Protocol and Procedures for Management of Sports-Related Concussion

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. Wallingford-Swarthmore School District has 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.

Wallingford-Swarthmore School District seeks to provide a safe return to activity for all athletes after injury, particularly after a concussion. In order to effectively and consistently manage these injuries, procedures have been developed to aid in insuring that concussed athletes are identified, treated and referred appropriately, receive appropriate follow-up medical 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).

This protocol will be reviewed on a yearly basis, by the SHHS and SHMS Athletic Departments, in consultation with our school nurse, athletic trainer, team physician, counseling department, and administration. Any changes or modifications will be reviewed and given to athletic department staff and appropriate school personnel in writing. All athletic department staff, coaches and faculty will attend a yearly 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 assignment, plays, 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 the hit
   - Loss of consciousness (any duration)

2. Symptoms (reported by athlete):
   - Headache
   - 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.

B. Cognitive impairment (altered or diminished cognitive function)

1. General cognitive status can be determined by simple sideline cognitive testing.
   a. AT may utilize SCAT (Sports Concussion Assessment Tool), SAC, sideline ImPACT, or other standard tool for sideline cognitive testing.
   b. Coaches should utilize the basic UPMC cognitive testing form.
II. Management and Referral Guidelines for All Staff

A. Suggested 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 nearest emergency department via emergency vehicle.

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 emergency vehicle.

3. An athlete who exhibits any of the following symptoms should be transported immediately to the nearest emergency department via emergency vehicle.
   
   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 a licensed physician trained in the evaluation and management of concussions or seek care at the nearest emergency department on the day of the injury.
   
   a. ALWAYS give parents the option of emergency transportation even if you do not feel it is necessary

III. Procedures for the Certified Athletic Trainer (AT)

A. The AT will assess the injury, or provide guidance to the coach if unable to personally attend 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 II).
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 refer them to the team physician or concussion center along with the WSSD concussion checklist.

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.

   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 physician regarding the athlete’s neurocognitive and recovery status for athletic activity, as needed.

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

   1. The initial post-concussion test will 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 post-concussion test data with the athlete and the athlete’s parent, the coach, and concussion center as appropriate.

      a. ImPACT data will be forwarded to the team physician for review/consultation.

D. The AT will forward testing results to the athlete’s treating physician, with parental permission and a signed release of information form completed at the start of each season.

E. 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.

F. 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.

G. The AT is responsible for monitoring recovery & coordinating the appropriate return to play activity progression.
H. The AT will maintain appropriate documentation regarding assessment and management of the injury.

IV. Guidelines and procedures for Coaches:

RECOGNIZE, REMOVE, REFER

A. **Recognize** concussion

1. All coaches should become 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.
   a. See appendix E.

B. **Remove** from activity

1. If a coach suspects the 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 SHHS Certified Athletic Trainer (AT), as soon as possible, for medical assessment and management, and for coordination of home instructions and follow-up care.
   a. The AT can be reached at **610-310-7690**.
   b. The AT will be responsible for contacting the athlete’s parents and providing follow-up instructions.

2. Coaches should seek assistance from the host site AT if at an away contest.

3. If the SHHS 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 the athlete up at the location where the injury occurred. If parents refuse or are unable to report to the site, the AT and coach may determine whether the student returns to school by bus or emergency staff are called to the site for assessment.
b. Contact the AT at the above number, with the athlete’s name and home phone number so that follow-up can be initiated.
c. Contact the school nurse, who will coordinate with school personnel.

4. In the event that an athlete’s parents cannot be reached, and the athlete is able to be sent home (rather than directly to a doctor):
   a. The Coach or AT should insure that the athlete will be with a responsible adult, who is capable of monitoring the athlete and understanding the home care instructions before allowing the athlete to go home.
   b. The Coach or AT should continue efforts to reach the parent.
   c. If there is any question about the status of the athlete, or if the athlete is not able to be monitored appropriately, the athlete should be referred to the emergency department for evaluation. A coach or AT should accompany the athlete and remain with the athlete until the parents arrive.
   d. Athletes with suspected head injuries should not be permitted to drive home.

V. FOLLOW-UP CARE OF THE ATHLETE DURING THE SCHOOL DAY

A. Responsibilities of the school nurse after notification of student’s concussion

1. The athlete will be instructed to report to the school nurse upon his or her return to school. At that point, the school nurse will:

   a. Re-evaluate the athlete utilizing a graded symptom checklist.
   b. Provide an individualized health care plan based on both the athlete’s current condition, and initial injury information provided by the AT or parent.

