

**Management of Sports-Related Concussions
Guidelines
Providence Sports Medicine**

Medical management of sports-related concussion continues to evolve. Providence Sports Medicine has established these guidelines to provide education about concussion management for coaches, school personnel, parents and athletes. This guideline outlines recommendations for staff to follow in managing concussions and outlines school guidelines as it pertains to return to play issues following a concussion. For the purposes of this document, “parent” refers to parents, guardians or emergency contacts as listed on the Annual Pre-participation form; “Health care professional” refers to Physician (MD), Doctor of Osteopathic (DO), Physician’s Assistant (PA), or Nurse Practitioner (NP), per Max’s Law (OAR 581-022-0421) and Jenna’s Law (ORS 336.24-485).

Providence Sports Medicine seeks to provide a safe return to activity for all athletes following any injury, but particularly after a concussion. In order to effectively and consistently manage these injuries, guidelines have been developed to aid in ensuring that concussed athletes are identified, treated and referred appropriately, receive appropriate follow-up medical care (in addition to academic modifications) and are fully recovered prior to returning to activity.

Recognize Concussion

The following signs and symptoms succeeding a witnessed or suspected blow to the head or body are indicative of a probable concussion. Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion shall be immediately removed from the contest or practice (“activity”) and shall not return to team activity until cleared by an appropriately trained health care professional, per Max’s Law (OAR 581-022-0421), or Jenna’s Law (ORS 336.24-485).

Signs (Observed by others)	Symptoms (Reported by athlete)	
Athlete appears dazed or stunned	Headache	Feels “foggy”, trouble thinking clearly
Confusion	Pressure in head	Difficulty concentrating
Forgets Plays	Neck pain	Difficulty remembering
Unsure about game, score, opponent	Numbness/ tingling	Drowsiness
Moves clumsily (altered coordination)	Fatigue	Difficulty Sleeping
Balance Problems	Dizziness	Sadness
Personality/Mood Changes	Nausea or vomiting	Nervousness/ Anxiousness
Responds slowly to questions	Sensitive to light or noise	Irritability
Can’t recall events prior to hit	Double vision, blurry vision	Feeling more emotional
Can’t recall events after hit	Ringing in Ears	Feels sluggish/ slowed down
Loss of consciousness (any duration)		

Emergency Management and Referral Guidelines for All Staff

1. The following situations indicate a medical emergency and require activation of the Emergency Action Plan:
 - a. In the event a Certified Athletic trainer (ATHLETIC TRAINER) is not on site, any athlete with a witnessed loss of consciousness (LOC) of any duration should not be moved, vitals should be monitored (First Aid/CPR training), and EMS should be activated.
 - b. EMS should be activated if an athlete has symptoms of a concussion and his/her condition is worsening:
 - i. A headache that gets worse and does not go away
 - ii. Repeated vomiting or nausea
 - iii. Slurred speech
 - iv. Increasing confusion, restlessness, or agitation
 - v. Unusual behavior
 - c. EMS should be activated when an athlete exhibits any of the following symptoms:
 - i. Deterioration of neurological function (weakness, numbness, or decreased coordination)
 - ii. Decreasing level of consciousness, increased drowsiness or cannot be awakened
 - iii. Increase of irregularity in respirations
 - iv. Any signs or symptoms of associated injuries, spine or skull fracture, or cerebral bleeding (one pupil [the black part in the middle of the eye] larger than the other)
 - v. Mental status changes: lethargy, difficulty maintaining arousal, confusion or agitation, difficulty recognizing people or places
 - vi. Seizure activity
2. In the event an ATHLETIC TRAINER is not present, all staff will be instructed to advise the parent to consult an appropriate health care professional on the day of the injury.

Remove from Activity:

Guidelines for Coaches:

Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion shall be immediately removed from the team activity and shall not return to play until an ATHLETIC TRAINER has determined no concussion was sustained or the athlete is cleared by an appropriate health care professional.

