THE CONCUSSION CRISIS
What you don’t know can hurt you!!

Practical considerations to potential liability issues

Presented by

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Overview

- 5 Components of Concussion Battle
  - Education & Awareness
  - Baseline Testing
  - Equipment and Sensors
  - Treatment and Recovery
  - Research

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RISK MANAGEMENT

• Types of liability exposure
  • Failure to implement Concussion Policies
  • Failure to comply with Concussion Policies
  • Lack of Athletic Trainers
  • Lack of training for coaches
  • Equipment
    • Sensors
    • (Example of goalpost ownership)

• We will examine some practical issues at the end
Goals

■ **What is a concussion?**
  ■ Learn elements of concussions
  ■ Be aware of concussion signs

■ **Why should I care?**
  ■ Long Term impact of concussions
  ■ Risk Management issues

■ **What do I need to know?**
  ■ Understand different baseline tests
  ■ Process for handling concussions
Sports Brain Credentials

- White House Concussion Summit
- National Council on Youth Sports Safety
- Sports Legacy Institute
- National Concussion Management Certification Center
- Chicago Concussion Coalition
- NFL Alumni
- Retired Professional Football Players
- Positive Coaching Alliance
- C4CT Concussion Summit—United Nations
- Illinois Athletic Trainers Association
- Great Lakes Athletic Trainers Association
- US Indoor Facilities Owners Conference
Concussion Myths

1. Must involve blow to head
2. Involves losing consciousness
3. Can be prevented by helmets/headbands
4. Next one is always more severe
5. 3 concussions signals end of career
6. Boys suffer more often than girls
7. Mouth Guards prevent concussions
8. Symptoms are obvious immediately
How many of you knew that concussions were a problem:

- 10 years ago
- 5 years ago
- 3 years ago
- Today
Isn’t everyone aware of concussion issues?

ILLINOIS WRESTLING CHAMPIONSHIP
Who has liability for this situation?

WHO WOULD HAVE LIABILITY HERE?
• IHSA (Governing body)
• Host facility
• Athlete’s High School
• Officials
• Athletic Trainers
• Parent (one parent or child sue—divorce)
• Would this constitute child abuse?
Who has liability for this situation?

ILLINOIS WRESTLING CHAMPIONSHIP

ANALYSIS IS NOT SIMPLE AND IT WILL ONLY GET MORE COMPLICATED

• Number of parties involved
• Complexity of responsibilities of each
• Who has best chance to protect harm
• Who failed in their responsibility to athlete
WHAT DO YOU NEED TO KNOW?

Where does the liability reside?

Need to understand the various elements and how the issues practically present themselves at different levels of sports.
Concussions

WHAT IS A CONCUSSION

- One of the problems with concussions is a lack of understanding of what it means
- Even supposedly reliable sources have very different definitions
- Many places still use outdated information
WHAT IS A CONCUSSION

- From the National Federation of High Schools

Type of traumatic brain injury (or TBI) caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth.
Concussions

WHAT IS A CONCUSSION

- **Dictionary.com**
  - Injury to the brain or spinal cord due to jarring from a blow, fall
  - Shock caused by the impact of a collision, blow, etc.
  - The act of violently shaking or jarring.

- **Google.com**
  - Temporary unconsciousness caused by a blow to the head. Also, loosely, aftereffects such as confusion or temporary incapacity.
  - A violent shock as from a heavy blow

- **Merriam-Webster**
  - A stunning, damaging, or shattering effect from a hard blow; *especially*: a jarring injury of the brain resulting in disturbance of cerebral function
  - A hard blow or collision
WHAT IS A CONCUSSION

**DEFINITION**

- Brain injury that changes the way the brain normally works.
- Caused by a bump, blow, or jolt to the head.
- Can also occur from a blow to the body that causes the head and brain to move rapidly back and forth.
- Even what seems to be a mild bump to the head can be serious.
- Concussions can have a more serious effect on a young, developing brain and need to be addressed correctly.”
WHAT IS A CONCUSSION?