2. Notify the student’s guidance counselor and teachers of the injury immediately via the individualized health care plan form.

3. Notify the student’s P.E. teacher immediately that the athlete is restricted from all physical activity until further notice.

4. If the school RN receives notification of a student-athlete who has sustained a concussion from someone other than the AT (athlete’s parent, athlete, physician note), the AT should be notified as soon as possible so that an appointment for ImPACT testing can be made.

5. Coordinate with Athletic Trainer/Physician for weekly evaluation.

6. Coordinate support services with all parties until the student has returned to full health.
B. Responsibilities of the student’s guidance counselor

1. Monitor the student closely and recommend appropriate academic accommodations for students who are exhibiting symptoms of post-concussion syndrome.
2. Communicate with school health office on a regular basis, to provide the most effective care for the student.

VI. ACADEMIC ACCOMMODATIONS AT SCHOOL

A. Upon notification of a concussion, the school nurse will provide the parents of the concussed student with a checklist (found on page 10) for completion by the family physician or team doctor.
B. Upon receipt of the completed checklist, the nurse will provide the checklist to the guidance counselor and classroom teachers.
C. The nurse will continue to communicate with the guidance counselor, athletic trainer, teachers, student, and parents until the student is fully cleared for return to both physical and academic activity at 100% participation levels.
D. If symptoms persist beyond eight days, a referral may be made to the Principal for consideration of homebound instruction and/or 504 accommodations.

VII. RETURN TO PLAY (RTP) PROCEDURES AFTER CONCUSSION

A. Returning to participate on the same day of injury

1. As previously discussed in this document, an athlete who exhibits signs or symptoms of concussion, or has abnormal cognitive testing, should not be permitted to return to play on the day of the 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. The athlete must meet all of the following criteria in order to progress to activity:
   a. Asymptomatic at rest and with exertion (including mental exertion in school)
      AND
   b. Test within normal range of baseline on post-concussion ImPACT testing

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.

Neuropsychological testing is utilized to help determine recovery after concussion.

All athletes at Strath Haven High School and Middle School are required to take a baseline ImPACT test prior to participation in sports at SHHS each season. All athletes will view a video presentation entitled: “Heads Up: Concussion in High School Sports,” prior to taking the baseline test.

AND

c. Have written clearance from a licensed physician trained in the evaluation and management of concussions or 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 and the school nurse.

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 to step 2 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

Note: 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 athlete will review the WSSD Concussion Checklist. The AT and athlete will each sign these instructions. One copy of this form is for the athlete to give to the coach, one to the school nurse, and one will be maintained by the AT.
6. The athlete should see the AT and the school nurse weekly for reassessment and instructions until he or she has progressed to unrestricted activity, as documented in the WSSD Concussion Checklist by the treating physician.

3 McCrory P, et al
4 Guskiewicz KM, et al
CONCUSSION CHECKLIST

This checklist is to be completed by the injured student’s family physician or the team doctor and submitted to the school nurse as soon as possible by the parent. This checklist may be updated and resubmitted as appropriate by the designated medical professional selected by the parent.

Name of Student ____________________________________________
Grade ____________________________

Date of Injury ____________
Diagnosis __________________________________________________

Physical Restrictions (check appropriate level of exercise)

____ No practice or physical activity.
____ Light, non-contact exercise, including walking, riding an exercise bike, or other cardiovascular exercise, with the exception of weight lifting.
____ Running in the gym or on the field without use of helmet or other equipment.
____ Non-contact training drills in full equipment. Light weight training.
____ Full contact practice or training.
____ Participation in competition.

Notes: ___________________________________________________________________________________

Anticipated duration or scheduled reevaluation ____________________________________________

Academic Restrictions (check appropriate level of participation)

____ Complete cognitive rest. Absence from school required at this time.
____ Classroom attendance for partial day with modifications to work completion.
____ Classroom attendance for full day with modifications to work completion.
____ Classroom attendance for full day with no limitations.

Modifications (check all that apply)

____ Extended time for assignment completion ______ Copies of classroom/lecture notes
____ Oral assessments ______ Reduction of assignments
____ Quiet environment for testing ______ Modified tests or quizzes
____ Provide written directions for work ______ No tests or quizzes
____ No computer work ______ No reading

Notes: ___________________________________________________________________________________

Anticipated duration or scheduled reevaluation ____________________________________________

Physician Signature ____________________________________________ Date __________________________