

Concussion Management Protocol

We at Total Sports Experience desire a safe return to play for all sick or injured athletes. Research has shown that an athlete's coordination, balance and/or cognitive functioning are often depressed following a concussion – even in the absence of self-reported symptoms. It has been demonstrated that it typically takes 7 to 10 days for an athlete to return to their normal state following a concussion. However, in some cases (<10%) athletes can experience post-concussion syndrome in which the symptoms last beyond 3 weeks. The following recommendations are in part extracted from the National Athletic Trainers' Association Position Statement: Management of Sport-Related Concussion, Guidelines for Concussion management in the school setting (published by the NYS education department in 2012) and the Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012, and adapted for Total Sports Experience.

We at Total Sports Experience recommend a multi-pronged approach when determining an athlete's readiness to return to play following a concussion. In the event of a suspected concussion, the *concussion management protocol* requires evaluation of the athlete by an appropriate medical provider.

These adapted recommendations provide guidelines for concussion recognition, evaluation, management, and safe return to activity for the student-athlete. Academic assistance, medical monitoring, and counseling may be necessary for an athlete with a concussion.

This protocol will be reviewed annually by the Total Sports Experience medical staff. Any changes or modifications will be reviewed and given to the appropriate team personnel in writing. The objective of having this protocol in place is to help raise awareness and recognition of concussion.

Total Sports Experience recommends that every team participating in athletic activity on site at our facility should have their own evidence based concussion management protocol in place in event that a head injury occurs. At no time will the members of the staff at Total Sports Experience be held responsible or expected to provide evaluation, diagnosis or treatment advice in regards to the treatment of concussion.

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I. Recognition of Concussion

Common signs and symptoms of sport-related concussion

The latest studies conducted on concussion have demonstrated an increased rate of recognition of concussion across all sports. Early recognition is critical to implementation of comprehensive evaluation, appropriate monitoring and treatment recommendations to enable efficient and safe recovery from injury. This is especially true for our program as emerging research has demonstrated increased susceptibility of the developing brain to injury and prolonged recovery times in younger athletes with concussion.

1. Signs (observed by others):

- Loss of consciousness (any duration)
- Nausea or vomiting
- Athlete appears dazed or stunned
- Confusion (about assignment, plays, etc.)
- Forgets plays
- Unsure about game, score, opponent
- Moves clumsily (altered coordination)
- Balance problems
- Personality and/or behavior changes
- Responds slowly to questions
- Forgets events prior to injury
- Forgets events after the injury

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

These signs and symptoms are indicative of probable concussion. Other causes for any of these signs/symptoms should also be considered in determining the appropriate approach to management and return to activity recommendations.

II. Immediate Referral Guidelines

1. An athlete with prolonged loss of consciousness (LOC) should be spine boarded and transported immediately to the nearest emergency department via emergency vehicle.
2. An athlete who has symptoms of a concussion and is not stable (condition is rapidly deteriorating), is to be transported immediately to the nearest emergency department via emergency vehicle.
3. An athlete who exhibits any of the following signs is considered unstable and should be transported immediately to the nearest emergency department, via emergency vehicle.

Unstable signs:

- deterioration of neurological function
- decreasing level of consciousness
- irregularity in respirations
- irregularity in pulse
- unequal, dilated, or nonreactive pupils
- any signs or symptoms of associated injuries, spine or skull fracture
- fluid (clear or blood) from the eyes, ears, nose, or mouth
- mental status changes: lethargy, difficulty maintaining arousal, increasing confusion or agitation
- seizure activity
- cranial nerve deficits

4. An athlete who is symptomatic but stable, (meaning not showing any of the unstable signs listed above), may be transported by a responsible individual (parent, guardian, or someone who can follow the instructions) to a facility where the athlete can be evaluated by a qualified medical provider within 24 hours of the injury.
5. A responsible individual may be allowed to transport the athlete home if the individual understands the home care instructions and is able to monitor the athlete.
6. Written and verbal home care instructions in addition to follow up care instructions will be given to the athlete and responsible person in charge of the athlete.
7. The coaching staff will maintain communication with the athlete or responsible person in charge of the athlete regarding the athlete's status including return to

play until the athlete is completely recovered and cleared by a qualified medical provider.

III. Guidelines for Coaches

1. Any athlete who exhibits signs or symptoms of a concussion should be removed immediately and evaluated. All coaches should be familiar with the signs and symptoms of concussion described in section I.
2. Coaches should report all head injuries to a member of the Total Sports Experience staff. An incident report will be completed on site at time of injury reporting.
3. Coaches should seek assistance with evaluation of the injured athlete from a certified athletic trainer if one is available.
4. Coaches will insure that the athlete will be with a responsible individual (a person who is capable of monitoring the athlete and understands the home care instructions) before allowing the athlete to go home. 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 appropriately designated guardian, should accompany the athlete and remain with the athlete for that evaluation.
5. Home care and monitoring instructions: Athletes who have been diagnosed with a concussion require both physical and cognitive rest to recover (see #6 and #7 below). Delay in instituting such rest may prolong recovery from a concussion. These restrictions should be applied to all areas of life (including home and school). Children and adolescents are at significantly increased risk of protracted recovery and severe, potentially permanent disability or even death if they sustain second concussion before fully recovering from the first concussion.
6. Cognitive Rest requires that the athlete avoid participation in, or exposure to, activities that require concentration or mental stimulation including, but not limited to:
 - a) Screen time including computers, video games, television viewing or texting
 - b) Reading or writing
 - c) Studying or homework
 - d) Test taking, school or work projects
 - e) Loud music
 - f) Bright lights

Parents, guardians, teachers, and coaches should watch for signs or symptoms of concussion with any type of mental stimulation. If any of these signs and symptoms occur, the athlete should cease the activity. Return of symptoms should help guide whether the athlete should be participating in the activity in question.

