

Bettendorf School District Return-To-Learn Guideline Following Concussion or Mild Traumatic Brain Injury (MTBI)

A student's best chance of full recovery from a concussion or MTBI involves two critical components: cognitive and physical rest. Both of these must occur for a quick and safe return to both school and physical activities. Continued research has focused on the fact that cognitive rest is essential to the quick resolution of concussion symptoms and healing within the brain. **New information also indicates that returning to normal activities such as school and routine is also beneficial. However, this return must not increase symptoms, however if symptoms are not increasing a student may be in school with symptoms as tolerated.** It is also noted that one should be asymptomatic, that is free of signs and symptoms of concussion or MTBI, and be fully returned to learning and school before physical activity is attempted. Once a student is engaged fully within all classes and is free of symptoms, a gradual return to activity is advised. A person cannot enter the Return to Activity or Return of Play Guidelines until they have fully returned to school as an academic learner.

It is important to note that the recovery from a concussion or MTBI is a very individualized process. Caution must be taken not to compare students with concussions as they progress through the recovery process.

It is strongly suggested that parents/guardians know and utilize this protocol when the student is evaluated by a physician, it is suggested that this information is shared with the physician during the initial visit if possible.

Definition of Concussion:

- **Concussion is defined as a brain injury and is defined as a complex pathophysiological process affecting the brain, induced by biomechanical forces. Several common features that incorporate clinical, pathologic and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include:**
 1. Concussion may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an "impulsive" force transmitted to the head.
 2. Concussion typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of minutes to hours.
 3. Concussion may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.
 4. Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course. However, it is important to note that in some cases symptoms may be prolonged.

The preceding definition is from the Consensus Statement on Concussion in Sport 4th International Conference on Concussion in Sport Held in Zurich, November 2012.

Sign and Symptom of a Concussion:

- Signs observed
 - Appears to be dazed or stunned
 - Is confused about assignment
 - Forgets plays
 - Is unsure of game, score, or opponent
 - Moves clumsily
 - Answers questions slowly
 - Loses consciousness (even temporarily)
 - Shows behavior or personality change
 - Forgets events prior to hit (retrograde amnesia)
 - Forgets events after hit (anterograde amnesia)

- Symptoms reported by athlete
 - Headache
 - Nausea or vomiting
 - Balance problems or dizziness
 - Double or fuzzy vision
 - Sensitivity to light or noise
 - Feeling sluggish, tired, or “foggy”
 - Change in sleep pattern
 - Concentration or memory problems
 - Numbness or tingling
 - Does not “feel right”
 - Irritable, Nervous and/or Sad
 - More emotional than usual
 - Sleep more/less than usual
 - Has trouble falling asleep

Additional Concussion Information and Definitions

Second Impact Syndrome (SIS) is also a very real concern and can be potentially catastrophic. According to the Center for Disease Control and Prevention (CDC) a repeat concussion that occurs before the brain recovers from the first, usually with a short period of time (hours, days, or weeks), can slow recovery or increase the likelihood of having long term problems. In rare case, repeat concussions can result in brain swelling, permanent brain damage, and even death. The CDC refers to this more serious condition as **Second Impact Syndrome**. SIS in short is suffering a second MTBI or concussion while the brain is recovering from an initial MTBI or concussion and thus potentially leading to a higher level of brain damage and catastrophic

consequences. SIS is believed to have been the cause of approximately 30-40 deaths over the last decade. The risk of SIS is real, and following a gradual return to play protocol after sustaining a MTBI or concussion can greatly reduce the chances of this potentially life threatening condition.

In addition, with every MTBI or concussion there is a risk of developing **Post-Concussion Syndrome (PCS)**. According to the Mayo Clinic, PCS is a complex disorder in which a combination of post-concussion symptoms may last for weeks and sometimes months after the injury that caused the initial concussion. Symptoms of PCS may include but are not limited to chronic headaches, fatigue, sleep difficulties, personality change, increased irritability, increased emotional feelings, sensitivity to light and noise, dizziness, and deficits in short-term memory and general academic functioning. PCS can be very disabling for an athlete, and may be permanent in some cases. The majority of athletes who experience MTBI or concussion are likely to recover fully without experiencing long term detrimental effects of MTBI or concussion.

Chronic Traumatic Encephalopathy (CTE) is a progressive degenerative disease of the brain found in individuals with a history of repetitive brain trauma, including symptomatic concussions as well as asymptomatic sub-concussive hits to the head. Several retired professional athletes have been diagnosed postmortem with CTE. Recent reports have been published of neuropathologically confirmed CTE in retired professional football players and other athletes who have a history of repetitive brain trauma. This trauma triggers progressive degeneration of the brain tissue, including the build-up of an abnormal protein called tau. These changes in the brain can begin months, years, or even decades after the last brain trauma or end of active athletic involvement. The brain degeneration is associated with memory loss, confusion, impaired judgment, impulse control problems, aggression, depression, and, eventually, progressive dementia. As serious as CTE is, it has also been reported that many former athletes show no symptoms of CTE or any other neurological disorder and have sustained the same number of sub-concussive hits to the head. The bottom line is CTE is real and can happen, but one never knows until much later in life due to the nature of CTE's lengthy progression in the brain.

