

# **MaineHealth Sports Performance Center Protocol & Procedures for the Management of Sports-Related Concussion**

The following protocol outlines the procedures that will be taken by the MaineHealth Sports Performance Center (SPC) Sports Medicine Staff in the event of a sport's related concussion. This protocol will be reviewed and updated as new best-practices emerge. The following will provide guidance and structure to insure the safe participation in athletics for all student-athletes.

The Sports Performance Center has a Sports Medicine Team in place to handle the management of concussions both for athletics and academics.

In addition to recent research, three (3) primary documents, one (1) research paper, and the Team Neurologist were consulted in the development of this protocol. These documents are as follows:

- “National Athletic Trainers’ Association Position Statement: Management of Sports-Related Concussions” (referred to in this document as the NATA Statement)
- “Consensus Statement on Concussion in Sports: the 5th International Conference on Concussion in Sports held in Berlin, October 2016” (referred to in this document as the Berlin Statement)
- “Summary and Agreement Statement of the 2<sup>nd</sup> International Conference on Concussion in Sport, Prague 2004” (referred to in this document as Prague Statement)
- “Multiple Prior Concussions are Associated with Symptoms in High School Athletes” (referred to as Multiple Concussion Research Paper)

Key Points:

- SPC requires all student-athletes and parent/guardian to sign the “Traumatic Brain Injury (TBI)/Concussion Annual Statement and Acknowledgment Form” (Acknowledgment Form) or School Department Concussion Acknowledgment form before their participation in athletics. By signing they acknowledge that:
  - They have read and understand the Acknowledgment Form
  - They will follow all policies and procedures concerning head injuries
  - The Certified Athletic Trainer(AT)/Team Head Coach will coordinate the distribution and signing of the necessary documents
- Coaches will be required to be trained in the recognition of concussions.
  - Each coach will be required to print off confirmation of taking the NFHS Concussion Course and turning it into the Athletic Administrator in accordance with Maine state law.
  - Coaches will encourage student athletes to report any suspected head injuries to the sports medicine team without punishment or consequences, and they accept the responsibility for referring any athlete to the sports medicine team who is suspected of sustaining a concussion
  - Coaches cannot make return to play decisions for an athlete who has sustained a hit to the head or body that results or may results in concussion symptoms
  - Coaches are required to read and understand the protocol and procedures for concussion management
- All staff members involved in the treatment of sports-related concussions, (team physicians, athletic trainers, student athletic trainers, and school nurse) must read and understand the concussion protocol
- The SPC Sports Medicine Team will review this Concussion Policy annually and update it as needed.

Concussion Protocol:

## 1. Recognition of Concussions

### A. Definition

i. A sports related concussion is a traumatic brain injury induced by biomechanical forces. A concussion may be caused by a direct blow to the head, face, neck, or to the body with an impulsive force transmitted to the head. Disturbance of brain function is related to functional disturbance, rather than structural injury and is typically associated with normal structural neuroimaging. Concussions may or may not result in the loss of consciousness (LOC). A concussion can result in a range of physical, cognitive, emotional, and sleep related signs and symptoms. Signs and symptoms may be immediate or delayed.

## 2. Signs and Symptoms of a Sports-Related Concussion

A. The following signs and symptoms are indicative of a possible concussion. Other causes for symptoms should be considered when evaluating a student-athlete. It is imperative that all medical history is reviewed as well as baseline testing

### **i. Signs (observed by others)**

1. Confusion
2. Appears dazed or stunned
3. Unsure about game, score, opponent etc.
4. Forgets plays
5. Altered coordination (clumsy)
6. Balance trouble

7. Slow response to questions
8. Forgets events prior to trauma
9. Forgets events after trauma
10. Personality changes
11. Loss of consciousness
12. Excessive eye blinking

