

Opinion: New law will better help athletes who sustain concussions

By Jonathan Finnoff

In October 2006, a 13-year-old Washington football player named Zack Lystedt hit his head on the ground at the end of the second quarter of a football game. He grabbed his head and was in obvious distress. An injury timeout was called and Zach's coaches helped him off the field. After resting during halftime, Zack's coaches allowed him to return to the game. No medical personnel were on site to evaluate Zack and help decide whether he should or shouldn't return to the game.

During the remainder of the game, Zack's headache increased and he had difficulty remembering plays. At the end of the game, he collapsed and was airlifted to a trauma center where emergency surgery was performed on his brain. Although Zack survived, he was left with significant physical and cognitive disabilities that will severely limit him for the rest of his life.



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Thankfully, when managed appropriately, a majority of concussions resolve without significant medical complications. But, when mismanaged, the results can be devastating.

The Centers for Disease Control and Prevention estimates that 1.4 million to 3.8 million concussions occur each year in the United States. Concussions are more common in younger athletes, females, those who are physically fatigued (ie: later in the game), and those who have sustained a prior concussion. The most frequent symptom of a concussion is a headache, but other symptoms can occur such as dizziness, confusion, memory difficulties, sleep disturbance, emotional changes, and difficulty concentrating. A common assumption is that an athlete doesn't have a concussion unless they are knocked out, but concussions are rarely associated with a loss of consciousness.

Any concussed athlete should immediately be removed from the game and evaluated by a healthcare provider. The primary treatment for concussions is physical and cognitive rest until the athlete's concussion symptoms resolve. Physical rest involves avoiding any activity that might increase the athlete's heart rate or blood pressure. Cognitive rest means avoiding activities that require a lot of concentration such as schoolwork or video games. After the athlete's symptoms have resolved, they should gradually increase their physical and cognitive activities over a period of approximately five days under the direction of a healthcare provider.

Most athletes who sustain a concussion feel better within a week. However, some athletes take far longer to heal and experience persistent concussion symptoms referred to as post-concussion syndrome. Other concussion complications include an increased risk of future concussions, chronic traumatic encephalopathy, or a catastrophic injury such as second impact syndrome that may cause persistent disability or death.

Chronic traumatic encephalopathy is seen in athletes with a history of concussions and usually begins around 43 years of age. It is characterized by emotional problems such as depression and violence, memory difficulties similar to Alzheimer's disease, and movement disorders similar to

Parkinson's disease.

Second impact syndrome occurs when an athlete returns to activity before their symptoms resolve and subsequently sustain another concussion. This second injury can result in diffuse swelling within the brain, which results in severe disability or death.

Getting back to Zack, his tragic injury led the Brain Injury Association of Washington to team up with the CDC to launch a "Heads Up" concussion awareness program for youth athletes in the state. This program focused on educating athletes, parents, coaches, and health care providers about concussions. Despite their efforts, the program had limited success for a variety of reasons, the primary one being the lack of standardized and required concussion education and management. With this in mind, a youth sports concussion bill was drafted, unanimously approved by the Washington State House of Representatives and Senate, and subsequently signed into law by Gov. Christine Gregoire on May 14, 2009. The Zackery Lystedt Law was the first of its kind and required all athletes and their parents or guardians to sign a concussion information sheet prior to initiating practice at the start of each season. Any athlete with a suspected concussion was required to be removed from play and a written medical clearance was required prior to returning to sports. After this bill was enacted, for the first time in five years, there were no deaths or operable brain hemorrhages in Washington state during the high school football season.

Shortly after the Zackery Lystedt Law was enacted, the American College of Sports Medicine, the largest sports science and sports medicine professional organization in the world, issued a national call for similar bills to be passed in all 50 states and the District of Columbia. Roger Goodell, the commissioner of the National Football League, also declared their support for the law and made it a primary objective of the NFL to assist in the passage of similar

legislation throughout the United States. Every state-based chapter of the Brain Injury Association of America also endorsed the principles of the Zackery Lystedt Law. To date, 27 states and the District of Columbia have passed Lystedt-like laws, and several more states are working to introduce similar legislation.

In California, Assembly Bill 25 takes effect in January 2012. It mandates similar rules to those of the Zackery Lystedt Law, including yearly concussion education, immediate removal from athletic activity of any individual suspected of sustaining a concussion, and requiring that the athlete be evaluated by a licensed health care provider and receive written clearance prior to returning to athletic activity. These requirements improve concussion awareness and safety for our youth athletes.

In our region, Tahoe Center for Orthopedics has already instituted a multi-faceted program to address sports concussions including pre-season baseline concussion testing in athletes who participate in high risk sports, providing medical coverage for high risk high school sporting events, establishing a multi-disciplinary team of concussion experts to evaluate and treat concussed athletes, and educating the local sports and medical community about the sports concussions through lectures, live interviews, and articles.

While sports are an incredibly important part of social, cognitive, and physical development and provide a variety of long-term health benefits, it is important to be aware of the risks associated with sports, and to identify and treat sports related injuries appropriately. As previously described, sports concussions are common in the United States and the potential complications associated with concussions are severe. Therefore, a better understanding of concussion identification and management among the public and health care providers is important, and standardization of concussion treatment is imperative to minimize the risks associated with

this injury. I believe this bill is a major step in the right direction.

Tahoe Orthopedics and Sports Medicine is developing a comprehensive sports concussion program with the assistance of physician Jonathan Finnoff, an internationally recognized concussion expert and former co-director of the Mayo Clinic Sports Medicine Center Concussion Program. He recently joined the team of sports medicine clinicians at Tahoe Center for Orthopedics. To learn more about Tahoe Center for Orthopedics concussion program, go online.