

Lyons Township On-Site Acute Concussion Protocol

At the time of suspected injury, the initial evaluation should assess acute trauma. If the injured individual is unable to leave the current location under his or her own power, the certified athletic trainer (ATC) should perform a primary survey, including evaluation of airway, breathing, and circulation (i.e, the ABCs). Whether the individual is conscious or not, the ATC should suspect and rule out a cervical spine injury and other more severe injuries. If unable to determine that there is no cervical spine injury, the individual must have their neck immobilized and they should be transported by EMS. Once no life-threatening injuries are determined to be present, the concussion examination should begin.

Any individual suspected of having a concussion will immediately be removed from participation in the current activity and a systematic injury evaluation conducted. When presented with any signs or symptoms of a concussion, the individual will not participate indefinitely until cleared by a physician familiar with treating concussions. The concussion diagnosis is made after a thorough clinical examination (Table 3). The clinical examination includes an injury history (including symptoms), observation of the patient, palpation for more severe orthopedic or neurologic injury, and special tests for mental status and motor control.

The concussion assessment conducted by the ATC should be implemented in a consistent fashion as part of a comprehensive neurologic evaluation. When a physician is not readily available, the ATC will be more conservative when interpreting the clinical examination results and making the injury diagnosis. If an individual is diagnosed with a concussion, the individual will not be allowed to drive home. Transport to a medical facility for a concussion is not typically required but may be necessary if the individual is unconscious for a prolonged period of time (greater than 1 minute), shows declining mental status during or after the injury evaluation, or demonstrates signs and symptoms of an injury more severe than a concussion. For a student-athlete who is transported, the attending physician may recommend imaging to rule out other brain injuries more severe than concussion. An isolated concussion will have normal brain imaging, but a head injury can result in other brain injuries requiring consultation with a neurosurgeon.

Table 3. Suggested Domains of the Clinical History and Examination for Concussion Management

Domain	Features or Examples	How to Assess?'
Previous concussions	Date(s) and circumstances; presence and duration of loss of Consciousness, amnesia and symptoms with each injury	Pre-participation examination
Concussion-related personal history	Mood disorder, learning disability, attention-deficit hyperactivity disorder, epilepsy or seizures, sleep apnea, skull fracture, migraine headaches	Pre-participation examination
Family history	Mood disorder, learning disability, attention-deficit hyperactivity disorder, dementia (ie. Alzheimer disease), migraine headaches, complications from concussions	Pre-participation examination
Symptoms	Current and recurrent	Symptom checklist or scale
Mental status	Level of consciousness, attention and concentration, orientation, memory	Standardized Assessment of Concussion
Eye examination	Eye movements with smooth pursuit (cranial nerves III, IV, VI), nystagmus (VIII), pupillary reflex (CN II, III)	Clinical examination
Muscle strength	Strength evaluation of deltoids, biceps, triceps, wrist and finger flexors and extensors"; pronator drift	Clinical examination
Motor control	Balance assessment	Balance Error Scoring System
Cognitive function	Reaction time, working memory, delayed recall	Neurocognitive testing

"Assessment tools are indicated where available.

"Notable deficits may be associated with nerve root injury or concussion.

Adapted from: National Athletic Trainers' Association Position Statement: Management of Sport Concussion
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Concussion Guidelines

A concussion is defined as a brain injury caused by a blow to the head or violent shaking of the head. A concussion is also known as a mild traumatic brain injury (mTBI). Concussion symptoms include, but are not limited to: headache, dizziness, nausea/vomiting, blurred vision, double vision, tinnitus (ringing in the ears), confusion, lethargy, photophobia (sensitivity to light), difficulty concentrating, difficulty balancing, sensitivity to noise and loss of consciousness. It should be noted that a concussion can occur even without a loss of consciousness.

If a student is believed to have suffered a concussion, s/he is removed from physical activity (sports, classes or related activities that may impede recovery) immediately. The student will be evaluated by a certified athletic trainer (ATC) and parents will be notified. Students must be released into the care of his/her parents or a designated individual of the parent's choosing; a student is not allowed to drive or walk home. Upon pick up of the student from the event, the parent or designated individual may be given a home head injury care sheet and monitoring closely for any worsening or new symptoms for at least 24 hours is highly recommended.

The student is not allowed to return to play of his/her sport, club sports, physical education, or any physical activity including classes that may impede recovery until cleared to return by a physician, either the school physician or a physician familiar with treating concussions. Communication between parents, student, and other personnel on an as needed basis including but not limited to counselor, health office, LTHS physician, athletic trainer, or coach is ongoing and documented.