**ii. Symptoms (reported by student-athlete)**

1. Headache
2. Fatigue (tiredness)
3. Double or blurred vision
4. Sensitivity to light
5. Sensitivity to noise
6. Nausea and/or vomiting
7. Feeling like 'in a fog'
8. Feeling 'sluggish'
9. Difficulty concentrating
10. Difficulty remembering
11. Trouble falling asleep (if reporting day(s) after)
12. Trouble staying asleep (if reporting day(s) after)
13. Mood swings
14. Sadness

15. Irritability

16. Hyperactivity (ADHD like symptoms)

3. Neurocognitive testing

A. SPC, as well as their contracted high schools, utilize neurocognitive testing to determine baseline cognitive function.

i. Prior to the start of any contact or collision practices, all athletes must take a baseline Neurocognitive testing test

1. Repeat Baseline Testing

a. College and above – once

b. High School – every 2 years

c. Middle School and below– annually

2. Each baseline will be reviewed for validity; if invalid that student-athlete will need to retake before he/she can participate in contact or collision practices. If student has documented ADD, ADHD, learning or intellectual disability they do not need to retake baseline.

3. **All student athletes that participate in a contact sport** will not be able to participate in any live play, scrimmages, or games/competitions until their baseline test is completed.

4. The AT will inform all coaches which members of their teams must take the neurocognitive testing once a roster has been submitted.

ii. Testing should be conducted under the supervision of the AT or an appropriately trained Athletic Training Student (ATS) and when able at least one coach to ensure proper behavior during testing.

B. Post Injury Neurocognitive Testing

i. Repeat Testing

- a. 24-72 hours post injury or as requested by treating health care provider
- b. After subjective symptoms have returned to baseline, before student-athlete participates in a contact practice
  - ii. Repeat tests will be given at request of the Team Physician or PCP treating the student-athlete.
  - iii. Repeat tests should not be given more than twice in one week unless specified by treating health care provider.
  - iv. AT will notify the treating health care provider once neurocognitive testing tests are completed

#### 4. Management and Referral Guidelines

- i. When AT is present:
  - 1. All student-athletes suspected of having sustained a head injury will be removed from play for evaluation
  - 2. The AT will use the appropriate sideline tools available to assess orientation, memory, concentration, balance, cranial nerves and other signs and symptoms associated with a sports related concussion
    - a. History, verbal examination, special tests, and if appropriate physical exertion will be used to determine presence and severity of the signs and symptoms of a concussion.
  - 3. Any student-athlete suspected of having sustained a head injury (including opposing teams' student-athletes) will be removed from practice/game and not allowed to return
  - 4. AT will notify Parent/Guardian as soon as possible about the student-athlete's injury
    - a. The parent/guardian will decide if the student-athlete is evaluated by the Team Physician or their own Primary Care Provider (PCP)
  - 5. The AT will document initial evaluation and all subsequent evaluations; all documentation should be provided to the treating health care provider.
    - a. Daily symptom checks

- b. Documentation of graduated return to play protocol
- c. Post-injury neurocognitive testing test results
- 6. AT will coordinate care, and will remain in contact with the treating provider until the student-athlete is fully cleared to return to unrestricted activity
- 7. AT will notify the School Nurse of injury
  - a. School nurse may notify all teachers, guidance counselors, and other personnel involved in the student-athletes academics and school day
  - b. As the student-athlete progresses during his/her injury, the school nurse will be notified in order to update the above mentioned personnel
    - ii. When the Athletic Trainer is NOT present:
      - 1. Any student-athlete with observed LOC of any duration should be transported to the nearest emergency department via emergency services
        - i. Coaches should not allow student-athlete to move their head or neck in case a cervical spine injury has occurred until EMS arrives.
        - ii. Parent/guardian of the student-athlete should be contacted immediately and informed of the situation
        - iii. Refer to the site specific Emergency Action Plans (EAPs) for activation of EMS.
      - 2. Any student-athlete who has symptoms of a concussion, and who is not stable (i.e. their condition changing or deteriorating) is to be transported immediately to the nearest emergency department via emergency vehicle
        - a. Parent/guardian is to be informed immediately
        - b. If parent/guardian is present they are able to transport the student/athlete to the emergency department on their own at their discretion
        - c. Any student-athlete that exhibits any of the following symptoms is to be immediately transported to the nearest emergency department

