nausea and vomiting), or just about any problem with brain function you can think of.

Concussions are considered to be minor injuries, but just like a minor skin injury causes a bruise, these head injuries cause microscopic bruising in the brain. The key here is that this damage is microscopic, which means that it usually does not even show up on a CT or MRI scan. As a result, we cannot look at a scan to tell us how bad the injury is. In fact, if damage or bleeding does show up on a scan, that usually takes it out of the "minor" category all together. Since we cannot rely on a scan to tell us how bad a concussion is, the only way to determine the severity of a concussion is to look at how bad the symptoms are (for instance, whether or not there was loss of consciousness, and if so, how long that lasted).

So how do you treat a concussion? The bottom line is once you have ruled out a more serious injury, either with an exam or a scan, the only treatment is to give everything

adequate time to heal. Brain tissues that have not fully healed are more easily damaged than normal brain tissue. An injury on top of an injury is a recipe for a serious, long-term brain injury, which is the main thing we are trying to avoid. How long does it take for things to heal? Unfortunately, getting a straight answer may be easier said than done.

For concussions caused by sports injuries, there are three published guidelines for how long a person should wait before returning to the sport. Each of them grades the concussion on a one-to-three scale, depending on whether or not there was any loss of consciousness (and how long it lasted), and how long it took for confusion or amnesia to recover. Unfortunately, they each define the grades differently, and they each have vastly different recommendations for how long someone should wait before playing again. For instance, the recommendation for the same mild concussion could be to wait for as little as 15 minutes in one system and as much as a week in another!

We do not really have enough long-term data to tell us the right answer. Any parent can tell you that any amount of brain damage is not good (even if it will probably heal), and since we are often dealing with injuries that can affect developing children for years to come, I tend to use the most conservative system (search online for the Cantu grading system).

It is funny how differently parents react after I make my recommendations about how long a child should stay out of sports. Some are surprised and think it is excessive (they want to get their kids back on the field as soon as possible), while others think that any amount of time is not long enough and want to take their kids out of sports altogether. Regardless, I think it is very important to gradually increase activity when returning to a sport, making sure that exercise does not cause symptoms like headaches or nausea – there are actually guidelines for how to do this safely.

With rest, concussion symptoms usually clear up in a few days. However, some people go on to have "post-concussion syndrome" – headaches, nausea, dizziness, and even clouded thinking, which may last for months or years, even with only one concussion. We do not know why it happens to some people but not to others, but it probably means that the original injury was simply not able to heal completely. Unfortunately, physical activity often makes these headaches worse (as can anything that raises blood pressure), and they can be bad enough to keep people out of sports as well.

I am not going to suggest that we can prevent all concussions if we are careful enough. We cannot. We all want our kids to be safe, but even if there were no contact sports, kids would still be adventurous and daring, even with adult supervision. However, if concussions do happen, we can at least be sensible and aware of the precautions that might keep things from getting worse. In twenty years, it will not matter if your child missed a couple of football games while recovering from a concussion, but it might matter if he played when he shouldn't have.