

1. Overview

1.1. In response to the growing concern over concussions in athletics there is a need for school districts to develop and utilize a "Concussion Management Plan". While regional limitations in the availability of specifically trained school and medical personnel are acknowledged, the following document serves as a standard for concussion management.

1.2. The following components will be outlined as part of a comprehensive concussion management plan:

- 1.2.1. Concussion Overview (section 2)
- 1.2.2. Concussion Education for Student-Athletes and Parent(s)/Guardian(s)(section 3)
- 1.2.3. Concussion Education for Coaches (section 4)
- 1.2.4. Pre-season concussion assessment (section 5)
- 1.2.5. Concussion action plan (section 6)
- 1.2.6. **Appendix A:** Wisconsin Fact Sheet for Athletes
- 1.2.7. **Appendix B:** 2011 Wisconsin Act 172
- 1.2.8. **Appendix C:** Wisconsin Fact Sheet for Parents
- 1.2.9. **Appendix D:** Parent & Athlete Agreement Form
- 1.2.10. **Appendix E:** Wisconsin Fact Sheet for Coaches
- 1.2.11. **Appendix F:** Coaches Agreement Form
- 1.2.12. **Appendix G:** ImPACT Testing Information and Parent/Athlete Consent Form
- 1.2.13. **Appendix H:** Concussion Signs and Symptom Sheet
- 1.2.14. **Appendix I:** Caring for A Concussion Information Sheet
- 1.2.15. **Appendix J:** Sleep Hygiene Recommendations
- 1.2.16. **Appendix K:** Fact Sheet for Professionals
- 1.2.17. **Appendix L:** Classroom Signs and Symptoms Identifier
- 1.2.18. **Appendix M:** Return to Learning Phases and Physician Recommendations Sheet
- 1.2.19. **Appendix N:** Exertion Return to Play Phases/Guidelines
- 1.2.20. **Appendix O:** Return to Play Clearance Form
- 1.2.21. **Appendix P:** Prevention Strategies

2. What is a Concussion?

2.1. Introduction: Stated in the guidelines for management of concussion in sports by the NFHS, a concussion is a type of traumatic brain injury that interferes with the normal function of the brain, induced by biomechanical forces. Concussions may occur from a direct blow to the head, face, neck or elsewhere on the body with an impulsive force transmitted to the head.

2.2 Concussion in accordance with the 3rd International Conference on Concussion in Sport (2008), is defined as a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces. Common elements include but are not limited to:

Headache	Vomiting	Nervousness
Dizziness	Sadness	Drowsiness
Balance Problems	Trouble Falling Asleep	Loss of Consciousness
Irritability	Difficulty Concentrating	Difficulty Remembering
Numbness/Tingling	Feeling Slowed Down	Sensitivity to Light
Slurred/Incoherent Speech	Sleeping Less Than Usual	Sensitivity to Noise
Sleeping More Than Usual	Delayed Verbal or Motor Responses	
Confusion	Feeling More Emotional (or a change in emotions)	
Fatigue	Feeling Mentally "Foggy", "Sluggish", "Hazy", "Groggy"	
Nausea	Visual Disturbances (e.g. blurry vision, double vision)	

3. Concussion Education for Student Athletes and Parent(s)/Guardian(s)

3.1. At the beginning of individual sport seasons, student-athletes shall be presented with a discussion about concussions and given a copy of the WI DPI and WIAA's "Wisconsin Fact Sheet for Athletes". **See Appendix A**

3.1.1. Individual sport season is defined as an athletic game or competition against another team, club, or entity, or in practice or preparation for an organized athletic game or competition against another team, club, or entity. **See Appendix B**

3.1.2. This information will be presented by the school's Licensed Athletic Trainer in cooperation and consultation with the athletic trainers consulting physician and school's athletic director and administration. Additionally, local medical professionals may also participate as needed.

3.2. At the beginning of individual sport seasons, parent/guardian(s) shall be presented with a copy of the WI DPI and WIAA's "Wisconsin Fact Sheet for Parents". **See Appendix C**

3.3. These materials are available free of charge from the WI DPI. To order or download go to the WI DPI webpage or use the following link: <http://dpi.wi.gov/sped/tbi-conc-guidelines.html>

3.4. All student-athletes and their parents/guardians will sign a statement in which the student-athlete accepts the responsibility for reporting their injuries and illnesses to the coaching/athletic training staff, parents, or other health care personnel including signs and symptoms of concussion. This statement will also acknowledge having received the above-mentioned educational handouts. **See Appendix D**

3.5. All student-athletes shall be **required** to participate in the above education prior to their participation in any sport through the Clear Lake High School.