- i. Decreasing level of consciousness
    - ii. Deterioration of neurological function
    - iii. Decrease or irregularity in respiration
    - iv. Decrease or irregularity in pulse
    - v. Unequal, dilated, or unresponsive pupils
    - vi. Changes in mental status
    - vii. Seizure
    - viii. Vomiting
3. Any student-athlete who is stable can be sent home with a parent/guardian
  - a. Parent/guardian must be informed by the coaching staff of the injury and what has been observed
    - i. Coaches are to inform the student-athlete and parent/guardian to follow up with the AT as soon as possible
  - b. Parent/guardian can be given a Home Care Instruction for Athletic Head Injuries sheet
  - c. Parent/guardian can be advised to have the student-athlete seek care with his/her Physician, Walk-In Clinic, or Emergency Department on the day of the injury
    - i. If student-athlete is sent to the emergency department, coaching staff must tell the parent/guardian to supply the AT staff with appropriate documentation of evaluations
4. Coaches must inform the AT as soon as possible about any head injuries and all necessary action taken
5. Academic Guidelines

A. Student-athletes who sustain a head injury may need reduction in academics

i. Academic adjustments may include:

1. Partial school days
2. No physical education participation
3. No tests or quizzes will be given
4. Limit screen time (computers, movies, iPads, cell phones)
5. Limit reading
6. Do not allow student to listen to music
7. Allow to take breaks during class from work
8. Decrease work load by about 50-75% depending on student-athlete's symptoms
9. More one-on-one time may be needed to ensure comprehension of material
10. Limit homework to no more than 20 minutes per night

ii. As symptoms reduce

1. Accommodations may be altered or changed throughout the recovery process by the treating health care professional.

iii. Once cleared from their concussion by health care provider:

1. Teachers should be informed by school nurse
2. May participate in physical education
3. No academic restrictions

B. Non student-athletes who sustain head injuries will be monitored by the treating health care provider and school nurse only.

6. Return to Play (RTP) Procedures for Student-Athletes after Sustaining a Concussion

- i. Any student-athlete who is exhibiting signs or symptoms of a concussion or has abnormal cognitive findings will not be allowed to return to play on the same day as injury
- ii. All student-athletes will follow the graduated RTP progression
  - iii. All student-athletes must meet the following criteria in order to progress to activity
    1. Symptoms back to baseline for a minimum of 24 hours at rest and during mental exertion in school
      - a. Must progress into academics before athletics
    2. In case of a disagreement between medical professionals, the more conservative approach will be taken
  - iv. Graduated Return to Sport
    1. Symptom limited activity
      - a. Cannot progress to step 2 until symptoms are back to baseline for a minimum of 24 hours
    2. Light aerobic exercise (Walking, stationary bike)
    3. Sports-specific training
      - a. Ex: running in field hockey, skating in hockey
    4. Non-contact training drills
    5. Full-contact training drills
      - a. Neurocognitive testing: repeat testing must be at baseline prior to initiation of full contact practice.
    6. Game Play with health care provider clearance
      - v. If an athlete experiences an increase in baseline symptoms at any time during the progression they will immediately stop participation and report to AT

- vi. Student-athlete and coaches will be given written and/or verbal instructions about their activity level during the day
- 1. If practices are held off site, the coaching staff will be in charge of monitoring the student-athlete during participation
  - vii. If a student athlete does not complete a graduated RTP prior to the start of the next sport season; he/she will be required to complete the progression prior to the start of the first practice.

## 7. Home Instructions

### A. Parent/guardian will be notified of the student-athlete's suspected injury

- i. A take home sheet may be given to parent/guardian when available

### B. For visiting student-athlete's

- i. The coach will be notified
  - ii. The student-athlete's AT will be notified
  - iii. If possible, the student-athlete's parent/guardian will be contacted
- 1. If unable to contact parent/guardian the coach will be instructed to contact parent/guardian
  - 2. Take home instruction sheet may be given when available