Guidelines for Certified Athletic trainers:

If the ATHLETIC TRAINER should see an athlete present with any of the above symptoms related to a concussion, the athlete must be removed from team activity for concussion evaluation. Once the

athlete is removed from play, the ATHLETIC TRAINER will evaluate the athlete utilizing a concussion assessment tool, i.e. the SCAT5. If the ATHLETIC TRAINER deems a concussion is not present and the athlete is safe to participate, the ATHLETIC TRAINER will allow the athlete to return to play. If the ATHLETIC TRAINER suspects the presence of a concussion, the athlete will be held from activity. The athlete's parents will be notified and next steps and management will be discussed. The ATHLETIC TRAINER will send a secure email (via #secure#) to the following school personnel to ensure effective communication with academics and athletics about return-to-play status: Athletic Director, Coach, Academic Counselor, School Nurse, and other personnel as appropriate at each institution. The injury and follow up information will be documented in the athlete's medical record by the athletic trainer.

Refer to Medical Personnel

Guidelines for Coaches:

The coach will refer any suspected concussion to the on-site ATHLETIC TRAINER for medical evaluation. If the injury is sustained on an away trip, the coach should document the injury in Healthy Roster so that the athletic trainer is notified. If documentation is not possible, the coach should contact the athletic trainer by phone to let them know of the injury.

If the ATHLETIC TRAINER is unavailable, the following procedure will be followed:

1. The coach is responsible for immediately notifying the athlete's parents of the injury (The coach will also notify the school ATHLETIC TRAINER as soon as possible), and the coach will advise the parent to consult an appropriate health care professional on the day of the injury.
 - a. Contact the parents to inform them of the injury. Depending on the injury, either an emergency vehicle will transport or parent will pick the athlete up at the event for transport.
 - b. A medical evaluation is required to begin the process of "Return to Play".
2. In the event that an athlete's parents cannot be reached and the athlete does not need immediate transport:
 - a. The coach should continue efforts to reach a parent and the athletic trainer
 - b. The coach will be responsible for transporting the athlete if he/she is symptomatic but stable. The coach will remain with the athlete until a parent arrives. **Athletes with suspected head injuries should not be permitted to drive home.**
3. Coaches should seek assistance from the host ATHLETIC TRAINER or team physician, if available, at an away contest.

Guidelines for Certified Athletic trainers:

As stated above, the ATHLETIC TRAINER will notify school personnel, including the student's academic counselor (at applicable schools, per school guidelines). The ATHLETIC TRAINER will monitor the athlete during the recovery process. The ATHLETIC TRAINER will refer to a health care professional when::

1. The athlete has completed the Return-to-Play (RTP) progression through step 4, the "Sport Specific Activity" phase, is asymptomatic, and is ready to begin step 5, the "Non-contact Team Activity" phase. or

2. Symptoms persist during the RTP progression or the athlete cannot progress at any point in the progression. or
 3. The athlete is symptomatic (not improving, not progressing) for more than 1 week.
- All Providence Certified Athletic trainers should be trained to utilize the Vestibular-Ocular Motor Screening (VOMS) to help determine specific treatment pathways or referrals if necessary.

Guidelines for the School Nurse (where applicable):

As stated above, the school nurse will receive a secure email notification from the ATHLETIC TRAINER regarding student-athlete injury status and medical recommendations for academics:

1. If the student-athlete reports to the school nurse during the school day with persistent symptoms the school nurse will:
 - a. Follow his/her protocol for physical assessment, and health problem, injury, including: assessing the student athlete, notifying the parent, and helping the student/family access healthcare resources or the School-Based Health Center, if one is present on-site.
 - b. Inform the ATHLETIC TRAINER of the incident via secure email.
2. If the school nurse assesses that symptoms are exacerbated by academic participation, he/she will notify the parent and school counselor regarding the possible need for academic modifications.
3. If any student outside of OSAA sanctioned athletics reports to the school nurse with concussion symptoms, the ATHLETIC TRAINER may act as a referral source and may help with evaluation, management, and referral pathways.