Following completion of the graduated exercise guidelines as outlined in the Additional Care for Student-Athletes Section the student-athlete will complete a return to play Impact test, if applicable. The student-athlete will also follow up with the school physician for reevaluation to determine return to full activity.

Upon physician clearance, the student-athlete may return to full play, physical education, and any club sports with any restriction (if applicable) placed upon them by the physician.

Lyons Township High School is fully committed to the health and welfare of our students and athletes. These guidelines are based on current concussion research put forth by multiple medical agencies and athletic governing bodies; should new findings come to light, these guidelines may be updated to reflect said findings. It should be noted that all concussions are different and will be handled on a case-by-case basis, following the basic tenets listed in these guidelines, individualized to the student and/or athlete.

Prescribed Sequence of Care for Students

The student will follow the 6 step prescribed sequence as outlined below:

1. The student will remain out of any physical activity, including but not limited to his/her sport, any club sports he/she may participate in, and classes including physical education or others designated by a physician. This period of physical rest includes being excused from any conditioning programs and weight lifting. During this period, the student will check in with the health office / ATC on a regular basis (this may be daily or every other day) to update progress on symptoms. The health office / ATC will document symptom progression in Infinite Campus. At this time, if applicable, the student will take a post- injury Impact test. The student will remain in this stage until he/she is symptom-free.
2. During this time, cognitive rest is also important. The student should limit intensive visual or auditory stimuli such as TV viewing, video games, and texting.
3. Cognitive mental activity should be minimized to basic school work. If having trouble with basic school work, counselor should become involved to notify teachers and modify schoolwork, schedule, and determine make-up as deemed reasonable.
4. Once the student reports no symptoms, the student will remain out of any physical activity for a period of at least 2 days. This time period is determinant on physician's examination as well as duration of symptomatic phase. During this time, the student should continue follow up care with the health office / ATC to ensure that symptoms do not return.
5. If the student continues to be asymptomatic for the designated time period, s/he will begin a period of graduated exercise as prescribed by their physician.
6. Complete return to play and return to learn requires documented physician approval.

Additional Care for Student-Athletes

Additionally, if the student is a student-athlete, the student-athlete will work with LTHS athletic trainers and LTHS physician according to the following 4-step plan.

1. The first stage of graduated exercise for a student-athlete will have the student-athlete running on a treadmill at a speed individualized to the student-athlete's cardiovascular conditioning. The student-athlete will follow up with the ATC post exercise challenge and report any symptoms that may have recurred, if any.
2. Should the student-athlete report any recurrence of symptoms after exercise, the student-athlete will return to a period of complete rest from physical and cognitive activity. The symptomatic student-athlete will progress through the above guidelines as before and attempt exercise only after being asymptomatic as stated in the section of Prescribed Sequence of Care for Students.
3. The asymptomatic student-athlete will progress exercise the next day. This will include running on a treadmill at a speed individualized to the student-athlete's cardiovascular conditioning, but at a higher intensity and/or duration than the previous day. The athlete will follow up with the ATC post-exercise challenge and report any symptoms that may have recurred, if any. The asymptomatic student-athlete may return to weight lifting and conditioning, including, but not limited to running, agility, and/or strength training with the team, if applicable. The student-athlete should remain non-contact at this point. Should the student-athlete report any recurrence of symptoms after exercise, the student-athlete will return to a period of complete rest from physical and cognitive activity and follow guidelines as outlined in the section of Prescribed Sequence of Care for Students.
4. The asymptomatic student-athlete will progress exercise the next day. This will include running on a treadmill at a speed individualized to the student-athlete's cardiovascular conditioning, but possibly at a higher intensity and/or duration than the previous day. The athlete will follow up with the ATC post-exercise challenge and report any symptoms that may have recurred, if any. The asymptomatic student-athlete may continue weight lifting and conditioning as outlined in the above Section 3. At this time, the student-athlete may also return to sport-specific, non-contact drills. This may include, but is not limited to any kind of footwork and position specific drills. This may also exclude any kind of ball-work drills that may result in contact between the ball and the head, even inadvertently. Should the student-athlete report any recurrence of symptoms after exercise, the student-athlete will return to a period of complete rest from physical and cognitive activity and follow guidelines as outlined in the section of Prescribed Sequence of Care for Students.