7. Physical Rest includes getting adequate sleep, taking frequent rest periods or naps, and avoiding any physical activity that requires exertion. Some activities that should be avoided include but are not limited to:
 - a) Activities that result in contact and collision and are high risk for re-injury
 - b) High speed and/or intense exercise or sports
 - c) Any activity that results in an increased heart rate or increased pressure (for example-straining or strength training)

This may be difficult to manage as often the athletes may feel sad or angry about having to limit activities. Best strategy is to reassure them that the situation is temporary and the goal is to get them back to full activity as soon as it is safe, and to avoid activities which will delay their recovery.

IV. Follow-up Care of the Athlete

Total Sports Experience recommends all athletes that are suspected of suffering a concussion be evaluated by a qualified medical provider. Rochester Regional Health Concussion Center is one place where athletes can be evaluated in an efficient and comprehensive manner to ensure safe and appropriate return to activity after concussion. Call 585-922-1212 to schedule a consultation.

Appendix

Return to Activity Procedures after Concussion

1. Returning to participate on the same day of injury
 - As previously discussed in this document, an athlete who exhibits signs or symptoms of concussion, any loss of consciousness, or has abnormal cognitive testing, should not be permitted to return to activity on the day of the injury until a medical evaluation is performed. When in doubt, hold the athlete out.
 - Any athlete who has been evaluated and determined to have a concussion will not be returned to play on the same day.

2. Return to activity after concussion

Any athlete who has been diagnosed with a concussion should be followed by a qualified medical provider until all signs and symptoms of concussion have resolved completely. No physical activity should be permitted while an athlete is still exhibiting signs or symptoms of a concussion. The athlete may be put on restrictions for school attendance while recovering. The athlete should be able to return to full cognitive activity (school attendance and participation with the exception of gym and sports) prior to any consideration for return to physical activity.

- The athlete should meet all of the following criteria in order to progress to game play:
 - a) Asymptomatic at rest
 - b) Full school attendance and participation
 - c) Have written clearance from a qualified medical provider.
 - d) Completed a 6 step graduated exertional return to activity progression (see below #5)
3. Once the above criteria are met, the athlete may be progressed back to full participation under the supervision of the coaching staff and with clearance from a physician. The coaching staff will keep all pertinent parties informed regarding the status of the athlete.
 4. Progression to activity is individualized and should be determined on a case by case basis. Factors that may affect the rate of progression include
 - Previous history of concussion
 - Previous medical and psychiatric history
 - History of learning disability or developmental disorders
 - Duration and type of symptoms

5. Example of a Graduated progression:

- 1) Physical and Cognitive rest until asymptomatic. Progress to step 2 when asymptomatic for minimum of 7 days.
- 2) Light aerobic exercise – walking, stationary bike. No resistance training.
- 3) Increased intensity exercise-mild to moderate intensity cardiovascular activity with added resistance training
- 4) Non-contact training drills-sport specific activity/drills (add hand eye coordination activity to cardiovascular activity)
- 5) Full-contact training (athlete must participate in a full contact/unrestricted practice at least 1 day prior to participation in scheduled athletic contest/game without recurrence in concussion symptoms)
- 6) Competition

Note: If the athlete experiences post-concussion symptoms during any phase, the athlete drops back to the previous asymptomatic level and a qualified medical provider is notified to adjust the return to play schedule recommendations as appropriate. A period of at least 24 hours must pass between each step in the above listed progression. First time concussed athletes that have symptoms resolve within 24 hours are often able to complete this progression over a single week. However, how quickly the athlete is able to progress through the activities can vary based on several factors. Specifically, concussion symptoms lasting longer than 24 hours, and athletes who have sustained another concussion previously will likely require a longer return to play time schedule.

7. The coach and athlete should discuss appropriate activities for the day while athlete is running through the progression. If any questions arise regarding the return, the coach will contact the appropriate sports medicine personnel to clarify any issues.
8. The athlete should coordinate with the coach daily until progressed to unrestricted activity. Once the athlete returns to full competition, the coach should continue to monitor the athlete for recurrence of signs or symptoms over the next few days.

Multiple Concussions

How many concussions does it take before permanent brain damage is done? The answer to this question is yet unknown, but recent evidence suggests that some “cumulative” effects can be seen with the athlete who has sustained multiple concussions. With that in mind, Total Sports Experience recommends any athlete who has been diagnosed with multiple concussions in their lifetime be evaluated by an expert in concussion management prior to making any decisions regarding return to play.