What is one important step that you can take to help people put the concussion discussion into the proper framework?
WHAT IS A CONCUSSION

- Remove word “concussion” from your vocabulary
- It is a **BRAIN INJURY**

- Insert the phrase “brain injury”
- Which sounds more serious?
  - “mild brain injury”
  - “mild concussion”
CONCUSSION CHALLENGES

- Everyone wants an easy answer
- No such thing
  - No Red light/Green light type of system
- Every concussion is different
  - Like snowflakes—no two are alike
- Every person reacts/recover differently
Common Symptoms

- **Short Term**
  - Headaches
  - Nausea or vomiting
  - Sensitivity to noise
  - Sensitivity to light
  - Dizziness (loss of balance)
  - Difficulty concentrating
  - Amnesia (memory loss)
  - Confusion (repeating questions)
  - Irritability
  - Depression
  - Vision problems
  - Difficulty thinking

- **Long term:**
  - Headaches
  - Memory loss
  - Difficulty sleeping
  - Slow processing of information
  - Some other short term symptoms can last too
Concussion Symptoms

WHEN DO THE SYMPTOMS SHOW UP?

- Concussion symptoms can take minutes, hours, days, or even longer to show up.

- Most concussions occur without loss of consciousness.

- Some people have even reported little or no symptoms after sustaining a concussion.
Emergency Symptoms

- One pupil larger
- Drowsiness
- Consistent headache gets worse
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Difficulty recognizing people or places
- Increased symptoms
- Unusual behavior
- Loss of consciousness
Are concussions only a football phenomenon?

NO!

- Lots of risks in soccer
  - Headers
  - Goalposts
  - Head-to-Head contact
  - Elbows
  - Knees
  - Ground

- Often taken less seriously because there are few overall “impacts” in soccer
Are concussions only a football phenomenon?

- More athletes sustain a concussion in hockey than any other injury (ages 5-18)
- Impact speed of a soccer ball being headed by a player can reach 70 mph
- Soccer is the most common sport with concussion risk for females (50% chance for concussion)
- Greatest number of TBI-related emergency visits included bicycling, playground activities, basketball, and soccer along with football
- During the last decade, emergency visits for sports- and recreation-related mTBIs, including concussions, among children and adolescents increased by 60%.
FORCE

- No generally accepted level for what constitutes a concussion

- Two main types of force
  - Linear (straight on)
  - Rotational

- Rotational force often creates more problems in concussion recovery
Sub-Concussive Blows

We still don’t have a lot of specific info about these but we do know that they can cause damage.
Sub-Concussive Blows

What are they?

ANYTHING NOT SERIOUS ENOUGH TO BE CONCUSSION

• Headers
• Impact with ground
  • Elbows
  • Knees
• Head-to-head
• Goalposts
SLI HIT COUNT

MODELED AFTER CONCEPT LIKE A PITCH COUNT

- Measures the number of sub-concussive hits
- Tracked over the course of a season
- Encourages teams to be responsible for how many hits they subject their athletes to over time

- Suggest parents ask questions on practice techniques
  - Would you rather have you kid with:
    - 160 hits per season
    - 106 hits per season
    - 60 hits per season

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Concussions

**Difficulty in reviewing facts and statistics:**

- Lots of conflicting information
- Different studies
- Conflicting categorization of concussions
- Changing definitions of “what constitutes” a concussion
- Historically been only self-reported

There is a big gap:

- When we speak to groups of players, we typically ask:
  - How many “diagnosed” concussions? (at the time you suffered it)
  - How many estimated concussions? (based on what you know today)
Concussions

FIVE PHASES

- PREVENTION
  - Education, rules, equipment, safety, tackling techniques

- BASELINE TESTING
  - Neurocognitive, Vision, Balance, Reaction, new technology

- DIAGNOSIS
  - Sensors, blood tests, sideline testing

- TREATMENT AND RECOVERY
  - Helping people recover from the injury
  - Return to Learn/Return to Play
  - Eliminate Symptoms

- MEDICAL RESEARCH
Concussion Prevention FAQ

- Can concussions be prevented?
  - No

- What steps can we take?
  - Education
  - Proper technique
  - Neck strengthening
  - Core strengthening
  - Less repeated stress on head (i.e. headers)
Concussion Prevention

- **Education**
  - Awareness for
    - Parents
    - Coaches
    - Athletes
    - Athletic Trainers
  - CDC Info

