

Protocol and Procedures for Management of Sports-Related Concussion

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Holyoke High School Athletics

Medical management of sports-related concussion is evolving. In recent years, there has been a significant amount of research into sports-related concussion in high school athletes. Holyoke High School and Dean Tech have established this protocol to provide education about concussion for athletic department staff and other school personnel. This protocol outlines procedures for staff to follow in managing head injuries, and outlines school policy as it pertains to return to play issues after concussion.

Holyoke High School and Dean Tech seek to provide a safe return to activity for all athletes after injury, particularly after concussion. In order to effectively and consistently manage these injuries, procedures have been developed to aid in ensuring that concussed athletes are identified, treated and referred appropriately, receive appropriate follow-up care during the school day, including academic assistance, and are fully recovered prior to returning to activity.

In addition to recent research, two (2) primary documents were consulted in developing this protocol. The “Summary and Agreement Statement of the 2nd International Conference on Concussion in Sport, Prague 2004” (referred to in this document as the Prague Statement), and the “National Athletic Trainers’ Association Position Statement: Management of Sport-Related Concussion” (referred to in this document as the NATA Statement).

The HPS Athletic Training Staff, Athletic Director, Nurse Supervisor, and School Physician will review this protocol on a yearly basis. Any changes or modifications will be reviewed and given to athletic department staff and appropriate school personnel in writing. All athletic department staff will attend an annual in-service meeting in which procedures for managing sports-related concussion are discussed.

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I. Recognition of Concussion

A. Common signs and symptoms of sports-related concussion

1. Signs (observed by others):

- Athlete appears dazed or stunned
- Confusion (about plays, assignment, etc.)
- Forgets plays
- Unsure about game, score, opponent
- Moves clumsily (altered coordination)
- Balance problems
- Personality change
- Responds slowly to questions
- Forgets events prior to hit

- Forgets events after hit
- Loss of consciousness (any duration)

2. Symptoms (reported by athlete):

- Headache
- Dizziness
- Fatigue
- Nausea or vomiting
- Double vision, blurry vision
- Sensitive to light or noise
- Feels sluggish
- Feels “foggy”
- Problems concentrating
- Problems remembering

3. These signs and symptoms are indicative of probable concussion. Other causes for symptoms should also be considered and ruled out.

B. Cognitive Impairment (altered or diminished cognitive function)

1. General cognitive status can be determined by simple sideline cognitive testing
 - a. The Athletic Trainer may utilize SCAT (Sports Concussion Assessment Tool), SAC, sideline ImPACT, or other standard tool for sideline cognitive testing. (Appendix A).
 - b. Coaches should utilize the basic UPMC cognitive testing form (Appendix B).

II. ImPACT neuropsychological testing requirements

1. ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) is a research-based software tool utilized to evaluate recovery after concussion. It was developed at the University of Pittsburgh Medical Center (UPMC). ImPACT evaluates multiple aspects of neurocognitive function, including memory, attention, brain processing speed, reaction time, and post-concussion symptoms.
 - a) Neuropsychological testing is utilized to help determine recovery after concussion.
2. Athletes at Holyoke High School and Dean Tech will take the baseline ImPACT test or equivalent neuropsychological test prior to participation in High School Athletics in their freshmen and junior years. The Athletic Training Staff will coordinate the testing sessions.
3. ImPACT test or equivalent test will be utilized after a concussion to aid in the progression of athletes for a safe return to full participation. The ImPACT test is one component of the return to play management plan and will not be used as the sole criteria for clearance.

III. Other requirements for Athletes and Parents

1. All athletes and parents will be educated on concussion through written and on-line materials annually. Information will include recognizing the signs and symptoms of concussion, the biology and the short-term and long-term consequences of a concussion, second impact syndrome and the HPS Protocol and procedures for Concussions and return to play requirements.
2. All athletes and parents will submit to the Athletic Office either (a) a certificate of completion for the approved on-line educational courses or (b) a signed acknowledgment as to their receipt of approved written educational materials.

3. All athletes will complete and submit to the Athletic Office a Concussion History Form and an ImPact Consent Form. All forms will have athlete and parent signatures.
4. All athletes and parents will notify the Coaches, Athletic Trainers and/or School Nurses of all concussions or symptoms of concussions.
5. The training and education required applies to one school year and must be repeated for every subsequent year. All forms must be completed each school year.

