

Paramus Athletics

Paramus High School Athletic Department Protocol and Procedures for Management of Sports - Related Concussion

Medical management of sports-related concussions is evolving. In recent years, there has been significant research into sports-related concussions in high school athletes. As a result, Paramus High School has established this protocol to provide education about concussion for our coaching 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.

Paramus High School seeks to provide a safe return to activity protocol 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, referred and receive appropriate follow-up medical care. Follow-up care includes academic assistance, if necessary, based on results of neurocognitive testing and/or physician recommendation.

In addition to recent research, two (3) primary documents were consulted in developing this protocol. The “*Summary and Agreement Statement of the 2nd International Conference on Concussion in Sport, Prague 2004*”¹ (referred to in this document as the Prague Statement), the “*National Athletic Trainers’ Association Position Statement: Management of Sport-Related Concussion*”² (referred to in this document as the NATA Statement), and Consensus Statement on Concussion in Sport: the 3rd International Conference on Concussion in Sport held in Zurich, November 2008.

This protocol will be reviewed on a yearly basis, by the Paramus High School Certified Athletic Trainer, School Nurse and the Paramus Public Schools Chief Medical Officer. Any changes or modifications will be reviewed and given to athletic department staff and appropriate school personnel in writing.

All athletic department staff and coaches will attend a yearly in-service meeting in which procedures for managing sports-related concussion are discussed.

Contents:

- I. Recognition of concussion
- II. ImPACT neuropsychological testing requirements
- III. Management and referral guidelines for all staff
- IV. Procedures for the Certified Athletic Trainer (ATC)
- V. Guidelines and procedures for coaches
- VI. Follow-up care during the school day
- VII. Return to play procedures

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

I. Recognition of concussion

A. Common signs and symptoms of sports-related concussion

<u>Signs (observed by others):</u>	<u>Symptoms (reported by athlete):</u>
<ul style="list-style-type: none">• 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 (contact or incident)• Forgets events after the hit (contact or incident)• Loss of consciousness (any duration)• Abnormal behavior or movements after collision or blow to head/neck	<ul style="list-style-type: none">• Headache• Fatigue• Nausea or vomiting• Double vision, blurry vision• Sensitive to light or noise• Feels sluggish• Feels “foggy”• Problems concentrating• Problems remembering

These signs and symptoms are indicative of probable concussion. Other causes for symptoms will also be considered.

B. Cognitive impairment (altered or diminished cognitive function)

General cognitive status can be determined by simple sideline cognitive testing.

- a. ATC may utilize SCAT (Sports Concussion Assessment Tool)³, SAC, sideline ImPACT, or other standard tool for sideline cognitive testing.
- b. Coaches will utilize the basic UPMC or CDC cognitive testing form.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

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. All contact / collision sport athletes at Paramus High School are required to take a baseline ImPACT test prior to participation in sports at PHS (usually freshman year).
 - a. All athletes will view a video presentation entitled: “Heads Up: Concussion in High School Sports”, prior to taking the baseline test. Alternate video may also be shown depending on current research.
3. Athletes in collision and contact sports (as defined by the American Academy of Pediatrics classifications) are required to take a “new” baseline test prior to participation every year. Baseline tests are valid for one years.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

III. Management and Referral Guidelines for All Staff

A. Suggested Guidelines for Management of Sports-Related Concussion⁴

1. Any athlete with a witnessed loss of consciousness (LOC) of any duration will 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 will 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
 - j. persistent inability to walk or coordinate movements
4. Athletes will be transported to emergency rooms under the following circumstances:
 - a) An athlete who is diagnosed or evaluated as exhibiting items in [3] above are considered to be in serious condition. As such, the athlete **MAY NOT** be transported by his or her parents to the emergency room service point, but rather by emergency services personnel to protect the athlete. The parents will be advised to contact the athlete's primary care physician, and meet the athlete at the nearest emergency department, on the day of the injury.
 - b) An athlete who is diagnosed or evaluated as having a concussion, but not falling into any category in [3] above may be transported only by the parent(s) of the athlete at their discretion.
 - c) Parents shall always have the right to determine which hospital or emergency facility is to be selected for patient delivery.
 - d) **ALWAYS** give parents the option of emergency transportation, even if you do not feel it is necessary.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

IV. Procedures for the Certified Athletic Trainer (ATC)

- A. The PHS ATC 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 III.3).
 - 2. The PHS ATC 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 PHS ATC will notify the athlete's parents and give written and verbal home and follow-up care instructions.

- B. The PHS ATC will notify the school nurse of the injury, prior to the next school day, so that the School Nurse can initiate appropriate follow-up in school immediately upon the athlete's return to school.
 - 1. The PHS ATC will continue to provide coordinated care with the School Nurse, for the duration of the injury.
 - 2. The PHS ATC will communicate with the athlete's guidance counselor regarding the athlete's neurocognitive and recovery status, if needed.