Guidelines for the Academic Counselor (or other staff assigned by school):

As stated above, the academic counselor will receive a secure email notification from the ATHLETIC TRAINER regarding student-athlete injury status, potential for academic modifications, and the recommendation of restriction from P.E. and weight lifting class until cleared by an appropriate health care professional. The academic counselor will:

1. Communicate with the student-athlete's academic teachers and contact the P.E. and weight lifting teacher, informing them of the restriction.
2. Monitor the student closely and recommend appropriate academic modifications for students who are exhibiting prolonged post-concussion signs and/or symptoms.
3. Communicate with the ATHLETIC TRAINER or school nurse on a regular basis, to provide the most effective care for the student, specifically if the student continues to struggle academically and further medical referral is necessary.

Return to Activity

Return-to-Participation (RTP) Recommendations after Concussion

Return to physical activity and full team participation is a medical decision. The athlete must meet the following criteria in order to progress to initial physical activity:

1. Initial 24-48 hours cognitive (limited TV, video games, cell phone use, reading, etc) and physical rest after injury. Athlete may continue academic participation during this time if symptoms are not exacerbated with academic activity.

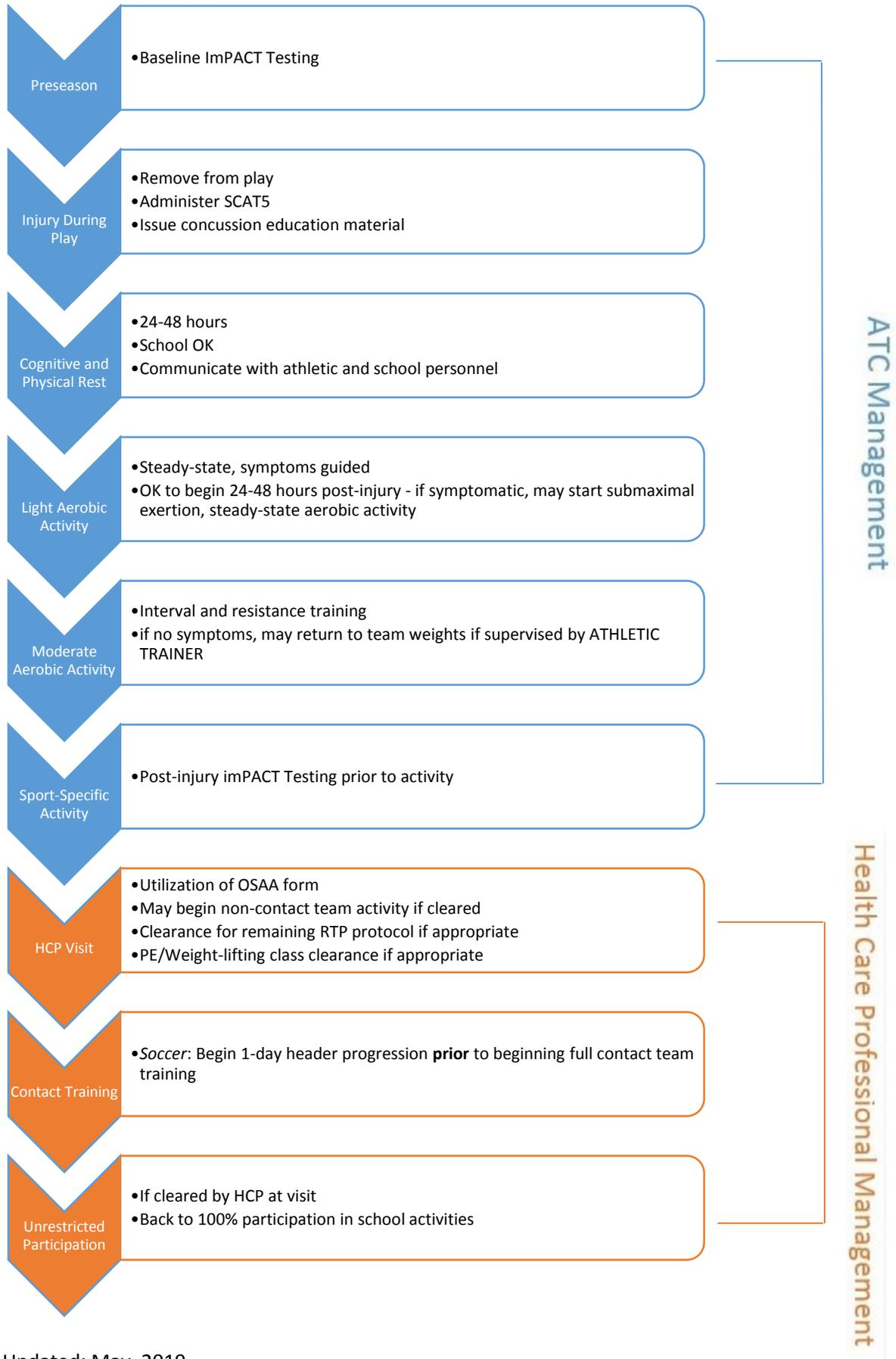
- a. After the rest period, if the athlete is symptom free, the ATHLETIC TRAINER may start step 2, light aerobic, steady state activity.
- b. If the athlete is still experiencing symptoms, the ATHLETIC TRAINER may start submaximal (approximately 40% of athlete's maximum exertion) steady state aerobic activity. The aerobic activity intensity should not increase symptoms. If the athlete fails to improve, or their symptoms get worse, after one week, then refer to physician.
- c. After this step, the Providence RTP will take effect under the supervision of the ATHLETIC TRAINER.

