

Concussion Information and Protocol's

What is a Concussion:

A concussion is a type of traumatic brain injury—or TBI—caused by a bump, blow, or jolt to the head, or by a hit to the body which may cause the head and brain to move quickly back and forth. This fast movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging the brain cells.

Common Signs and Symptoms:

	Thinking/ Remembering	Difficulty thinking clearly	Feeling slowed down	Difficulty concentrating	Difficulty remembering new information
	Physical	Headache	Nausea or vomiting (early on)	Sensitivity to noise or light	Feeling tired, having no energy
		Fuzzy or blurry vision	Dizziness	Balance problems	
	Emotional/ Mood	Irritability	Sadness	More emotional	Nervousness or anxiety
	Sleep	Sleeping more than usual	Sleeping less than usual	Trouble falling asleep	

Danger signs to look out for:

- One pupil larger than the other
- Drowsiness or inability to wake up
- Headache that gets worse and does not go away
- Slurred speech, weakness, numbness, or decreased coordination
- Repeated vomiting or nausea, convulsions or seizures
- Unusual behavior, increased confusion, restlessness, or agitation

If you see any of these signs seek emergency medical care

The Dangers of Returning Too Soon:

Second Impact Syndrome: This occurs when a second blow to the head happens before the brain is allowed to heal. This impact can cause the brain to swell which could result in brain damage, paralysis, and even death.

Post-Concussion Syndrome: This also occurs after a second impact before the brain is allowed to heal possibly resulting in long-term concussion symptoms.

Ohio's Youth Concussion Law (ORC 3313.539 or ORC 3314.03)

According to Ohio law if any youth athlete practicing for or competing in an interscholastic athletic event exhibits signs, symptoms, or behaviors consistent with having sustained a concussion or head injury they shall be removed from the practice or competition. If a student is removed from practice or competition they are not allowed to return on the same day. That student may return to practice or competition the following day if cleared in writing by a physician or licensed health care professional stating that they did not sustain a concussion.

Visit <http://www.odh.ohio.gov/health/vipp/child/returntoplay/Parents%20and%20Guardians.aspx> for more information.

ImPACT testing:

Through Fort Hamilton Hospital we are able to provide baseline concussion testing for all athletes participating in high risk sports. Athletes who will be required to take the baseline test include football, boys and girls soccer, wrestling, boys and girls basketball, softball, baseball, and boys and girls volleyball. Individual athletes with a history of concussions should also receive baseline testing at the discretion of the athletic trainers.

ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) is a computerized neurocognitive test used to evaluate and manage suspected concussions. It measures multiple aspects of cognitive functioning, attention span, working memory, sustained and selective attention time, non-verbal problem solving, and reaction time.

There are two forms of this test:

1. *Baseline Test:* Administered before the start of a sport season or activity and re-administered every two years.
2. *Post-Injury Test:* Administered when a concussion is suspected. These test results are then compared to baseline scores and/or normative data scores as part of the concussion assessment.

**Non-Baseline Athletes:* he/she will complete a post-injury test which will be compared to normative data. These non-baseline tests should be cleared by a physician before the athlete may return to full contact.

Additional information regarding the ImPACT testing can be found at <https://impacttest.com/>

Physical Therapy:

For some individuals, the symptoms of a concussion can last for weeks and/or months. If symptoms continue to persist physical therapy may be an appropriate form of treatment to help students return to their baseline function. Fort Hamilton Hospital has therapists who are trained to recognize and treat symptoms such as dizziness, headaches, difficulty focusing or concentrating and altered balance, to name a few. Treatments may include balance re-training and visual stabilization exercises.

If your student athlete continues to have any of these symptoms after 48-72 hours, talk to your doctor to discuss the possible benefit of physical therapy to facilitate return of normal activity.

Return To Sports

Return to Play Protocol:

1. When an athlete sustains a head injury the athletic trainer should be notified. He/She will then communicate with the school nurse who will handle any needed academic modifications
2. Athlete is seen by a physician to establish what the next steps should be
3. 24-72 hours post injury the athlete takes the ImPACT test so scores can be compared to their baseline
4. Athlete checks in with school nurse or counselor so that proper academic modifications can be made and symptoms can be managed throughout the school day
5. Once symptoms have subsided re-take the ImPACT test
6. If the athlete ImPACT scores are back to baseline and the athlete has been cleared by a physician a return to play progression may be started after being symptom free for at least 24 hours.

During each stage of the return to play progression the athlete must be symptom free during the exercises as well as for 24 hours following that activity before moving on to the next stage.

Progressive Return to Play Protocol

Rehabilitation Stage	Functional Exercise at Each Stage	Objective of Each Stage
1. No activity	Symptom limited physical and cognitive rest	Recovery
2. Light aerobic exercise	Light jog or stationary cycling <70% maximum permitted heart rate No resistance training	Increase Heart Rate
3. Sport-specific exercise	Sprinting, soccer dribbling drills, etc. No head impact activities	Add movement, increase intensity
4. Non-contact training drills	Progression to more complex training drills (passing drills in football or soccer) Non-contact practice 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
6. Return to play	Normal game play	

For more information on concussions in sports visit <http://www.ohsaa.org/concussionresources>

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Return to Learn

No two concussions are identical. Therefore, it is important for each student be treated individually focusing on the symptoms they have. Your school nurse is a great resource to assist with communicating to teachers and dealing with symptoms throughout the school day.

The initial goals from an academic perspective for a student after they have sustained a concussion are to:

1. Maximize Rest
2. Minimize Educational Time Loss
3. Provide Appropriate Instructional Modifications

If a students' concussion is severe enough that they are not able to participate in normal school day activities modifications can be made. Below you will find a table outlining 5 different zones that could be considered when returning an athlete to the classroom. **Please note that excused absences from school can only occur when under the recommendation of a doctor.**

Zone 1 <i>No School</i>	Zone 2 <i>Partial school attendance</i>	Zone 3 <i>Attend full school day</i>	Zone 4 <i>Attend full school day</i>	Zone 5 <i>Full School participation</i>
-Stay home -No homework -Cognitive shut down <i>This includes limited tv/computer/phone usage to minimize visual stimulation</i> <i>As you progress you may begin working on homework in very small segments</i> -Stay in control of symptoms	-Instructional modifications -Limited/partial class attendance -Rest breaks during class -Limited class work/testing -Peer note taking	-Partial class attendance -Instructional modifications -Limited workload-mental & physical rest within the classroom	-Full class attendance -Limited instructional modifications -Increasing return to normal workload	-No instructional modification

For more information on returning to the classroom after a concussion visit <https://www.nationwidechildrens.org/specialties/concussion-clinic/concussion-toolkit/and-educators-guide-to-concussions-in-the-classroom>