

## **St. Mark's School of Texas**

### Concussion Management Plan

The medical management of concussions is an evolving field. Recently, much research has focused on sports-related concussions among youth athletes. St. Mark's School of Texas has established this document to provide education about concussions for athletic department staff and other school personnel. This document outlines procedures for staff to follow in managing head injuries. It also outlines the school plan as it pertains to academic modifications and an athlete's/student's ability to play after a concussion.

St. Mark's School of Texas seeks to return concussed athletes/students to academics and athletics in a safe and methodical manner. In order to effectively and consistently manage head injuries, a set of procedures has been developed. We will strive to follow best accepted practices with athletes/students who experience concussions, identifying, treating, and referring them for appropriate follow-up medical care as it pertains to academic modifications and a return to athletic participation.

In addition to recent research, two (2) primary documents were consulted in developing this plan: 1. "Summary and Agreement Statement of the 3<sup>rd</sup> International Conference on Concussion in Sport, Zurich 2008"<sup>1</sup> (referred to in this document as the *Zurich Statement*) and 2. "National Athletic Trainers' Association Position Statement: Management of Sport-Related Concussion"<sup>2</sup> (referred to in this document as the *NATA Statement*).

In the event that a head injury is suspected during an athletic practice or contest, the athletic training staff will evaluate the athlete/student using the sideline concussion card. If an athlete/student is evaluated as exhibiting any head injury symptoms, he will not be allowed to return to play that day. Signs and symptoms that could disqualify a student from returning to play include, but are not limited to: headache, fatigue, nausea or vomiting, double vision, blurry vision, sensitivity to light or noise, sluggishness, problems concentrating, problems with memory, appearing dazed or stunned, confusion, uncertainty about game score or opponent, altered coordination, balance problems, personality change, slow response to questions, and loss of consciousness. This applies to students who suffer a concussion under any other circumstance as well.

Evaluation showing symptoms on the following list will indicate immediate referral to an emergency department: severe headache, headache that increases in intensity, vomiting, unequal pupil size, blurry or double vision, slurred speech, changes in level of consciousness, seizure activity and decreased or irregular pulse or respiration. If an emergency department visit is not warranted, the athlete/student will be sent home in the care of his parent, guardian or other responsible adult. A "Home Instruction Sheet" will be provided, outlining treatment guidelines and recommendations.

Approximately 48-72 hours after a suspected injury, the athlete/student will be required to take the post-injury ImpACT test administered by either the treating physician if there is a treating physician in the particular case, or the School Nurse if there is no treating physician or the treating physician authorizes the School Nurse to administer the test. Athletes/students suffering a concussion are encouraged to visit an appropriate physician\* to receive proper concussion management. All athletes/students must have a physician's written clearance prior to returning to activity and must follow a stepwise approach in returning to play.

Athletes/students who exhibit concussion symptoms must limit activity, both mental and physical, to allow the healing process to take place. This may preclude physical activity and require a temporary decrease in academic workload. Because concussions can present in a variety of ways, modification in the athlete's/student's academic program will be planned for by the physician, School Nurse, and appropriate Head of School.

When the athlete's/student's post-injury ImpACT test results return to normal levels with reference to his original baseline ImpACT test and, accordingly, the treating physician has determined that it is safe for him to return to play, a 5 - 7 day physical stress period will occur. During this period, daily monitoring by the Athletic Trainer (AT) of physical symptoms will occur through the administration of the graded symptom check list. Abnormal results from this check list will be reported to the physician. If the athlete/student continues to be asymptomatic during the physical stress period, the athlete/student will be returned to full participation.

This plan will be reviewed annually by the St. Mark's medical staff. Any changes or modifications will be reviewed and communicated to athletic department staff and appropriate school personnel in writing.

\*For the purposes of head injury Return to Play protocol, an appropriate physician evaluation is completed by a practicing MD, DO or PhD within the following specialties: family medicine, internal medicine, pediatrics, sports medicine, neurology, neurosurgery or neuropsychology. Family members and friends of the family who are medical providers may not serve as an appropriate physician. The physician completing the evaluation should document name, degree, specialty, practice name (if applicable), address and telephone number.

