

Heading off CONCUSSIONS

With head trauma a growing issue for young athletes, spreading education and awareness of its causes is a vital cultural change. by Brian Keagy

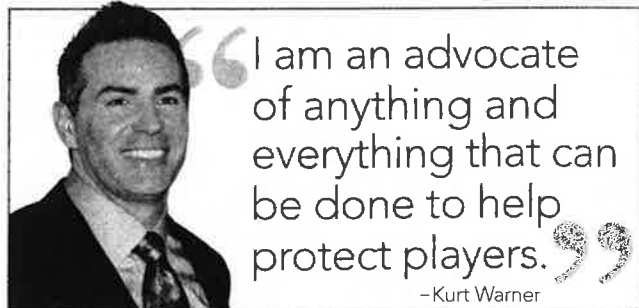
Amid a national effort to make athletics safer for players, sports-related concussions are an increasingly hot topic—and with good reason. The costs associated with brain injuries, both to athletes' health and for care related to their effects, become more alarming with each release of new findings.

Just how big is this problem becoming? In 2013, the NFL reached a \$765 million settlement with ex-players over concussion-related brain injuries before U.S. District Judge Anita Brody threw it out in January, fearing the amount wouldn't be enough to cover retired players' needs. Brody has since approved the settlement with the dollar cap on damages removed to ensure that funding won't run dry. However, there's no guarantee that all ex-players will opt for the agreement and forgo individual lawsuits. A White House Healthy Kids and Safe Sports Concussion Summit was held in May to address recent numbers from the Centers for Disease Control and Prevention (CDC) that reveal nearly 250,000 emergency room visits annually by children with sports-related brain injuries. Even more concerning, that number doesn't include kids who wait to see the family doctor or don't seek any medical help.

Family first

Former NFL quarterback Kurt Warner can't recall receiving a concussion or head injury while growing up playing youth football in Iowa. However, a 12-year professional career capped by two MVP awards and a Super Bowl title made him acutely aware of the damage concussions can cause. In addition, Warner's adopted son Zachary suffered brain trauma from an accident as an infant during his wife Brenda's first marriage, resulting in damage that left him blind and developmentally disabled. His passion for this issue stems from those experiences while also having six other children engaged in athletics and other activities, including son Kade, who suffered a concussion at the age of 13 while playing football. Warner has become an outspoken advocate for safety above all else when it comes to football or any other sport that presents risk. He preaches a simple message when it comes to what parents, coaches and athletic leagues should be prioritizing.

"When you put on the hat of a parent, everything changes," he says. "Especially in a situation where they're going out there to do something for fun playing a game, you want to make sure as a parent you're doing everything you can to protect them, to use your knowledge of



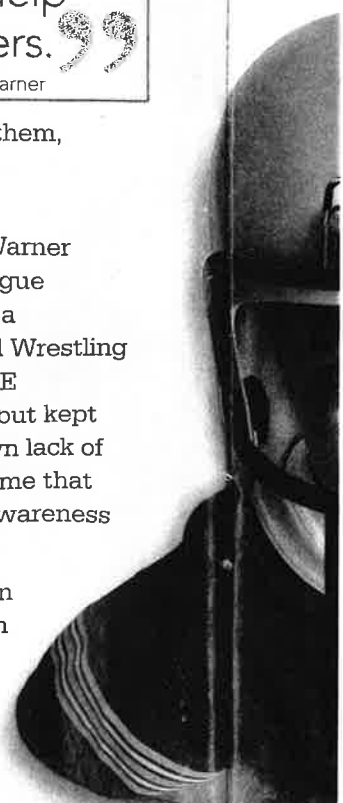
concussions to make right decisions for them, whether it's football or anything else."

Hard lessons

Chris Nowinski wasn't as fortunate as Warner during his athletic career. An All-Ivy League defensive tackle at Harvard, he pursued a professional wrestling career with World Wrestling Entertainment. Just a year after his WWE debut, he suffered a serious concussion but kept working out and wrestling due to his own lack of knowledge. The post-concussion syndrome that resulted led to a swift retirement; true awareness of his condition would take much longer.

