

Effects of Legislation on Sports-Related Concussion



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KEYWORDS

• Concussion • Legislation • Athletics • Sports

KEY POINTS

- Current concussion legislation centers on the following three points: Education of athletes, parents, and coaches; removal from practice or play for suspected concussion; and clearance by a health care provider before medically supervised graded return to play.
- Sports concussion laws are not designed for primary prevention but instead aid in proper diagnosis and management after an injury has occurred, thereby preventing the tragedies that may occur from premature return to play.
- Laws are living documents and can be amended as more research becomes available.

INTRODUCTION

Although public knowledge and awareness of concussions has increased over the years, it is estimated that before 2009, up to 40% of concussed youth athletes were prematurely returned to play after concussions.¹ This premature return to play is widely thought to have led to tragic results, as one study found that 71% of football players that suffered a catastrophic head injury received a previous concussion in the same season, and 39% were playing with residual symptoms from a concussion.² Despite multiple published guidelines and educational campaigns, tragedies still occur in youth sports after concussions.

The national push for concussion legislation began with the story of one child. Zackery Lystedt was 13 years old when, in 2006, he suffered a concussion while playing in a middle school football game. When Zack was holding his head and slow to get up after a tackle, an injury timeout was called and he was assessed by his coach. No medical personnel was on the sideline, as is typical in many middle school games. Zack sat out the next 2 plays until halftime and returned to play in the third quarter. He had increasing symptoms but continued to play, only to collapse in his father's arms after the game was over. He was airlifted to a level 1 trauma center, where he received

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craniotomies for bilateral subdural hematomas. Zack's road to recovery has been long and incomplete, as he continues to struggle daily with cognitive impairments and spastic hemiplegia.

As the Lystedt family labored to find meaning in this injury, they were assisted by their attorney, Richard Adler, president of the Brain Injury Alliance of Washington at the time. Efforts to initiate change in concussion management began first with a state-wide education program. This program was accomplished with help from the local National Football League team (Seattle Seahawks), one of their physicians (Dr Stanley Herring), and the Centers for Disease Control and Prevention (CDC) Heads Up concussion education and awareness program. However, it became apparent that education alone was not enough. Adler describes an "inconsistency gap" that remains even after education; coaches continued to have different levels of understanding surrounding concussion, and many did not recognize the seriousness of a brain injury.³

Another issue is the lack of institutional memory.⁴ One coach or one athletic director may be well educated in concussion management, but when that individual leaves a program or a school, strategies and policies fail to remain in place, as they have not become institutionalized into the culture of the school or school district. The result is that different schools or school districts may have different policies regarding concussions. In this respect, some athletes may therefore be safer than other athletes. Additionally, the conclusion was reached that education alone does not change behavior, and only legislation combined with the educational effort would help make concussion awareness and management more uniform.

With help from the Brain Injury Alliance of Washington, The University of Washington, the Washington State Athletic Trainers' Association, the Washington Interscholastic Activities Association, and many others, Washington State's Engrossed House Bill 1824 (Zackery Lystedt Law)⁵ was passed unanimously on May 14, 2009. By January 2014, less than 5 years later, all 50 states and the District of Columbia had also adopted youth sports concussion laws.⁶ To put this in perspective, only 21 states require bicycle helmets for all children, and only 34 have a primary seat belt law.⁷

Sports concussion laws are not designed for primary prevention but instead aid in proper diagnosis and management after an injury has occurred, thereby preventing the tragedies that may occur from premature return to play. To effect this, the Lystedt Law has 3 basic tenets⁵:

1. Education of athletes, parents, and coaches
2. Removal from practice or play for a suspected concussion at the time of the suspected injury
3. Medically supervised return to play

With the exception of Wyoming, the laws in all other states and the District of Columbia also stipulate these 3 tenets.⁸ Wyoming only requires establishing protocols for education of coaches and athletic trainers (without specifying requirements) and to address restrictions from school events after suffering a concussion.⁹ It does not require removal of athletes from games or practices if they are suspected to have suffered a concussion, nor does it require medical clearance before return to play. For the purposes of this article, the term *sports concussion law* will be used to indicate adherence to these 3 tenets.

EDUCATION

The first tenet of sports concussion laws is education of athletes, parents, and coaches. However, it is generally not specified how this education should occur.

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