- **Rules**
  - Reduce amount of heading
  - Start heading at older age
  - Less hitting in practice
  - Penalties for illegal hits

- **Equipment**
  - Better helmets
  - Covers for helmets
  - Other padding
  - Headbands

- **Safety**
  - Better field surfaces
  - Tackling techniques
Baseline tests and Sideline Tests

- **Baseline tests**
  - Establish baseline for a variety of functions prior to injury

- **Sideline Tests**
  - Testing administered after suspect concussion to determine if a concussion exists

- **Post Injury Tests**
  - Designed to determine if athlete has returned to their baseline function level
BASELINE TESTING

Why is baseline testing important?

- Helps establish a proper baseline in elements of:
  - Neurocognitive function
  - Vision
  - Balance
  - Reaction time

- Helps guide the recovery process
  - Identify which elements above are functioning properly
  - Help provide objective data for medical providers
Why don’t more organizations do comprehensive baseline testing?
BASELINE TESTING

WHERE DO I START?

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BASELINE TESTING

Cognitive
- ImPACT
- AXON
- Vital Signs
- XLNTBrain
- Headminder Concussion Index

Balance/Reaction
- SWAY Balance
- BESS
- HeadRehab
- C3Logix
- Biodex

Visual
- King Devick
- Dynamic Visual Acuity Test

Observation
- SCAT
- SAC Test
BASELINE TESTING

- **Challenge of baseline testing**
  - Understanding the different testing platforms available
  - Knowing the requirements of each test
  - Recognizing the limitations of each test
  - Determining the feasibility of implementing on a large basis
  - Having the staff and expertise to administer the tests.
  - Understanding the output from the tests/what results mean
  - Purchasing equipment to run the tests
  - Staying current on all testing platforms/requirements
  - Keeping up with new technologies
Sample Baseline Concussion Tests

- **SCAT=Sideline Concussion Assessment Tool**
  - Baseline version completed in advance
  - Post Injury version completed with healthcare professionals

- **King-Devick Test**
  - Consists of reading numbers of 3 successive pages
  - The pages get progressively more difficulty in terms of the spacing of the numbers on the page, both vertically and horizontally
  - Baseline testing is done prior to season/competition
  - Sideline testing can be done in any environment
King Devick Test

King-Devick Test Sample Pages

```
 3  7  5  9  0
 2  5  7  4  6
 1  4  7  6  3
 7  9  3  9  0
 4  5  2  1  7
 5  3  7  4  8
 7  4  6  5  2
 9  0  2  3  6
```

TEST II

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King-Devick Test Sample Pages

TEST III

5  4  1  3  8  0
4  6  5  3  4  2
7  2  5  4  9  7
3  1  6  9  8  4
1  4  5  1  3  5
9  3  4  8  3  1
5  1  6  5  2  7
4  3  5  2  6  7

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DIAGNOSIS

- **Sensors**
  - Different types
    - RED LIGHT/GREEN LIGHT
      - Can’t tell force of impact
      - Set at a level but provides no data for future use
      - Many deficiencies
  - Brain Sentry
  - Shockbox
  - Gforce Tracker
    - More sophisticated
    - Higher cost
    - Might be too much data for people

- **Blood tests**
  - Detects bio marker that passes thru brain membrane
DIAGNOSIS

- Helmet Sensors

MEMS-based Impact Alert

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DIAGNOSIS

- Soccer Specific Sensors (or any non-helmet sport)
  - Different types

Concussion Sensor Mouth guard

Behind Ear Sensor

Triax Sensor
DIAGNOSIS

- Soccer Specific Headgear (or any non-helmet sport)
  - Skullcrate
  - Full 90
  - Donjoy Headgear
  - Secure 4 Safety Goal Covers
  - Forcefield Headbands
  - Noggin Head Protection
  - Adidas Headgear
  - Shock Doctor Mouth Guard
Post-injury testing

- **SIDELINE TESTS**
  - SCAT
  - Neurocognitive Tests
  - King Devick
  - Balance

- **HARD TO DO IN YOUTH SETTING**
  - Computers
  - Wifi
  - Staffing—lack of trained professionals
Post Injury Testing

- **Common problems with post-injury testing**
  - Given in very different environments than baseline tests
  - Determine whether athlete has recovered from concussion
  - Importance of following graduated RTP Protocol
  - Many organizations, teams and medical professionals are using (or misusing) baseline tests as return to play tests
TREATMENT AND RECOVERY

PRIORITIES

- Helping athlete recover from the injury
- Getting students back to school
- Return to participation in sports
- Resume normal life activities
- Avoid long term damage
Congratulations,
you are back to your baseline

- NOW WHAT?
  - Are you ready for competition?

