Tackling the Problem: Friday Night “lights out”?

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In 1999, I was knocked unconscious by an inadvertent elbow from my high school basketball team’s 6’9”, 230-pound center. I recall awakening with a bloody mouth and being helped to the locker room, but not much else from that day. Like many high school athletes, I did not understand the seriousness of a concussion. Nothing was broken or severely sprained, and outside of a little fogginess and a headache, I felt fine. I did not see a doctor, nor did I mention the incident to my parents. I returned to practice the next day. Thanks to legislation known as “Will’s Bill” passed in Texas in 2007, the first of its kind, a high school athlete in my position would not have been able to return to practice (or play in a game) until the athlete received written clearance from a physician.¹

Background

Due to sobering statistics and high profile incidents such as University of Florida Heisman Trophy quarterback Tim Tebow suffering a concussion during a game against the University of Kentucky or Texas Tech University firing then head coach Mike Leach following his alleged mistreatment of a player suffering from a concussion, the handling of concussions in sports has become a hot topic of debate. Congress has even entered the fray. As part of its investigation into the issue of concussions in sports, the House Judiciary Committee held a hearing in Houston, Texas, on February 1, 2010 to discuss “Head and Other Injuries in Youth, High School, College, and Professional Football.” As evidenced by the recent congressional hearing, the issue of concussions in sports has reached high school athletics. Texas is no longer the only state to have a law addressing the problem. Washington and Oregon have also passed legislation, with Washington having passed what is thought to be the most stringent return to play policy. At least half a dozen states are considering legislation modeled after Washington’s “Zackery Lystedt Law”. While Texas should be praised for being the first state to address the issue, the question of whether Will’s Bill does enough to protect our high school athletes must be examined in response to new studies, new technology, and stricter legislation in other states.

Concussions in youth sports: The growing problem

Concussions are not just bumps on the head or dings; they are mild traumatic brain injuries (mTBI). A recent study by the University Of Pennsylvania School of Medicine found distinct changes throughout the white matter in the brain at 2-4 days following an

¹ TEX. EDUC. CODE ANN. § 33.205 (Vernon 2009). (Subsection (b): If a student participating in an extracurricular athletic activity, including a practice or competition, becomes unconscious during the activity, the student may not: (1) return to the practice or competition during which the student became unconscious; or (2) participate in any extracurricular athletic activity until the student receives written authorization for such participation from a physician.
Concussions are caused from a jolt or blow to the head, and if severe enough, can cause injuries to nerve fibers and neurons. Although loss of consciousness is a factor in determining the severity of a concussion, an athlete does not have to lose consciousness to suffer a concussion. In fact, the vast majority of concussions occur without loss of consciousness. Symptoms of concussions can range from mild to severe and include nausea, dizziness, double vision, headaches, concussion, trouble concentrating and difficulty remembering things. Although studies are being conducted and there is the potential for breakthrough, the science of studying the effects of concussions is still at an early age. Thus there is no universal consensus on how many concussions are too many and at what point it is safe to return to play. The return to play decision is especially critical because of the possibility of second-impact syndrome. Second-impact syndrome is acute, sometimes fatal brain swelling that occurs when a second concussion occurs prior to complete recovery from a prior concussion. As John Griswold, chairman of surgery at Texas Tech Health Sciences Center, states “[w]hile the first injury is bad, what’s unrealized is that the second injury worsens the first. It’s not just an added insult, it’s exponentially worse.”

The Centers for Disease Control and Prevention estimates that between 1.6 and 3.8 million sports-related concussions occur annually. Another study found that 140,000 youth football players suffered a concussion annually with as many as 40 percent returning to the field sooner than guidelines suggest. This is particularly problematic because the human brain is not fully developed until the age of 18 and consequently an immature brain is more likely to be damaged by concussions and sub-concussions than an adult mature brain.

Texas Legislation

Known as Will’s Bill, the Texas law was passed following the unfortunate death of Will Benson. Will collapsed during a football game, went into a coma, and died six days later. Doctors concluded that his death was caused by a helmet-to-helmet hit suffered a few

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5 Id.
7 Neurosurgery Today, supra note 3.
weeks earlier. Will’s Bill amended Section 33 Subchapter F of the Texas Education Code. The key provisions aimed at curbing concussions are found in Section 33.202 and 33.205.

Section 33.202 requires a coach, trainer, or sponsor for extracurricular athletic activity, to complete safety training. Recognizing symptoms of potentially catastrophic injuries, including head and neck injuries, concussions and injuries related to second impact syndrome must be included in the safety training program. A school district must also provide training to students to recognize the symptoms of concussions, head and neck injuries and second impact syndrome. A safety drill incorporating the training must be performed at least once a school a year.

Section 33.205(b) provides that, “[i]f a student participating in an extracurricular athletic activity, including a practice or competition becomes unconscious during the activity, the student may not:

1. Return to the practice or competition during which the student became unconscious; or
2. Participate in any extracurricular athletic activity until the student receives written authorization for such participation from a physician.

