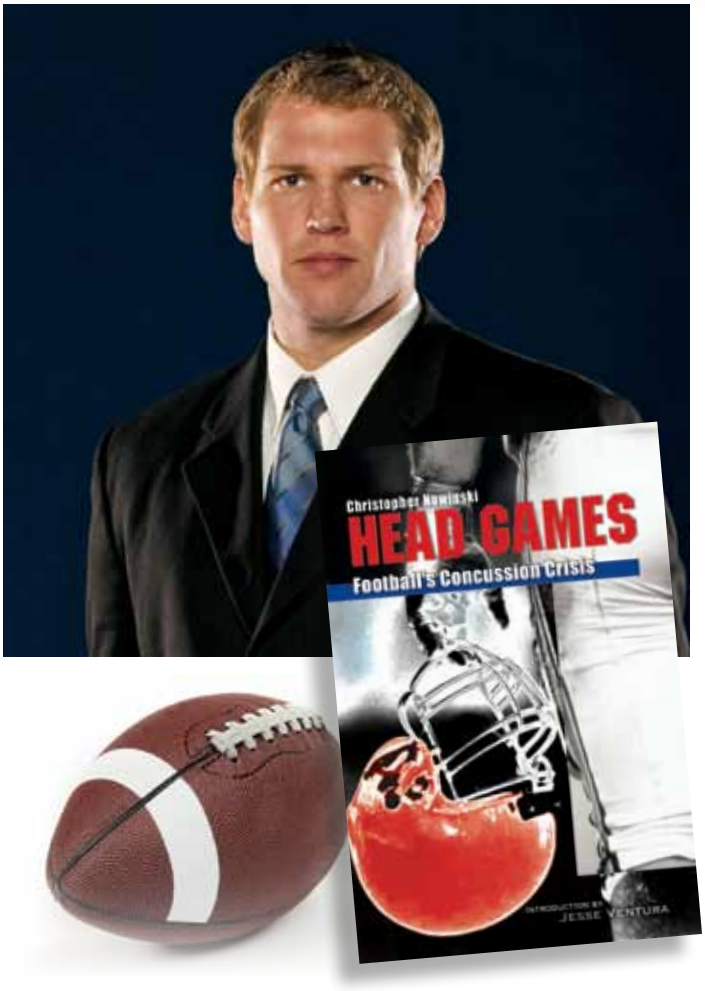
Chris Nowinski



Christopher Nowinski, author of "Head Games," is best known as a former professional wrestler with World Wrestling Entertainment. His career ended suddenly in 2003 because of the effects of post-concussion syndrome.

Chris studied at Harvard and graduated cum laude with a degree in sociology in 2000. He was a three-year letterman and two-year starter at defensive tackle for Harvard's football team. Chris also played four sports in high school and was captain the football and basketball teams during his senior year.

Since incurring his injuries, Chris now works in the field of concussion research and advocacy. He has written several media articles, speaks at medical conferences around the world and serves as president of the Sports Legacy Institute — an organization dedicated to furthering sports-related brain injury research and awareness, and improving the safety of contact and collision sports. He is also a consultant with Trinity Partners in Waltham, Massachusetts, where he specializes in commercial strategy and licensing and acquisitions in the pharmaceutical and biotech industries.

Q. **Hello Chris, thank you for interviewing with RainbowVisions. In the book you authored,"Head Games," you talk about a "concussion crisis" in youth sports. Some concussions can cause children to die or to become impaired for life. Your book educates readers about concussions, second-impact syndrome and post-concussion syndrome. Could you tell us a little bit about these conditions?**

In the past, almost everyone considered concussions to be benign. The belief was that they didn't affect long-term health. That was the mentality I had when I was forced to retire from my wrestling career. Through research, we now know that concussions are serious injuries.

Second-impact syndrome (SIS) is a condition that occurs when an athlete sustains a head injury — often a concussion — and then sustains a second head injury before symptoms associated with the first have cleared. A second blow to the head, even a minor one, can result in death or a serious brain injury. The majority of SIS occurs in athletes ages 12–18. For some unknown reason, teenagers are the most vulnerable.

Post-concussion syndrome is when concussion symptoms, such as headaches and dizziness, last for weeks and sometimes months after the impact that caused the concussion. When multiple concussions occur over time, athletes may have long-term debilitating neurological symptoms such as depression, memory loss and headaches.

Q. You live with chronic symptoms associated with multiple concussions. What types of treatments are available for your condition?

I competed for 11 years in contact sports and incurred numerous concussions. As far as I know, available treatments only treat the symptoms. There is nothing available to cure my brain injury. It's sort of like Alzheimer's disease; you can treat the symptoms, but you cannot stop the disease.

Q. Why do you think people are unaware of the potentially severe consequences of multiple concussions?

When I was participating in sports, I had never heard of any of the true dangers posed by concussions. In 2003 I began

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researching concussions in medical literature and found everything I needed to know regarding the definition of a concussion, why to rest a concussion and how to understand its long-term complications. But there is something that isn't allowing this information to get to the people who need it — the athletes and their families. I think part of the issue is that concussions are invisible injuries; you cannot see somebody get one. It's not like wearing a cast when you break your arm. With a concussion, you might not feel traditional pain because there are other symptoms like confusion or dizziness. If no one is watching for signs of a concussion, the person in question can appear normal almost immediately. Because of lack of reporting, there hasn't been pressure to provide better concussion management.