IV. Requirements for Coaches, Certified Athletic Trainers and Volunteers

1. All Coaches, Athletic Trainers, Parent Volunteers, Athletic Directors, and Marching Band Directors must participate in a Sports Head Injury and Concussion Awareness Course. Certificate of completion must be filed with the Athletic Director and Superintendent of Schools.
2. All Athletic Department staff will attend an annual meeting on concussion, including protocol updates and management.
3. All coaches will teach techniques aimed at minimizing sports-related head injury. Coaches will discourage and prohibit student athletes from engaging in any unreasonably dangerous athletic technique that endangers the health or safety of a student, including using a helmet or any other sports equipment as a weapon.
4. Coaches must remove from play all athletes with suspected concussions and report suspected concussions to the Athletic Trainers, Athletic Director and/or School Nurses immediately after injury or the next day.

5. Coaches or the Athletic Trainer will communicate the nature of the injury to the parent in person or by phone immediately after an athlete has been removed from play for a head injury or suspected concussion. Written documentation and concussion information must be provided to the parent by the end of the next business day.

V. Responsibilities of the Athletic Director (AD)

The Athletic Director shall be responsible for:

1. Completing the annual educational training on concussions
2. Ensuring that all coaches, athletic trainers, school nurses, school physicians and volunteers have completed the annual educational requirements and have a current certificate of completion on file in the Athletic Office.
3. Ensure that all students and parents have been educated on concussions through written and on-line materials annually. The AD will ensure that parents have submitted a certificate of completion for the on-line course or a signed acknowledgement as to their receipt of approved written materials.
4. Ensuring, in collaboration with the Athletic Trainers and School Nurses, that all student athletes have completed and submitted a current physical examination and the Department Pre-Participation Form, prior to participation in athletics.
5. Ensuring that all Pre-participation forms are reviewed and the coaches, Athletic Trainers, School Nurses and School Physician are informed of those athletes with a history of concussion.
6. Ensuring that Department Report of Head Injury Forms are provided to the School Nurse, Athletic Trainer and School Physician for follow-up.

7. Discouraging and prohibiting student athletes from engaging in any unreasonably dangerous athletic technique that endangers the health or safety of a student, including using a helmet or any other sports equipment as a weapon.

8. Reporting annual statistics to the Department of Health. Statistics will include at minimum (a) the total number of Department Report of Head Injury Forms received by the school; and (b) the total number of students who incur head injuries and suspected concussions when engaging in athletics.

VI. Responsibilities of the School Nurse

The School Nurse shall be responsible for:

1. Completing the annual educational training on concussions and submitting a certificate of completion to the Athletic Office.

2. Reviewing pre-participation forms with the Athletic Trainer and following up with parents as needed prior to the student's participation in extracurricular athletic activities.

3. Maintaining pre-participation forms and head injury report forms in the student's health record.

4. Participating in the graduated re-entry planning meeting with the Athletic Trainer and Guidance Counselor for students who have been diagnosed with a concussion to discuss any necessary accommodations or modifications with respect to academics, course requirements, homework, testing, scheduling and other aspects of school activities consistent with a graduated re-entry plan for return to full academic and extracurricular activities after a head injury and revising the healthcare plan as needed.

5. Monitoring recuperating students with head injuries and collaborating with teachers to ensure that the graduated re-entry plan for return to full academic and extracurricular activities is being followed.
6. Providing ongoing educational materials on head injury and concussion to teachers, staff and students.

VII. Management and Referral Guidelines for All Staff

A. Guidelines for Management of Sports-Related Concussion

1. Any athlete with a witnessed loss of consciousness (LOC) of any duration should be spine boarded and transported immediately to the nearest emergency department **via Ambulance.**
2. Any athlete who has symptoms of a concussion, and who is not stable (i.e., condition is changing or deteriorating), is to be transported immediately to the nearest emergency department **via Ambulance.**
3. An athlete who exhibits **any** of the following symptoms should be transported immediately to the nearest emergency department, **via Ambulance.**
 - a. deterioration of neurological function
 - b. decreasing level of consciousness
 - c. decrease or irregularity in respirations

- d. decrease or irregularity in pulse
- e. unequal, dilated or unreactive pupils
- f. any signs or symptoms of associated injuries, spine or skull fracture, or bleeding
- g. mental status changes: lethargy, difficulty maintaining arousal, confusion or agitation
- h. seizure activity
- i. cranial nerve deficits

4. An athlete who is symptomatic but stable, may be transported by his or her parents. The parents should be advised to contact the athlete's primary care physician, or seek care at the nearest emergency department, on the day of the injury.

a. **ALWAYS** give the parents the option of emergency transportation, even if you do not feel it is necessary.