- NO

- Example of ACL MRI or broken bone x-ray/rehab recovery
  - Would never take kid from doctor to practice field
  - Why do we do it with these injuries?
RETURNING TO LEARN (RTL)

At school, parents should request:

- Rest breaks
- Fewer hours
- More time
- Help with homework
- Less computer
Return To Play (RTP)

- Should **ONLY** be made by medical professional
- **BUT** medical professional:
  - Must have knowledge of concussions
  - Must have good/objective data and information
  - Must get feedback from athlete, parents, family, coaches
- **YOU** are with athlete much more than any physician
  - Keep an eye on how they are doing
  - Have them assessed cognitively, vision, balance, reaction time
- **WARNING:** Kids who have “returned” to cognitive baseline
  - Often only 60-70% in vision, balance, reaction time

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Graduated Return to Play Protocol

- Return-To-Play Policy (steps)
  1. Stationary biking 15-20 minutes
  2. Cardio drills/Running/Sprinting
  3. Sport specific drills-no contact
  4. Full practice with contact
  5. Full game clearance
Graduated Return to Play Protocol

What does this mean?

- Cannot return day of concussion
- Cannot start RTP until 2 requirements
  - Symptom free
  - Returns to baseline in ALL phases

BY DEFINITION: If a player suffers a concussion, player must remain out an absolute minimum of one week
Players Returning Too Early

Returning to play too early poses multiple risks

- 2nd impact syndrome
- Greatest risk for long term damage
- Potential = DEATH
- More prone to a subsequent concussion
- Vision, balance, reaction time not up to par
Players Returning Too Early

- **ARE NFL TEAMS FOLLOWING THIS?**
  - NO

- Take a look at our NFL Concussion Report
  - Front page of our website
- Almost 50% of the players with concussions did not miss even one game
- Significant number of teams reporting low number
- If we don’t do it at the highest level, how can we expect the youth and high schools to follow
Players Returning Too Early

**CASE STUDY: Sidney Crosby**

- Star Center for the Pittsburgh Penguins
- Sustained initial concussion against Washington Capitals in the Winter Classic on New Year’s Day 2011
  - Returned to play a few shifts in that game
- Played January 5th against Tampa Bay and suffered another severe hit
  - Impact of 2nd hit was probably less than half of the impact of initial hit
  - Still flew with team to Montreal
  - Symptoms did not improve
- January 7th—team announces he has concussion
- Missed rest of season and playoffs
- Put on injury list to start the 2011-2012 season
- Crosby did not skate in another NHL game until November 21, 2011
- A few weeks later he missed another month because of a concussion
Players Returning Too Early

- CASE STUDY: Sidney Crosby
Players Returning Too Early

- **CASE STUDY:** Sidney Crosby

  - **Logical questions:**
    - How does this apply to me?
    - How does this apply to youth soccer environment?

  - **How does this apply to youth athletes?**
    - Elite athlete
    - Unlimited financial resources
    - Best medical care available
    - Best supervision available

  - **WHAT WILL HAPPEN TO YOUR ATHLETES**
    - If you allow them to return to play when they are not ready
    - If they have not properly recovered from concussions
    - If they suffer a second concussion
Why is this receiving so little attention?
- Few tangible answers
- Lack of long term scientific studies
- More difficult to find solution
- Harder to train all treatment providers than provide general education materials

Most groups treat it almost like a hospice model
- “We don’t really know if we can do anything for you but we will make you as comfortable as we can in the meantime”
- “You just have to accept that was part of the price of playing professional football”
TREATMENT AND RECOVERY
Risk Management and Litigation

- Can never stop all lawsuits
- Focus on health and safety of players
- Follow procedures and protocols
- Make sure that athletes recover before being allowed back on field