Q. One physical symptom that seems to be part of almost every concussion is a headache. Can you describe a headache caused by a concussion?

I can only describe my own symptoms, but headaches are commonly reported when someone has a concussion. I remember the last concussion I received during a wrestling match in Connecticut. I was lying backstage in my trunks, without a shirt, on the cold concrete floor for an hour, staring at the ceiling because my head was throbbing so badly.

For many athletes, concussion headaches are fierce and accompanied by nausea and dizziness. For some it is only a mild headache, but it will appear shortly after a blow to the head. Basically, if you play a sport and get hit in the head and it causes a headache, there is a good chance something happened. Some headaches go right away; others can linger forever. There is just no way to predict what will happen.

Q. Given your situation, what do you think we can do to make people more aware of the potential problems associated with sports concussions?

What our society needs to do is give people the choice of whether or not to expose themselves to concussion risk in sports. We do not bother to educate athletes before they begin playing, and still to this day, there are people who believe high school-age kids are not mature enough to understand the long-term consequences of multiple concussions and brain injury. Athletes should be educated so they have a choice whether or not they want to expose themselves to concussions and subsequent consequences. It starts with education; we need to force sports programs to take this problem seriously. We need to assess athletes for concussions in a standard way and stop them from returning to play until they have recovered. I think there are plenty of athletic programs that have yet to consider how to properly treat this disorder. Every athletic program has athletes who have sprained their ankle, and there are standard treatment procedures for this injury. We need the same thing for concussions.

Q. Why are young players more susceptible to concussions?

There are a number of reasons why young people are more susceptible to the long-term effects of concussions. Some experts believe the problem is partly biomechanical. Compared to adults, a child's head is larger in proportion to their body, and they tend to have weaker necks. The neck can absorb some of the force of an impact rather than that force going directly to the brain. Also, the brain develops into the late teens/early 20s, and a developing brain is more susceptible to damage compared to a mature brain. Research suggests that some chemicals released in the brain when a concussion occurs, like glutamate, can be exponentially more damaging to a young brain.

The real concussion crisis is at the youth level. It's also a moral question. If a 10-year-old can't understand the concept of a concussion well enough to tell an adult when he gets one, is it right to put a helmet on him and tell him to run into people a couple thousand times each autumn?

Q. How can we communicate to young athletes that they should choose what's best for their bodies?

There are a number of ways to attack that problem. I think part of the lack of awareness is due to the focus on second-impact syndrome instead of concussions. The reality is only about one in a million children/teens will die of second-impact syndrome, so it's not incorporated into risk behavior. What's more important is educating an athlete about concussions by telling them it's OK to sit out. By explaining that they can prolong both their athletic and professional career by taking care of their brain, kids are able to make better choices. I don't think most teenagers want to end up with Alzheimer's-like symptoms in their 40s because of concussions incurred during their teen and young adult years. We need to help them understand they need to take responsibility for their own body. Nobody else can feel the symptoms they are feeling. If they don't tell, nobody will know.

Q. How can a young athlete tell when it's safe to return to play?

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An athlete should never return to play when he/she has any concussion symptoms (listed above). If you have symptoms, you need rest. Some people advocate taking an extra seven days off after all symptoms are gone to make sure the brain is healed. You should have a doctor sign off on that decision.

Q. I have neighbors with a high school-age son. He recently made the football team, so I spoke with his mother about sports concussions. Her comment to me was, "Oh, I'm sure the coaches and the school system know everything about concussion management — we are all set." How would you respond to this mother?

You do hope the coaches and the school systems are on top of this, but most aren't. No parent should make that assumption. Statistics show that blind trust in your athletic team could lead to disaster. I really do believe parents should become the agents of change. It's not a bad idea to have a conversation with the coach, provide literature and pressure the school into adopting a good concussion management program. Five years ago, nobody was doing it—it truly is brand new. I've learned from experience that unless parents make it their business, most athletic programs are not going to take the time or make the effort.

If your school system is not up to speed, parents should advocate for a sports concussion program. Schools arrange for people to come in and talk about drugs, drinking and driving — they should also have someone talk to athletes about concussions. We need to educate coaches so they don't send or pressure concussed kids back into the game too early.

Trainers need to incorporate a concussion management program, such as neuropsychological or balance tests to determine whether an athlete is ready to return to play.

Q. Who should talk to young athletes about the potentially severe consequences of multiple concussions?

A doctor that is informed and can connect with kids. Athletes who have lived with the dark side of concussions and who were forced to retire can also make a big impact with kids. Until athletes understand just how terrible life is with long-term concussion symptoms, they will never understand that sports are not just a game.

We have started a nonprofit called the Sports Legacy Institute dedicated to studying the effects of concussions and other sports-related injuries. The staff is working very hard to educate the sports world about the dangers of concussions, and we will have people shortly available to present to schools and help them develop the proper concussion management protocols. You can visit our Web site at: http://sportslegacy.com for more information. ❖

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