## Plan and Processes

### I. Recognition of Concussion

#### A. Common signs and symptoms of sports-related concussion

##### 1. Signs:

- Athlete appears dazed or stunned
- Confusion (about assignments, 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: (as described in the *Zurich Statement*)

- Headache
- Fatigue
- Nausea or vomiting
- Double vision
- Sensitivity to light or noise
- Feels sluggish
- Problems concentrating
- Problems remembering

These signs and symptoms are indicative of a 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 sideline cognitive testing. Athletic Trainer (AT) will utilize the sideline concussion card.

### II. **ImPACT neuropsychological testing requirements**

- A. 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 functioning, including memory, attention, brain processing speed, reaction time, and post-concussion symptoms.
- B. All athletes/students in grades 7 – 12 at St. Mark's are required to take a baseline ImPACT test every other year.

- C. Baseline ImPACT tests are valid for two years only. After two years, athletes/ students must retake the baseline test. Baseline ImPACT tests will be reviewed by the AT and the Director of Counseling to check their validity. Athletes/ students may be required to take more than one baseline test.

### **III. Management and Referral Guidelines for Staff**

- A. Protocols for Management of Sports-Related Concussion
  - 1. Any athlete/student with a witnessed loss of consciousness (LOC) of any duration should be placed on a spine board and transported immediately to the nearest emergency department via emergency vehicle.
  - 2. An athlete/student who exhibits any of the following symptoms should be transported immediately to the nearest emergency department:
    - a. deterioration of neurological function
    - b. decreasing level of consciousness
    - c. decrease or irregularity in respiration
    - d. decrease or irregularity in pulse
    - e. unequal, dilated, or unreactive pupils
    - f. vomiting
    - g. any signs or symptoms of associated injuries, spine or skull fracture, or bleeding
    - h. mental status changes: lethargy, difficulty maintaining arousal, confusion or agitation
    - i. seizure activity
    - j. cranial nerve deficits
  - 3. If the school's medical staff is not in attendance at a game or practice, the head coach will notify both the School Nurse and Athletic Trainer of the suspected injury promptly.

### **IV. Procedures for the Certified Athletic Trainer (AT)**

- A. The AT will assess the injury, or provide guidance to the coach if he is unable to attend to the athlete at the time of injury.
  - 1. Immediate referral by AT to the athlete's/student's primary care physician, ImPACT physician, or to the hospital will be made when medically appropriate.
  - 2. The AT will perform serial (every 5 minutes) assessments following recommendations in the *NATA Statement*, and utilizing the sideline card.
    - a. The AT will notify the athlete's/student's parents/guardian and give written and verbal home and follow-up care instructions.
    - b. Follow-up instructions may include: relief from the night's homework and absence from school the next day.

- B. The AT will notify the Athletic Director of a suspected head injury.
- C. The AT will notify the School Nurse of the injury as soon as possible so that the School Nurse can initiate appropriate follow-up care.

**V. Procedures for the School Nurse**

- A. Responsibilities of the School Nurse after notification of an athlete's/student's concussion:
  - 1. The athlete/student will be instructed to report to the School Nurse upon his return to school. At that point, the School Nurse will:
    - a. Coordinate the administration of the post-concussion ImPACT test
      - i. The initial post-concussion test will be administered within 48-72 hours post injury, or whenever possible.
      - ii. Follow-up post-concussion tests will be given at appropriate intervals
    - b. Communicate the physician's findings to the AT and manage the physician's instructions
    - c. Notify the appropriate Head of School of the injury to manage academic modifications as prescribed by the physician
    - d. Notify the school administration
      - i. Headmaster
      - ii. Head of Upper School or Middle School
      - iii. Assistant Head of Upper School or Middle School
      - iv. Director of Counseling
  - 2. If the School Nurse receives notification from someone other than the AT (e.g., the student's parent, the student himself, physician) that an athlete/student has sustained a concussion, the AT and the school administration should be notified promptly.
  - 3. The athlete/student will be instructed to seek medical care from the School Nurse if his symptoms return during the school day.

**VI. Academic Modification Guidelines**

- A. Academic modifications will take place in two forms. The objective of this plan is to allow for adequate healing time prior to a student's return to mental activity. This will encourage healing and result in less school time missed.
  - 1. Following a suspected head injury, the School Nurse can implement modifications to homework and school attendance as long as symptoms are present.