A hole in the Texas legislation appears to be the requirement of “unconsciousness” as the standard for requiring physician approval for return-to-play. As previously noted, concussions can occur (and most do) without unconsciousness. Thus, the Texas legislation does not cover those youth athletes who get a concussion but are not knocked unconscious.

Washington State Legislation

On May 14, 2009, Washington signed into law House Bill 1824, known as the Zackery Lystedt Law. The new law is thought to be the most comprehensive return to play law in the United States and is being used as model legislation for other states. The new bill aims to prevent similar tragic events through four key requirements:

1. Youth athletes and parents must sign concussion and head injury information forms prior to the initiation of practice of competition annually.
2. Any youth suspected of sustaining a concussion or head injury shall be removed from practice or play.

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13 TEX. EDUC. CODE ANN. § 33.202 (Vernon 2009).
14 Id.
15 TEX. EDUC. CODE ANN. § 33.205(b) (Vernon 2009).
3) Written clearance from a licensed health care provider trained in the evaluation and management of concussions must be obtained before the youth may return to play.
4) Private, nonprofit youth sports associations wanting to use publicly owned fields must comply with this law.\textsuperscript{16}

Importantly, this legislation reaches more youth athletes than Will’s Bill in two key ways. First, it eliminates the requirement of unconsciousness and instead requires return-to-play approval for any youth suspected of sustaining a concussion. Second the bill applies to youth sports associations who use publicly owned fields, whereas Will’s Bill only applies to public schools and any other school subject to UIL rules.

\textbf{ImPACT Testing and Proposed Texas Legislation}

The ImPACT test is an online testing program used by professional sports teams, as well as college sport programs and more than 10,000 school districts across the nation.\textsuperscript{17} The test provides for a computerized baseline test of an athlete’s neurocognitive function by recording an athlete’s reaction time to various questions at the beginning of a season. If a head injury occurs, the athlete can retake the same test to compare the results thereby removing some of the guesswork from concussion treatment.\textsuperscript{18} Since 2008, more than 15,000 North Texas student athletes have received ImPACT baseline testing. Of those approximately one in thirty has returned to be retested after suffering a concussion.\textsuperscript{19}

Texas Representative Eddie Lucio III wants to mandate baseline testing in Texas public schools for students participating in contact sports.\textsuperscript{20} His proposal, House Bill 4627,\textsuperscript{21} failed to pass in the previous legislative session. The initial testing called for in the bill would cost $2 to $3 while the subsequent test to detect injury would cost about $10.\textsuperscript{22} D.W Rutledge, executive director of the Texas High Coaches Association, says their trainers see a real value in the testing and believes it will eventually be required in Texas.

The use of baseline testing is not without its detractors however. Potential issues include the cost of the test and providing access to rural communities.\textsuperscript{23} Others also worry that the test will incorrectly be seen as the determining factor in the return to play decision. The test does not assess balance and vision and a number of other parts of the brain that can be involved in post concussion issues and thus should only be used as one factor in

\textsuperscript{17} Texas Health Resources, News Release \textit{Texas Health Dallas Sports Concussion Program Reaches 15,000 Student Athletes}, (Feb. 4, 2010), available at http://www.texashealth.org/body.cfm?id=1629&action=detail&ref=840.
\textsuperscript{19} Texas Health Resources, supra note 17.
\textsuperscript{22} Yadron, supra note 20.
\textsuperscript{23} Id.
the return to play decision. Another researcher, Dr. Bennet Omalu, co-director of the Brain Injury Institute, believes that while neuropsychiatric testing is useful, the scientific community’s time and effort should be focused on developing biomarkers to diagnose, monitor and manage concussions. Biomarkers have been developed for other types of diseases, such as heart attacks, but none currently exist for concussions. According to Dr. Omalu, bio-markers would be more efficient, objective, reproducible and quantitative than neuropsychiatric testing.

Conclusion

In 2007, Texas became the pioneer of the return-to-play movement. As evidenced by new legislation, new research and tests since that time, the science of concussion is still evolving. Critical research is being done daily to reach a better understanding of concussions. As such, the Texas legislature needs to be prepared to update Will’s Bill. As a starting point, Texas should remove the “unconscious” requirement and instead use legislation similar to Washington’s to reach more youths suffering from head injuries.

The use of ImPACT testing, as well as other science based recommendations, should be further researched as well. In order to pass stricter return-to-play guidelines, advocates need to show that stricter guidelines will not have deleterious effects on the game itself. For instance, one U.S Representative in Texas recently stated that “I mean if Congress gets involved, it would be the end of football as we know it. We would all be playing touch football out there.” It will be important to make clear that new legislation is not aimed at changing the rules of the game, only the safety of its athletes. Texas loves its high school athletics, especially high school football, which is a staple in Texas culture. To continue this great tradition, it is important that we help keep players safe. The best way to do so is through better return-to-play guidelines for our youth athletes participating in contact sports.

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24 Chris Smith, Dangerous Game: High Schoolers Playing with Concussions, EAGLE TRIB., (Feb.21,2010), http://www.eagletribune.com/punews/local_story_052132850.html#rise
25 Brain Injury Research Institute, supra note 11.
26 Id.