The athlete must meet all of the following criteria in order to return to full team participation:

1. Complete a graded Return-to-Participation progression ATHLETIC TRAINER (see below)
2. No longer exhibit signs, symptoms or behaviors consistent with a concussion
3. Obtains written clearance from an approved health care professional. The ATHLETIC TRAINER will refer the athlete to obtain written clearance following step 4, sport specific activity and post-injury ImPACT test.
4. Must be back to full participation in the classroom without modifications due to concussion.

Providence Graded Return-to Participation

The athlete should spend at minimum 1 day at each step before advancing to the next. The athlete must be asymptomatic or improving in symptoms for at least 24 hours before proceeding to the next step in the activity protocol. If post-concussion symptoms occur at any step, depending upon the type and severity of the symptoms, the athlete may be told to rest for 24 hours and then resume activity at a level one step below where he or she was when the symptoms occurred. If symptoms persist during progression or the athlete cannot progress at any point in the progression, the athlete will be referred to a health care professional. Athletes who are symptomatic (not improving, not progressing) for more than 1 week should be referred to a healthcare provider that has experience in managing concussion. When available, ATHLETIC TRAINER should consult with the school-based health center if the athlete cannot see the other healthcare provider in a timely manner (3 days).



Note: 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 may be progressed more slowly.

Preseason. All athletes participating in high-risk sports should be encouraged to complete a baseline Immediate Post-Concussion Assessment Testing® Test (ImPACT®). High-risk sports include, but are not limited to, all levels of: football, M/W soccer, cheerleading, M/W basketball, and wrestling. ImPACT baseline testing is recommended for all sports of all risk levels.

Injury during play. Any athlete with a suspected head injury will be immediately removed from play. The athlete will be evaluated by the ATHLETIC TRAINER, if present, utilizing a concussion assessment tool like the SCAT5, as outline above in the “Remove” section of this document.

Step 1. Cognitive and physical rest for a minimum of 24-48 hours.. The student-athlete should abstain from cognitive and physical activity for at minimum 24-48 hours. It is ok for the student to continue attending school at this time. If symptoms resolve within the days following the injury, the student-athlete may begin Step 2 in the RTP progression under the supervision of an ATHLETIC TRAINER 24 hours after symptoms resolve. If the student-athlete continues to be symptomatic in the days following the injury, the student athlete may progress to Step 2 in the RTP progression under the supervision of an ATHLETIC TRAINER 24-48 hours post-injury. The student-athlete may continue school participation during this time, though is it recommended that TV, video games, cell phone use, reading, etc. is limited. Activities requiring concentration and attention may worsen symptoms. If symptoms persist with academic participation, he/she may inform the school nurse and school counselor, and academic modifications may be put in place. Due to the physical nature of P.E. and weight lifting class, it is recommended that the athlete not participate in these classes until he/she has completed a graded return-to-participation progression with the Certified Athletic trainer, no longer exhibits signs, symptoms or behaviors consistent with a concussion, and has written clearance from an approved health care professional.