4. Concussion Education for Coaches

4.1. It is required that each year that the schools administrative staff, coaches, Licensed Athletic Trainers, and other healthcare professionals working directly with the school district shall review the concussion management plan and a copy of the WI DPI and WIAA's "Wisconsin Fact Sheet for Coaches" **See Appendix E**

4.1.1. All coaches will sign a statement in which the coach acknowledges having received and read the above-mentioned educational handout. **See Appendix F**

4.2. All Fall season coaches, Licensed Athletic Trainers, other medical staff, and administrative personnel shall complete a course dealing with concussion, its signs, symptoms and management. This course shall be completed prior to August 1st. After August 1st, all other coaches, volunteers, and individuals shall complete the course prior to working with student-athletes. The CDC, in partnership with the National Federation of State High School Associations, has developed a free web based course, "Concussion in Sports: What you need to know", to be used for this purpose.

4.2.1. Coaches, Licensed Athletic Trainers, other medical staff, and administrative personnel shall complete the course each year in accordance with timelines listed in 4.2.

4.2.2. The "Concussion in Sports: What You Need to Know" on-line course is available free of charge after registering at <http://www.nfhslearn.com>

5. Pre-season concussion assessment

5.1. Optimally, a concussion history should be included as part of all of a student/athlete's pre-participation physical health examinations with their health care professional.

5.2. Student-athletes must complete a baseline assessment prior to the beginning of the school year or their individual sports seasons as appropriate.

5.2.1. Student-athletes will be required to complete baseline testing prior to sports participation in grades 6, 7, 9 and 11.

5.2.2. New or transfer students will be required to complete baseline testing prior to participating in sports in the Clear Lake School District.

5.2.3. Any student-athlete sustaining a concussion must complete a baseline assessment prior to the beginning of that sport in which the concussion was sustained the following year, but not less than 1 month after being cleared for return-to-play.

5.2.1.1 In the event a new baseline cannot be completed, the post-injury test used for clearance shall be considered and used as the new baseline.

5.2.2. Neurocognitive Testing. Pre-season neurocognitive testing of all athletes is required and will be accomplished through ImPACT and SCAT3 (Sports Concussion Assessment Tool version 3) or Child SCAT3 (Child Sports Concussion Assessment Tool Version 3) testing.

5.2.2.1. The ImPACT computerized program is designed to measure specific brain functions that may be altered following a concussion. The program is designed in such a way as to allow athletes to be tested pre-season so that post-injury performance may be compared to the athlete's own baseline. Athlete and Parent must sign an agreement in order to take the test. **See Appendix G.**

5.2.2.2. The SCAT3 is comprised of a symptom checklist, standard and sport specific orientation questions, the Standardized Assessment of Concussion (SAC), and an abbreviated form of the Balance Error Scoring Scale (BESS)

5.2.2.3. Neurocognitive testing may be administered by the school's Licensed Athletic Trainer or other designated school personnel trained in test administration in a controlled computer lab environment.

5.3 It is recommended that each year, student-athletes complete a Balance Error Scoring System test (BESS), administered by the school's Licensed Athletic Trainer, prior to the beginning of the school year or their individual sports seasons as appropriate.

6. Concussion Action Plan

6.1. When a student-athlete has a mechanism of injury and/or shows any signs, symptoms or behaviors consistent with a concussion, the athlete shall be removed immediately from practice or competition and evaluated by school personnel, the Licensed Athletic Trainer, or other health care professional with specific training in the evaluation and management of concussion.

6.1.1. School personnel, including coaches are encouraged to utilize a pocket guide on the field to assist them in recognizing a possible concussion. An example pocket guide is available as part of the CDC toolkit "Heads Up: Concussion in High School Sports" available at <http://www.cdc.gov/concussion>

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6.1.2. Physical Signs of a Concussion

- 6.1.2.1. Headache/Pressure in the Head
- 6.1.2.2. Neck Pain
- 6.1.2.3. Nausea/Vomiting
- 6.1.2.4. Dizziness
- 6.1.2.5. Blurred Vision
- 6.1.2.6. Balance Problems
- 6.1.2.7. Sensitivity to Light/Noise
- 6.1.2.8. Fatigue/Low Energy
- 6.1.2.9. Drowsiness/Trouble Falling Asleep
- 6.1.3. Cognitive Signs of a Concussion
 - 6.1.3.1. Feeling Slowed Down
 - 6.1.3.2. Difficulty Concentrating/Remembering
 - 6.1.3.3. Confusion
 - 6.1.3.4. More Emotional
 - 6.1.3.5. Irritability
 - 6.1.3.6. Sadness
 - 6.1.3.7. Nervous/Anxious

6.2. Where possible, the athlete shall be evaluated on the sideline by the Licensed Athletic Trainer or other appropriate health care professional. The sideline evaluation will include using the SCAT3 or the Child SCAT3.

6.2.1. The SCAT3 will be utilized with ages 13 and older. The Child SCAT3 will be utilized with ages 12 and below.

6.3. A student-athlete displaying any sign or symptom (**See Appendix H**) consistent with a concussion shall be withheld from the competition or practice and shall not return to activity until receiving written clearance from a health care provider. The student-athlete's parent/guardian(s) shall be immediately notified of the situation.

6.4. The student-athlete will receive serial monitoring for deterioration. Student-athletes and their parent/guardian shall be provided with written instructions upon dismissal from the practice/game. **See Appendix I and Appendix J**

6.5. In accordance with the Clear Lake School District and school's emergency action plans, immediate referral to Emergency Medical Services should be provided for any of the following "Red Flag Signs or Symptoms".

