Illinois Association of School Nurses
2016 Annual Conference
Concussion Oversight

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Disclosures or Conflicts of Interest

Zero – Zip – None
Punch Drunk Syndrome

• First named in 1928 by Dr. Harrison Martland
  – Dementia Pugilistica
• Pop Warner Hit
“During the past 7 years the practice has been too prevalent of allowing players to continue playing after concussion. Again this year this is true. Sports demanding personal contact should be avoided after a concussion.”
1937

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Proceedings of the 17th Annual Meeting of the American Football Coaches Association
Unique problems with concussions

• “Invisible Injuries”

• Concussions do not cause “pain” like other injuries because the brain tissue does not have receptors for pain

• Many times an athlete can ‘play through’ a concussion

Nowinski 2016
• Contrecoup
Signs and Symptoms

• **Signs Observed**
  – Can’t recall events prior to or after hit
  – Appears dazed or stunned
  – Forgets and instruction, is confused about an assignment, or unsure of game, score, or opponent
  – Moves clumsily
  – Answers questions slowly
  – Loses consciousness (even briefly)
  – Shows mood, behavior, or personality changes

• **Symptoms Reported**
  – Headache or “pressure” in head
  – Nausea or vomiting
  – Balance problems or dizziness, double or blurry vision
  – Bothered by light or noise
  – Feeling sluggish, hazy, foggy, or groggy
  – Confusion, or concentration or memory problems
  – Just not “feeling right” or “feeling down”
Symptom Timing

• Some symptoms present immediately

• Some symptoms are delayed for days

• Some athletes will not display any signs or symptoms initially, but symptoms may appear within minutes or hours
Concussion Data

• Data collected from ED visits show a 62% increase (153,375 to 248,418) in nonfatal TBI’s between 2001 and 2009.

• As many as 3.8 million reported and unreported sport- and recreation-related concussions occurring each year.

• The majority (80–90%) of concussions resolve in a short (7–10 day) period, although the recovery time frame may be longer in children and adolescents.
Neurometabolic cascade following concussion
Impact Expectation by Sport

Figure 3. Impact Expectation by Sport

- High Impact Expectation
  - Contact & Collision
    - Field Hockey*
    - Football*
    - Ice Hockey*
    - Lacrosse*
    - Pole Vault*
    - Rugby
    - Skiing
    - Soccer*
    - Wrestling*
  - Contact
    - Baseball*
    - Basketball*
    - Cheerleading
    - Diving*
    - Equestrian*
    - Gymnastics*
    - Softball*
    - Water Polo*
  - Limited Contact
    - Bowling
    - Cross Country
    - Fencing
    - Golf
    - Rifle
    - Rowing
    - Swimming
    - Tennis
    - Track & Field
    - Volleyball

*2010 Sports
IHSA Protocol for NFHS Sports Playing Rule for Concussions

• “Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion, or balance problems) shall be immediately removed from the contest and shall not return to play until cleared by an appropriate health care professional.”

IHSA 2010
Public Act 97-0204

Protecting our Student Athletes Act

- Officially became law Thursday; July 28, 2011 in a signing ceremony held at Soldier Field in Chicago. The law, which was introduced in the House by Rep. Tom Cross (R-Oswego) and in the Senate by Kwame Raoul (D-Chicago), amends the school code to require school districts to work with the IHSA in developing guidelines for the education of athletes, coaches and parents/guardians to the potential risk of concussions and/or brain injury. This law aims to better educate the public as to the dangers of head injuries and the potential long term effects that young athletes can suffer from head trauma incurred during athletic competition.
Public Act 099-0245

Youth Sports Concussion Act

• On August 3rd, 2015, Governor Rauner signed into law SB 07 (Public Act 99-245). The legislation focuses primarily on concussion management at the middle school/junior high school and high school levels. The legislation amends the School Code and is a requirement for all schools.

• The formation of Concussion Oversight Teams (COT) at all public, private, or charter schools. The COT’s primary function will be to develop return-to-play and return-to-learn protocols for students believed to have experienced a concussion. The protocols should be based on peer-reviewed scientific evidence consistent with guidelines from the Center for Disease Control and Prevention.
Post concussion syndrome (PCS)

• Persistence of concussion for greater than 6 weeks post-injury
• Occurs between 10% and 30% of diagnosed concussions
• Physical and/or cognitive activity causes symptoms to worsen
• Physical and psychosocial wellbeing of PCS patients equal to children undergoing chemotherapy
• Can last years if improperly managed
Second impact syndrome (SIS)

• Occurs when the brain swells rapidly, and catastrophically, after a person suffers a second concussion before symptoms from an earlier one have subsided.

• Massive brain swelling leads to profound disability or death (50% mortality)

• Rare condition – typically <3 cases per year
Chronic Traumatic Encephalopathy

• CTE is a progressive degenerative disease of the brain.

• These changes can begin months, years, or even decades after the last concussion.

• Symptoms: memory loss, confusion, impaired judgment, paranoia, impulse control problems, aggression, depression, and, eventually, progressive dementia.

• CTE has recently been found in six deceased former high school football players, one only 17 years old.
NFL CTE Statistics

• 4500 former players reached a settlement with the NFL in 2013 over concussion lawsuit.
• Researchers have found evidence of CTE in 96% of deceased NFL players they tested – 87 of 91 players.
• Living, former players diagnosed with CTE or ALS – 33 (ages range from 23 to 68)
  – Notables:
    • Tony Dorsett
    • Brett Favre
    • Jim McMahon
    • Adrian Robinson (recently deceased)
Current Recommendations

• Preseason computerized neurocognitive testing i.e. ImPACT
• Athletes need not be taken to the ED (unless unconscious)
• Routine CAT Scans are not recommended
• Athletes should be returned to the classroom as soon and as safe as possible
• Athletes should follow a structured RTP (Return to Play Progression)
SportsCare Policy on Concussions

- Athletes, at SportsCare covered school/events, will be encouraged to take the ImPACT baseline pre-season cognitive evaluation.

- Following “the Protecting our Students Athletes Act” enacted in July of 2011, athletes that exhibit signs or symptoms of concussion will be immediately removed from activity and evaluated by SportsCare certified athletic trainer or licensed practicing physician.

- Concussed athletes will be re-evaluated by a SportsCare certified athletic trainer and if found to still be exhibiting signs or symptoms of concussion will be directed to SportsCare’s Lead Athletic Trainer for ImPACT post testing and referral to a SportsCare physician.

- If an athlete is no longer exhibiting concussive symptoms, athlete will be subject to return to play protocol and parents will be informed.

- Athletes seen by physician, other than SportsCare Credentialed ImPACT Consultant, need clearance in writing and will be subject to Return to Play Protocol.

- Parents of athletes will be informed of outcome of ImPACT testing by school athletic trainer or via SportsCare Lead Athletic Trainer as determined by SportsCare’s Credentialed ImPACT Consultant.

- Athletes cleared for return to play will be required to complete a 5 stage graduated exercise progression as stated by ImPACT.

- **Certified Athletic Trainer has the final say on return to play decisions.**
References & Concussion Information

Websites

• www.memorialmedical.com/Services/SportsCare/Default.aspx

• www.sportslegacy.org/index.php/about-sli/our-team/123

• www.ihsa.org/initiatives/sportsMedicine/index.htm

• www.cdc.gov/concussion/HeadsUp/youth.html

• www.illinoisathletictrainers.org

• www.impacttest.com
A Child’s Brain is a Child’s Future... Protect It.