Which parent lawsuit would you rather fight??
- Wrongfully holding out child
- Catastrophic injuries/death
Risk Management and Litigation

But let’s look at the practical implications as you see them in action from the perspective of most sports organizations.
Wisconsin Concussion Law

W.S.A. 118.293- Effective: December 15, 2013

Concussion and head injury

4)(a) An athletic coach, or official involved in a youth athletic activity, or health care provider **shall remove a person from the youth athletic activity if** the coach, official, or health care provider **determines** that the person exhibits signs, symptoms, or behavior consistent with a concussion or head injury or the coach, official, or health care provider **suspects** the person has sustained a concussion or head injury.

(b) A person who has been removed from a youth athletic activity under par. (a) may not participate in a youth athletic activity until he or she is evaluated by a health care provider and **receives a written clearance** to participate in the activity from the health care provider.
(5)(a) Any athletic coach, official involved in an athletic activity, or volunteer who
fails to remove a person from a youth athletic activity under sub. (4)(a) is immune from civil liability for any injury resulting from that omission unless it constitutes gross negligence or willful or wanton misconduct.

(b) Any volunteer who authorizes a person to participate in a youth athletic activity under sub. (4)(b) is immune from civil liability for any injury resulting from that act unless the act constitutes gross negligence or willful or wanton misconduct.

(6) This section does not create any liability for, or a cause of action against, any person.
Wisconsin Concussion Law

The law covers public and private schools, athletic clubs, and other organizations.

As a result, the law extends past what the WIAA concussion guidelines can cover because the WIAA guidelines can only apply to those schools that are a part of the association.

The law applies to coaches, whether paid or unpaid (volunteering), they too need to receive and acknowledge receipt of concussion information.

- The law refers to coaches of youth athletic activities and not classroom physical education educators, it does not apply to physical education classes.
Wisconsin Concussion Law

- The education component of the law is mandatory.

- The law requires that at the beginning of the school year or at the beginning of the season for a youth athletic activity, the person operating the youth athletic activity shall distribute a concussion and head injury information sheet to each person who will be coaching that youth athletic activity and to each person who wishes to participate in that youth athletic activity.

- No person may participate in a youth athletic activity unless the person returns the information sheet signed by the person and, if he or she is under the age of 19, by his or her parent or guardian.

  - Handing out the information only one time to a student who participates in multiple athletic activities also meets the requirements of the law.
Wisconsin Concussion Law

- The law also delegates the removal decision to a coach, official, or health care provider.
  - First two are not qualified or trained, last one typically not on site
  - An athlete that has been removed from a youth athletic activity may not return to the youth athletic activity until he or she is evaluated by a health care provider and receives a written clearance to participate in the activity from the health care provider.

Who is liable for a concussion injury to a participant under the law?

- Wisconsin's youth concussion law expressly states that there is no cause of action against any person under the law.
- Therefore, there is no civil liability concern for any coach or volunteer that fails to remove an athlete from a youth athletic activity who is suspected of having a concussion unless the failure to remove constitutes gross negligence or willful or wanton misconduct.
What are the problems with these types of laws?

- Vague
- Who has the leverage? Parent, doctor, athlete?
  - Will doctor want a suit from a parent threatening because they want their kid to return to competition
    - WHY ARE YOU HOLDING MY KID OUT?
    - BASED ON WHAT STANDARDS
- Standards are not well defined
- Can avoid more issues by “not removing” athlete than you can by returning them too early
- If the medical community has trouble diagnosing concussions or evaluating recovery, then what would constitute “gross negligence or willful or wanton misconduct”.

Wisconsin Concussion Law
What are organizations required to do

Forms:

- Agreements
  - Coaches Agreement
  - Parent/Athlete Agreement

- Information Sheets
  - Parent Info Sheet
  - Coaches Info Sheet
  - Athlete Info Sheet

- Waivers
  - Return To Play form signed by medical professional
What are organizations required to do

**Forms:**
- Sample Concussion Management Policy
- Concussions and School Performance
- Suggested Concussion Management Example
- Condensed info and signature page
- SCAT 2 Sideline Assessment
- Concussion Management
- Cognitive Development and Training
- Mental Toughness Training

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