- C. The PHS ATC 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 PHS ATC will review post-concussion test data with the athlete and the athlete's parent.
 - 3. The PHS ATC will forward testing results to the athlete's treating physician, with parental permission and a signed release of information form (included in consent form).
 - 4. The PHS ATC or the athlete's parent may request that a neurologist or appropriate specialist review the test data.
 - 5. The PHS ATC 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.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

6. The PHS ATC is responsible for monitoring recovery & coordinating the appropriate return to play activity progression.
7. The PHS ATC will maintain appropriate documentation regarding assessment and management of the injury.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

V. Guidelines and procedures for Coaches:

RECOGNIZE, REMOVE, REFER

A. **RECOGNIZE** concussion

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

B. **REMOVE** from activity

1. If a coach suspects the athlete has sustained a concussion, the athlete **will** be removed from activity until evaluated medically.
 - a. **Any athlete who exhibits signs or symptoms of a concussion will be removed immediately, assessed, and WILL NOT be allowed to return to activity (play or practice) the same day until medically cleared. The athlete WILL NEVER be allowed to return to play on the day of a suspected concussion.**

C. **REFER** the athlete for medical evaluation

1. Immediate referral to the athlete's primary care physician or to the hospital will be made when medically appropriate (see section III.3).
2. Coaches will report all head injuries to the PHS Certified Athletic Trainer (ATC), as soon as possible, for medical assessment and management, and for coordination of home instructions and follow-up care.
 - a. The PHS ATC can be reached at: **201-759-0632.**
 - b. The PHS ATC will be responsible for contacting the athlete's parents and providing follow-up instructions.
3. Coaches will seek assistance from the host site ATC (if available) if at an away contest.
4. If the PHS ATC 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 parent(s) to inform them of the injury and make arrangements for them to pick the athlete up at school or to the medical treatment facility.
 - b. Contact the PHS ATC at the above number, with the athlete's name and home phone number, so that follow-up can be initiated.
 - c. Remind the athlete to report directly to the school nurse before school starts, on the day he or she returns to school after the injury.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

5. In the event that an athlete's parent(s) cannot be reached, and the athlete is able to be sent home (rather than directly to MD):
 - a. The Coach or PHS ATC will 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.
 - b. The Coach or PHS ATC will continue efforts to reach the parent(s).
 - 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 will be referred to the emergency department for evaluation. A coach or PHS ATC will accompany the athlete and remain with the athlete until the parents arrive.
 - d. Athletes with suspected head injuries **will not** be permitted to drive home.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

1. VI. 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 provided by ATC
2. If, necessary, notify the student's guidance counselor and teachers of the injury.
3. Notify the student's P.E. teacher immediately stating that the athlete is restricted from all physical activity until further notice.
4. If the School Nurse receives notification of a student-athlete who has sustained a concussion from someone other than the PHS ATC (athlete's parent, athlete, physician note), the PHS ATC will be notified as soon as possible, so that an appointment for ImPACT testing can be made.
5. Monitor the athlete on a regular basis during the school day.

B. Responsibilities of the student's Guidance Counselor

1. If necessary, with recommendations from MD or PHS ATC, recommend appropriate academic accommodations for students who are exhibiting symptoms of post-concussion syndrome.
2. Communicate with School Health Office and PHS ATC on a regular basis, to provide the most effective care for the student.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

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, **WILL NEVER** be permitted to return to play on the day of the injury. Any athlete who denies symptoms but has abnormal sideline cognitive testing will 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. Within normal range of baseline on post-concussion ImPACT testing AND:
 - c. Have written clearance from primary care physician 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 progression, (as recommended by both the Prague and NATA Statements), under the supervision of the PHS ATC.
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 will be progressed more slowly.
4. Stepwise progression as described in the Prague Statement:
 - a) No activity – do not progress to step b 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 will drop back to the previous asymptomatic level and resume the progression after 24 hours.

**Paramus High School Athletic Department Protocol and Procedures for Management
of Sports - Related Concussion**

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

6. The athlete will see the PHS ATC daily for re-assessment and instructions until he/she has progressed to unrestricted activity, and been given a written report to that effect, from the PHS ATC.

¹ McCrory P, et al. Summary and Agreement Statement of the 2nd International Conference on Concussion in Sport, Prague 2004. *Clin J Sports Med.* 2005; 15(2):48-55.

² Guskiewicz KM, et al. National Athletic Trainers' Association Position Statement: Management of Sport-Related Concussion. *J Athl Train.* 2004;39(3):280-297.

³ McCrory P, et al

⁴ Guskiewicz KM, et al

⁵ McCrory P, et al Consensus Statement on Concussion in Sport: The 3rd International Conference on Concussion in Sport, Zurich 2008.