VIII. Procedures for the Certified Athletic Trainer (AT)

A. The AT will assess the injury, or provide guidance to the coach if unable to personally tend to the athlete.

- 1. Immediate referral to the athlete's primary care physician or to the hospital will be made when medically appropriate (see Section V).
- 2. The AT will perform serial assessments following recommendations in the NATA Statement, and utilize the SCAT (Sport Concussion Assessment Tool), as recommended by the Prague Statement, or sideline ImPACT, if available.

a. The Athletic Trainer will notify the athlete's parents and give written and verbal home and follow-up care instructions.

B. The AT will notify the school nurse of the injury, prior to the next school day, so that the school RN can initiate appropriate follow-up in school immediately upon the athlete's return to school.

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1. The AT will continue to provide coordinated care with the school RN, for the duration of the injury.
2. The AT will communicate with the athlete's guidance counselor regarding the athlete's neurocognitive and recovery status, if needed.

C. The AT is responsible for administering post-concussion ImPACT or equivalent testing.

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1. The initial post-concussion test should be administered within 48-72 hours post-injury, whenever possible.

a. Repeat post-concussion tests will be given at appropriate intervals, dependent upon clinical presentation.

2. The AT will review the post- concussion data with the athlete and the athlete's parent.

a. Test data will be forwarded to the school medical advisor for review and consultation.

3. The AT will forward testing results to the athlete's treating physician, with parental permission and a signed release of information form.

4. The AT or the athlete's parent may request that a neuropsychological consultant review the test data. The athlete's parents will be responsible for charges associated with the consultation.

5. The AT will monitor the athlete, and keep the School Nurse informed of the individual's symptomatology and neurocognitive status, for the purposes of developing or modifying an appropriate health care plan for the student-athlete.

6. The AT is responsible for monitoring recovery & coordinating the appropriate return to play activity progression.

7. The AT will maintain appropriate documentation regarding assessment and management of the injury.

IV. Guidelines and Procedures for Coaches

A. Recognize concussion

1. All coaches should be familiar with the signs and symptoms of concussion that are described in Section I.
2. Very basic cognitive testing should be performed to determine cognitive deficits.

B. Remove from activity

1. If a coach suspects an athlete has sustained a concussion, the athlete should be removed from activity until evaluated medically.
 - a. **Any athlete, who exhibits signs or symptoms of a concussion should be removed immediately, assessed and should not be allowed to return to activity that day.**

C. Refer the athlete for medical evaluation

- 1. Coaches should report all head injuries to the HHS/DEAN TECH Certified Athletic Trainer (AT) for medical assessment and management, and for coordination of home instructions and follow-up care.

- - 2. Coaches should seek assistance from host site AT if at an away contest.
 - - 3. The AT will be responsible for contacting the athlete's parents and providing follow-up instructions.
 - - 4. If the HHS/DEAN TECH AT is unavailable, or the athlete is injured at an away event, the coach is responsible for notifying the athlete's parents of the injury.
 - a. Contact the parents to inform them of the injury and make arrangements for them to pick up the athlete at school.
 - b. Contact the AT at the above number, with the athlete's name and home phone, so that follow-up can be initiated.
 - c. Remind athlete to report directly to the school nurse before school starts, on the day he or she returns to school after the injury.
 - - 5. In the event that an athlete's parents cannot be reached, and the athlete is able to be sent home (rather than directly to MD):

- - 1. The Coach or AT should insure that the athlete will be with a responsible individual, who is capable of monitoring the athlete and understanding the home care instructions, before allowing the athlete to go home.
 - 2. The Coach or AT should continue efforts to reach the parent.
 - 3. If there is any question about the status of the athlete, or the athlete is not able to be monitored appropriately, the athlete should be referred to the emergency department for evaluation. A coach should accompany the athlete and remain with the athlete until the parents arrive.
 - 4. Athletes with suspected head injuries should not be permitted to drive home.