"I didn't have any respect or appreciation for concussions until my 2003 concussion where the symptoms would not go away," he says. "I used to think

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athletes who missed time with concussions were soft. It wasn't until I had five years of headaches and other problems related to post-concussion syndrome that I recognized how serious the injury was, and how much athletes suffered. I lied about my injury for five weeks because I didn't realize how important rest was for concussions, and it likely turned what should have been a temporary injury into a permanent one."

A fortuitous visit to renowned neurosurgeon Dr. Robert Cantu turned around Nowinski's understanding and his mission in life. One of the world's preeminent experts on concussions and brain trauma in sports, Cantu exposed Nowinski to the basic understanding he didn't have about his own brain damage—particularly the risk of developing Chronic Traumatic Encephalopathy (CTE), a degenerative brain disease associated with brain trauma. After speaking to a number of other athletes he had competed with about their experiences, Nowinski wrote the critically acclaimed book *Head Games: Football's Concussion Crisis* in 2006.

"When I began digging into the science behind concussion, it became clear that we could and should change the way concussions are treated in sports, because it would protect athletes and save lives, and the changes required were modest," he says. "I wanted readers to understand that concussions were real brain injuries, the factors that led to the lack of reporting and diagnosis,

the risks associated with return to play, and the potential long-term consequences.

I also wanted readers to understand the concerns I had around the way brain trauma was such a major part of so many youth sports, and the unknowns around what it would mean in the long term."

Building a legacy

Nowinski eventually teamed up with Cantu in 2007 to form the Sports Legacy Institute (SLI), a Boston-based nonprofit

dedicated to research, awareness and education around head injuries. SLI partnered a year later with Boston University School of Medicine to found the Center for the Study of Traumatic Encephalopathy, the world's first research center devoted to the study of CTE. Along with advising numerous sports organizations, SLI has created education initiatives to train coaches, parents and athletes on sports safety that include the SLI Advanced Concussion Training and SLI Community Educators (SLICE) programs (details on scheduling a SLICE concussion education program for athletes in grades 4-12 can be found at sportslegacy.org/education/slice).

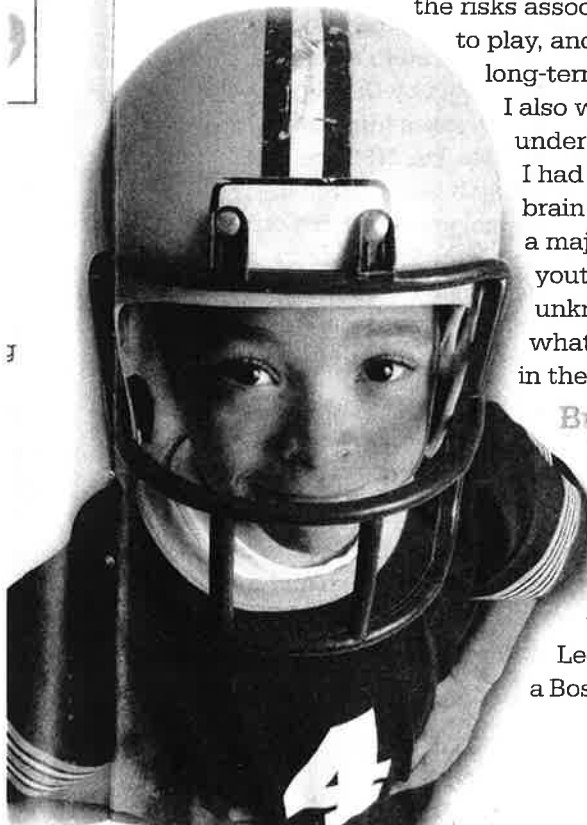
Cantu, a former collegiate pitcher at the University of California at Berkeley, has been involved with head trauma among young athletes since his time as a sideline physician for a high school football team over 30 years ago. His 2012 book *Concussions and Our Kids*, Cantu's 31st book on neurology and sports medicine, is addressed to parents as a preventive guide for concussions in youth sports. Included in the book are such potentially controversial recommendations as restricting athletes under the age of 14 from contact in tackle football, checking in ice hockey or heading soccer balls.