- 6.5.1. Prolonged Loss of Consciousness
- 6.5.2. Seizure like activity
- 6.5.3. Slurring of speech
- 6.5.4. Paralysis of limb(s)
- 6.5.5. Unequal pupils or dilated and non-reactive pupils
- 6.5.6. Suspected neck injury
- 6.5.7. Decreased level of alertness
- 6.5.8. Unusually drowsy
- 6.5.9. Severe or worsening headache
- 6.5.10. Persistent vomiting
- 6.5.11. Difficulty breathing
- 6.5.12. At any point where the severity of the injury exceeds the comfort level of the on-site medical personnel

6.6. Consultation with a team of health care professionals experienced in concussion management shall occur for all student-athletes sustaining a suspected concussion.

6.6.1. This healthcare provider will be a CIC (Credentialed IMPACT Consultant).

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6.7. For the purposes of this document and per 2011 WI Act 172, a health care professional is defined as a person to whom all of the following apply:

6.7.1. He or she holds a credential that authorizes the person to provide health care

6.7.2 He or she is trained and has experience in evaluating and managing pediatric concussions and head injuries

6.7.3 He or she is practicing within the scope of his or her credential.

6.7.3.1. "Credential" means a license or certificate of certification issued by the state of Wisconsin.

6.8. Subsequent management of the student-athlete's concussion shall be at the discretion of the treating health care professional, and may include the following:

6.8.1. If necessary, referral to physical therapy, neuropsychologist or psychologist.

6.8.2. Medication management of symptoms, where appropriate

6.8.3. Provision of recommendations for adjustment of academic coursework, including the possible need to be withheld from coursework obligations while still symptomatic. **See Appendix K and Appendix L for Fact sheet for professionals signs and symptoms identifier.**

6.8.3.1. Adjustments of academic coursework will be provided on a case-by-case basis

6.8.3.2. Recommendations will be provided by the managing healthcare professional. **See Appendix M for return to learning recommendations**

6.8.3.3. It is expected that all student-athletes will return to all normal academic coursework prior to returning to practice

6.8.4. Direction of Return-to-Play protocol, to be coordinated with the assistance of the Licensed Athletic Trainer. **See Appendix N for return to play protocol**

6.8.4.1. The Return-to-Play protocol will require a student-athlete with a suspected head injury to follow the 6-stage exertion return-to-play guidelines

6.8.4.2. The student-athlete will be required to complete a post-injury ImPACT test. This test will be used as a comparison to their baseline ImPACT test.

6.8.4.3. The student-athlete will be required to complete a post-injury SCAT3 or Child-SCAT3

6.8.5. Final authority for Return-to-Play shall reside with the attending health care professional (see 6.7), or their designee. Prior to returning to competition, the concussed student-athlete must have a return-to-play clearance form signed by a health care professional, as defined by this document.

6.9. The incident, evaluation, continued management, and clearance of the student-athlete with a concussion shall be documented.

6.9.1. Written clearance forms signed by an appropriate health care professional will be maintained by the Licensed Athletic Trainer through Turtle Lake & Clear Lake Physical Therapy & Rehab Specialists, and a copy will be provided to the school district for any student-athlete cleared from a head injury. **See Appendix O for Written Clearance Form**

7. Concussion Prevention

7.1 Several factors have been identified as methods to prevent sport-related concussions. These methods are not a guarantee that injury will not occur however will reduce the risk of concussion injury. **See APPENDIX P.**

7.1.1 Proper Protective Equipment

7.1.1.2 Football helmets should be fit using the STAR (Summation of Tests for the Analysis of Risk) rating system.

7.1.2 Cervical muscle strengthening

7.1.2.1 Strengthening of the cervical muscles in all planes has been shown to decrease the biomechanical forces transmitted to the head and neck.

7.1.3 Visual Function

7.1.3.1 Athletes must be able to accurately do the following: identify static/dynamic features, scan/interpret visual information, alternate between looking between varying distances, perform efficient eye movements and respond quickly to visual stimuli.

7.1.3.2 The athletes ability to anticipate a hit will decrease the biomechanical forces transmitted through the head and neck.

7.1.4 Proper Technique for Tackling

7.1.4.1 Athletes need to be educated, instructed and trained in both making a tackle and being tackled to decrease forces transmitted through the head and neck.

Links to resources:

- Utah High School Activities Association – www.uhsaa.org
- National Federation of High School Sports “Concussion in Sports” – www.nfhslearn.com
- Wisconsin Interscholastic Athletic Association – www.wiaawi.org
- Consensus on Concussion in Sport: The Third International Conference on Concussion in Sport Held in Zurich, November 2008. *Journal of Athletic Training*, 2009. National Athletic Trainers Association, Inc. www.nata.org/jat, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2707064/>
- Wisconsin Department of Public Instruction - <http://www.dpi.wi.gov/sped/tbi-conc-guidelines.html>
- ImPACT: www.impacttest.com