

We are publishing our guidelines in order to clarify the Sports Medicine Team's procedures when dealing with mild traumatic brain injuries (concussions). These guidelines are the latest in concussion management and come from the Consensus Statement on Concussion in Sport 3rd International Conference on Concussion in Sport Held in Zurich, November 2008 (McCroory, 2009). These same guidelines are being recommended by the National Collegiate Athletic Association (NCAA) and National Federation of High School Sports. There is currently no known "concussion-proof" equipment made for any sport. Concussions can occur in any sport and adolescents are more susceptible than adults, since their brains are still in development. We continually monitor prevention and care guidelines, and will update our approaches as new research become available.

### ***New Trier High School Mild Traumatic Brain Injury (Concussion) Guidelines***

When an athlete shows symptoms or behaviors consistent with a concussion, such as: confusion, forgetfulness, clumsy movement, behavior or personality changes, loss of consciousness (however brief), or an athlete reporting sensitivity to light or sound, headache, dizziness or sluggishness, double vision, nausea, ringing in the ears, concentration or memory problems, or a change in sleep patterns, a concussion should be suspected. If any of these signs are noticed, the athlete shall be removed from practice or competition and evaluated by an athletic healthcare provider with experience in the evaluation and management of concussion (i.e. Athletic Trainer). An athlete diagnosed with a concussion shall be withheld from the competition or practice and not return to activity for the remainder of that day.

If no athletic healthcare provider (athletic trainer) is available for diagnosis, the athlete will not be allowed to return to practice or play when showing symptoms. The presiding coach will determine if 911 should be called, and will call the student's parents immediately. When 911 is called, an athletic administrator will also be notified. The player will not be left alone and must be monitored for a change in condition over the next several hours. The athletic trainer and/or team physician will then determine the disposition of the case.

Before returning to any physical activity, the athlete must be cleared by the medical care team. Cognitive rest such as limiting TV viewing, video games, and texting is recommended during this period. An evaluation of the athlete's post-injury status will be determined by a certified athletic trainer, using the ImPACT neurocognitive screening tool. (See <http://www.impacttest.com> for more information). When the player is symptom-free and able to resume activity, a prescribed sequence of steps must follow. Light aerobic exercise is encouraged at first to increase heart rate and cranial blood pressure; moderate to heavy cardio and sport/specific drills will next be permitted; then, light contact with no head impact activities; and finally, full participation/full contact. The athlete will be cleared to play with no restrictions if no symptoms return (Runkle, 2010).

## Graduated Return to Play Protocol

Return to play protocol following a concussion follows a stepwise process as outlined in the table below (McCrory, 2009).

Rehabilitation Stage	Functional Exercise at Each Stage of Rehabilitation	Objective of Each Stage
1. No activity	Complete physical and cognitive rest	Recovery
2. Light aerobic exercise	Walking, swimming or stationary cycling keeping intensity <70% MPPHR; no resistance training	Increase HR
3. Sport-specific exercise	Skating drills in ice hockey, running drills in soccer; no head impact activities	Add movement
4. Non-contact training drills	Progression to more complex training drills, eg, passing drills in football and ice hockey; may start progressive resistance training	Exercise, coordination, and cognitive load
5. Full contact practice	Following medical clearance, participate in normal training activities	Restore confidence and assess functional skills by coaching staff
6. Return to play	Normal game play	

With this stepwise progression, the athlete will only continue to proceed to the next level if asymptomatic at the current level. Each step will take 24 hours so that an athlete would take one week to proceed through the full rehabilitation protocol once they are asymptomatic at rest and with provocative exercise. If any post-concussion symptoms occur while in the stepwise program, then the patient should drop back to the previous asymptomatic level and try to progress again after a further 24-hour period of rest has passed.

The Athletic Training staff is fully committed to the health and welfare of New Trier athletes. If there are any questions regarding the previous information, please contact the Athletic Training staff.

## Works Cited

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- Runkle, Debra. "Concussion Management Plan." Letter to NCAA Head Athletic Trainers. 29 Apr. 2010. *Memo+Concussion+Management*. NCAA, 29 Apr. 2010. Web. 22 July 2010.  
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