Step 2. Light Aerobic Exercise (steady-state). This step may begin under the supervision of an ATHLETIC TRAINER 24-48 hours post-injury even if athlete is symptomatic. If the athlete is still symptomatic, athlete will start with submaximal, steady state aerobic activity. The aerobic activity should not increase symptoms. P.E. class, weight-lifting class, and team weight-lifting are still restricted. Team practice or contest activity is still restricted.

Step 3. Moderate Aerobic Exercise (Interval). This step may begin under the supervision of an ATHLETIC TRAINER if no or improved symptoms from the previous step. If this step elicits no symptoms, the athlete may begin team weight lifting, if supervised by an ATHLETIC TRAINER. P.E. class and weight-lifting class are still restricted. Team practice or contest activity is still restricted.

Step 4. Sport Specific activity. This step may begin under the supervision of an ATHLETIC TRAINER if no or improved symptoms from the previous step. Post-injury ImPACT testing is to be performed **prior** to supervised activity with the ATHLETIC TRAINER. P.E. class and weight-lifting class are still restricted. Team practice or contest activity is still restricted.

Step 5. Health Care Professional Visit. The athlete will see a health care professional after they have completed sport specific activity with the ATHLETIC TRAINER. The health care professional may clear the athlete for non-contact team training in addition to full-contact team training and unrestricted participation at this visit, if appropriate. The health care professional may clear the athlete for P.E. class and weight-lifting class at this visit, if appropriate. The OSAA concussion Return to Participation form will be used for correspondences.

Step 5a. Non-contact team sporting activity (*Shells only for football*). This step may begin if cleared by a health care professional.

Step 6. Full-Contact practice or training. This step may begin if cleared by a health care professional at visit and if symptom free at rest and with graded exertion. *For soccer athletes:* A separate 1-day header progression must be completed with ATHLETIC TRAINER prior to beginning full-contact training. Athlete must be asymptomatic for at least 24 hours after header progression before beginning full-contact training.

Step 7. Unrestricted participation. This step may begin if cleared by a health care professional at visit and if symptom free at rest and with graded exertion. Athlete must be back to full participation in the classroom, with no modifications due to injury, before unrestricted participation.

Note: If ATHLETIC TRAINER does not feel that the clearing health care professional is familiar with current concussion guidelines in line with recent research, the ATHLETIC TRAINER may recommend the athlete see the school's designated Sports Medicine Physician. The ATHLETIC TRAINER has the authority to prevent a student from beginning or returning to activity if signs, symptoms, or behaviors of the concussion are still apparent in the academic setting or during physical activity. ATHLETIC TRAINER may remove athlete from play if they deem them unsafe to participate at any time, even after clearance for participation has been made by health care profession.

Baseline ImpACT Guideline: If an athlete should sustain a concussion during a sports season, they must re-take an ImpACT baseline test once fully recovered, prior to beginning his/her next sport season.

Once a student-athlete has safely met all criteria for full return to team participation, the ATHLETIC TRAINER will send a confirmation of clearance email to the following school personnel: Athletic Director, Coach, School Counselor, School Nurse and other personnel as appropriate at each institution.

The Providence sport-related concussion management guidelines will update as current research and standards of best practice evolve.

I have read and understand the above Providence sport-related concussion management document:

School Administrator: _____ Title: _____ Date: _____

Athletic Director: _____ Date: _____

Head Athletic trainer: _____ Date: _____

References:

Max's Law, OAR 581-022-2215

Jenna's Law, ORS 336.24-485

McCrory P, et al. Br J Spo(2016). Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016. *Br J Sports Med* 2017;0:1–10. doi:10.1136/bjsports-2017-097699

Broglio, S. P., Cantu, R. C., Gioia, G. A., Guskiewicz, K. M., Kutcher, J., Palm, M., Valovich McLeod, T. C. (2014) National Athletic trainers' Association position statement: Management of sport concussion. *Journal of Athletic Training, 49*, 245-265.

Harmon, K. G., Drezner, J. A., Gammons, M., Guskiewicz, K. M., Halstead, M., Herring, S.A, Kutcher, J. S., et al. (2013). American Medical Society for Sports Medicine position statement: Concussion in sport. *British Journal of Sports Medicine, 47*, 15-26.