X. RETURN TO PLAY (RTP) PROCEDURES AFTER CONCUSSION

- A. Returning to participation on the same day of injury is **NOT ALLOWED**.

1.

1. As previously discussed in this document, an athlete who exhibits any signs or symptoms of concussion, or has abnormal cognitive testing, should not be permitted to return to play on the same day of injury. Any athlete who denies symptoms but has abnormal sideline cognitive testing should be held out of activity.

2. "When in doubt, hold them out!"

B. Return to play after concussion

1.

1. The athlete must meet all of the following criteria in order to progress to activity:

a. Athlete has rested from activity for a minimum of five (5) days **AND**:

b. Athlete is asymptomatic at rest and exertion (including mental exertion in school) **AND**:

c. Athlete is within normal range of baseline on post-concussion ImPACT or equivalent testing **AND**:

d. Has submitted a Department Post Sports-Related Medical Clearance and Authorization Form completed by their Primary Care Physician or Head Injury Specialist (athlete must be cleared for progression to activity by a physician other than an Emergency Room physician).

2. Once the above criteria are met, the athlete will be progressed back to full activity following a stepwise process, (as recommended by both the Prague and NATA Statements), under the supervision of the AT.

3. Progression is individualized and will be determined on a case by case basis. Factors that may affect the rate of progression include: previous history of concussion, duration and type of symptoms, age of the athlete and sport/activity in which the athlete participates. An athlete with a prior history of concussion, one who has had an extended duration of symptoms, or one who is participating in a collision or contact sport should be progressed more slowly.

4. Stepwise progression as described in the Prague Statement:

- a. No activity – do not progress until asymptomatic
- b. Light aerobic exercise – walking, stationary bike
- c. Sport-specific training (e.g., skating in hockey, running in soccer)
- d. Non-contact training drills
- e. Full-contact training after medical clearance
- f. Game play

If the athlete experiences post-concussion symptoms during any phase, the athlete should drop back to the previous asymptomatic level and resume the progression after 24 hours.

5. The AT and the athlete will discuss appropriate activities for the day. The athlete will be given verbal and written instructions regarding permitted activities. The AT and athlete will each sign these instructions. One copy of this is for the athlete to give to the coach and one will be maintained by the AT.

6. The athlete should see the AT daily for re-assessment and instructions until he or she has progressed to unrestricted activity and been given a written report to that effect from the AT.

7. Any athlete who sustains a second concussion in the same season must be evaluated and cleared by a neurologist, neuropsychologist or equivalent specialist.

IX. Documentation of Head Injury and Concussion History

A. At or before the start of each sport or band season, all students shall complete and submit to the Athletic Trainer the following forms:

1. Pre-participation medical history form
2. Concussion history form
3. Emergency Information and Consent to participate form
4. ImPACT consent form
5. Certificate of completion or documentation of their receipt of concussion

educational materials

B. All completed forms will be reviewed and kept on file in the Athletic Training Office.

C. All forms shall be distributed to the School Physician, School Nurse, Athletic Trainers, and coaches for all athletes with a history of concussion.

D. The Department Report of Head Injury during Sports Season Form must be completed (a) by the coach, Athletic Trainer or band director, if the injury or suspected concussion occurs during a game or practice or (b) by a parent if the injury occurs outside of those settings, and forwarded to the coach, band director or Athletic Trainer. The Athletic Director shall ensure that these forms are reviewed and provided to Athletic Trainer, School Nurse and School Physician.

E. The school, consistent with any applicable state and federal law, shall maintain the following records for 3 years or at a minimum until the student graduates:

1. Verifications of completion of annual training and receipt of materials
2. Department pre-participation forms
3. Department report of head injury forms
4. Department medical clearance and authorization forms
5. Graduated re-entry plans for return to full academic and extracurricular activities

F. The school shall make these records available to the Department and the Department of Elementary and Secondary Education, upon request or in connection with any inspection or program review.

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