However, Cantu wants to make it clear that concussions aren't limited to sports—they can also occur frequently from non-sports activities. Simply attempting to limit participation is an unrealistic goal for many young athletes and their families. "It's really key that parents encourage their kids to play sports and get involved with sports teams," he says. "But at younger levels where the brain is more vulnerable to injury, they're better off playing sports without as much head contact."

The key, explains Cantu, is limiting contact for young athletes lacking skeletal maturity and neck-muscle development both in practice and competition, no matter what sport or activity in which they engage. The most vulnerable years are before the age of 12, because of both the lack of physical strength and neural pathways that are in the early stages of forming. "The less head trauma you take and the later you start taking it, the better off you'll be," he says.

As increasing risk of injury presents itself, Cantu advises parents to be diligent about looking for signs of concussion such as anxiety, depression and apathy, along with poor concentration, lack of sleep and headaches. However, the brains Cantu has examined during his research reveal that lasting damage isn't determined only by concussions. "A number of

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Spreading concussion awareness

Developed by the CDC, the Heads Up Program is a series of educational initiatives formed to help protect people of all ages, with an emphasis on children and teens, from concussions and other serious brain trauma. The Heads Up to Parents website was created through a grant to the CDC Foundation to further focus on sports programs and schools as critical places to inform and educate on brain injury prevention, diagnosis and response among children and teens.

Information and resources available on headsupto.org include:

- ✗ Brain injury basics featuring information from professional athletes, tips from concussion experts and real-life stories from teens and their parents on how to recognize and respond to a concussion and be alert for other serious brain injuries.
- ✗ A downloadable Heads Up App for quick access to information on recognizing and responding to concussions and serious brain injuries.
- ✗ Tips on outreach to communities to improve education on concussions.
- ✗ Helmet safety tips and a helmet fact sheet.
- ✗ Additional tips on car, bike, playground and home safety from concussions.
- ✗ A selection of videos, online training programs, downloadable PDFs/fact sheets, infographics, eCards, podcasts and radio spots for parents, coaches and children.

them had no recognized concussions," he says. "For later-life issues, it's not just concussions that are important, it's total brain trauma. All the little sub-concussive blows count."

The NFL has instituted such measures as limiting practice time and more stringent monitoring of concussion symptoms, which Cantu predicts will become stressed more at the youth level as awareness continues to rise. While he states that anti-concussion measures have a long way to go, being aware of symptoms and taking a smart approach to participation is the first and perhaps most vital step. "Message No. 1: No brain trauma is good trauma—reduce it whenever you can," he says. "No. 2, another way to reduce it is not consistently play a sport at high risk of head trauma. Mix it up a bit."

Gearing up

So if limiting hard contact isn't enough, what's the next step? As Warner's children became more involved in athletics, he began to search out supplemental protection for them that would lessen the chance of concussion and injury. His focus has been on identifying promising equipment breakthroughs combined with proper training that are available in the marketplace; his sons completed the 2012 season with no injuries after they utilized supplemental padding and enhanced gear. Warner has since pledged his support to the Play It Safe program, which combines equipment technology with techniques that include strength training, speed work, plyometric exercises and sports-specific training. In addition, a number of companies have developed additional padding and protection that are being utilized with standard helmets at all levels. A new website launched by the CDC, headsupto.org (see sidebar), also preaches the importance of well-maintained equipment that fits properly and is utilized appropriately.

Play It Safe's advocacy of proper instruction is spreading to leagues across the country that have committed to a new tackling technique developed for youth sports by USA Football called Heads Up Tackling. The program stresses fundamentals and is backed by equipment manufacturers, the NFL and the NFL Players Association. Warner and Play It Safe preach the three T's—training, technique and technology—with the crucial goal of keeping kids as safe as possible and reducing injuries. "I am an advocate of anything and everything that can be done to help protect players, from technique to standardized testing to having medical staff at every event," he says.

Now an analyst for the NFL Network, Warner has drawn criticism for being outspoken about the dangers that the game of football presents. He also recognizes that the benefits of athletics can outweigh the risks when proper precautions are taken.

"Knowledge for everybody and access to people that can really help them to make the best decisions for their children and for their players is the next step," he says. "We've gotta do more in regards to that for every player, every coach or every parent." ♦

Brian Keagy is a senior writer for *Healthy Living Made Simple*.