2. Under recommendations by the appropriate physician, the following may be prescribed:

- a. Full rest
- b. Home school
- c. Half school days
- d. Extended time on tests, quizzes, and other assignments
- e. Books on tape
- f. Full return to school

B. Academic modifications will be communicated by the School Nurse to an athlete's/student's teachers, his adviser, the AT, the appropriate Head of School, and the Director of Counseling.

C. If, after one week the athlete/student is still symptomatic or behind in his workload, the appropriate Head of School will convene a meeting of the athlete's/student's teachers, his adviser, and the Director of Counseling to discuss how to proceed.

## **VII. Return to Play (RTP)**

A. Returning to participate on the same day of injury

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

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

B. Return to play after concussion

1. The appropriate physician's clearance "without restriction" is not an absolute determination for the athlete/student to return to drills, practice, and competition. It is only a clearance for the athlete/student to begin re-entry. The final determination will be made by the School Nurse and the AT.

2. The athlete/student must meet the following criteria in order to progress to activity:

- a. Be asymptomatic at rest with exertion (including mental exertion in school), AND:
- b. Be within the normal range of his baseline on the post-concussion ImpACT testing, AND:
- c. Have written clearance from an appropriate physician.

3. Once the above-stated criteria are met, the athlete/student will be allowed to return to participation following a stepwise process (as recommended by both the *Zurich and NATA Statements*) under the supervision of the AT. 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, sport/activity in which the athlete/student participates, and migraines.
4. Stepwise progression as described by the *Zurich 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
  - f. Game play

Note: If the athlete/student experiences post-concussion symptoms during any phase, he may be asked or required to drop back to the previous asymptomatic level and resume the progression after 24 hours.

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<sup>1</sup>McCrary p, et al. Summary and Agreement Statement of the 3rd International Conference on Concussion in Sport, Zurich, 2008. *Clin J sports Med.* 2009 May;19(3):185-200.

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





St. Mark's School of Texas  
Concussion Home Instructions

Athlete \_\_\_\_\_ Date of injury \_\_\_\_\_ Sport \_\_\_\_\_

Home phone \_\_\_\_\_ Parent/guardian name \_\_\_\_\_

Your son has sustained a head injury while participating in \_\_\_\_\_. In some instances, the signs of a concussion do not become obvious until several hours or even days after the injury. Please be especially observant for the following signs and symptoms.

1. Headache (especially one that increases in intensity\*)
2. Nausea and vomiting\*
3. Difference in pupil size from right to left eye, dilated pupils\*
4. Mental confusion/behavior changes
5. Dizziness
6. Memory loss
7. Ringing in the ears
8. Changes in gait or balance
9. Blurry or double vision\*
10. Slurred speech\*
11. Noticeable changes in the level of consciousness (difficulty awakening, or losing consciousness suddenly)\*
12. Seizure activity\*
13. Decreased or irregular pulse OR respiration\*

**\* Seek medical attention at the nearest emergency department.**

The best guideline is to note symptoms that worsen, and behaviors that seem to represent a change in your son. If you have any question or concern at all about the symptoms you are observing, contact your family physician for instructions, or seek medical attention at the closest emergency department. To help treat the current concussion symptoms:

**It is OK to:**

- Use acetaminophen (Tylenol) for headaches
- Use ice pack on head & neck as needed for comfort
- Eat a light diet
- Go to sleep
- Rest (no strenuous activity or sports)

**There is NO need to:**

- Check eyes with a flashlight
- Wake up every hour
- Test reflexes
- Stay in bed

**Do NOT:**

- Drink alcohol
- Drive while symptomatic
- Exercise or lift weights
- Take ibuprofen, aspirin, naproxen or other non-steroidal anti-inflammatory medications

Please remind your child to check in with the School Nurse prior to going to class, on the first day he returns to school. Your child should also follow up with the Certified Athletic Trainer after school.

Recommendations provided to: \_\_\_\_\_ Phone #: \_\_\_\_\_

Recommendations provided by: \_\_\_\_\_ Phone #: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