Cognitive Stimulation includes activities such as driving, video games, computers, text messaging, cell phone use, loud and/or bright environments, television, reading and studying and mental focus in which the student may partake.

Physical Activity includes any type of sustained activity such as physical education, sports activities, and strength or cardiovascular conditioning, or even long walks. Any type of activity that could raise the heart rate or respiration of an individual beyond what they would have in normal activities of daily living.

Information for the Parent, Student, and Teachers

- It is recommended that students who are experiencing concussion-like symptoms be examined by their physician or qualified health care professional.
- ***For the Return to Learn Guideline to be initiated, the student must be evaluated by a healthcare professional and documentation must be provided to the school. This documentation may come from qualified medical professional the student sees outside the school setting or from within the school district, from district medical professionals, this includes Team Physicians, Certified Athletic Trainers, and School Nurses.***
- For every day the student is within Stages 1-3 of the following guideline, they will be granted the same number of days to complete missed academic work after they have reached stage 4.
- The student will be granted adequate time to complete missed academic work based on the amount of time needed for complete recovery. This amount of time will be determined jointly between the school district health care professionals and the teachers of the injured student.
- The teacher has the option of assigning the student a grade of incomplete (I) for the quarter, final and/or semester grade if needed to grant adequate time after the student is fully recovered to complete the needed academic work required.
- It is important that once the student has returned to school that they report to the Certified Athletic Trainer or School Nurse multiple times daily in order to monitor symptoms as well as to determine progression to the next stage within the Return-to-Learn Guideline and if necessary the Return-to- Activity/Play Guidelines. These symptoms checks are best done three times; before school, after or right before lunch, and finally at the end of the day prior to the student leaving for the day.
- A student may be asked to return home to rest cognitively and physically if symptom increase during the day and it is noted by the district medical professional. In these cases a parent/guardian will be notified as well as the school attendance office.
- As the student progresses through Stages 1-3, teachers should be prepared to apply “mastery learning” criteria within their subject matter. By identifying essential academic work, the student’s recovery will be aided by reducing anxiety levels related to the perceived volume of work that will be required once they are medically cleared to resume a full academic load.

- In most cases, if the student involved is a Bettendorf High School Student Athlete participating in school sponsored athletics the Certified Athletic Trainer will likely take the lead role of monitoring the student's return and recovery, and if the student is not a student athlete the School Nurse will like take the lead role of monitoring the student's return and recovery. It is also expected and noted that both the School Nurse and Certified Athletic Trainers work together to help insure that all students are receiving quality care and support as needed.

Return-to-Learn Guideline

Stage 1: No School Attendance, emphasize cognitive and physical rest

Characteristics

- Severe concussion symptoms at rest, thus a student should not be in a school setting and should stay home to cognitively and physically rest.
- No tests, quizzes, or homework should be given or done at home until student attends school and had met with school district medical professionals.
- Signs of Symptoms of Concussion or MTBI are likely present.
- Students may not be able to read from a book or computer for more than 10 minutes without an increase in symptoms.
- Teachers/Student Services provide student with copies of class notes (teacher or student generated).
- No Physical Activity

Progress to stage 2 when:

- Decreased Concussion Symptoms to levels in which the student finds it tolerable and can function at school with activities normally required in a school day (except physical activity as defined by the guideline).
- Ability to do light reading from a book or computer for 10 minutes without increased symptoms

***Students who remain in Stage 1 for more than one week should be reevaluated by a physician or qualified health care provider in order to continue academic modifications and to determine if additional medical treatments or evaluations may be necessary.**

*It is important that once the student has returned to school that they report to the Certified Athletic Trainer or School Nurse multiple times daily in order to monitor symptoms as well as to determine a student's readiness to progress to the next stage within the Return-to-Learn Guideline.

Stage 2: Return to School, option for modified daily class schedule

Characteristics

- Mild symptoms at rest, increasing with mental activity
- May reduce length of school day as symptoms warrant
 - Option: Obtain a “five minute pass” from the School Nurse/Certified Athletic Trainer in order to avoid noisy, crowded hallways between class periods: arranged by School Nurse/Certified Athletic Trainer
 - Option: Attend ½ days block 1 and 2 one day and block 3 and 4 the next.
- Wear sunglasses when viewing Smart Boards (Note Required)
- No tests, quizzes, or homework
- Provide student with copies of class notes (teacher or student generated)
- NO Physical Education Classes and/or sports activities
 - Option: If enrolled in Physical Education Classes the student may go to a quiet area assigned by school district medical professionals during Physical Education Class.
- Report multiple times daily to Athletic Trainer or School Nurse for symptom checks.

Progress to stage 3 when:

- Each of the student’s classes has been attended at least once.
- School activity does not increase symptoms in shortened days or modifications.
- Overall symptoms continue to decrease.

*It is important to note that the student may still be experiencing mild symptoms and still progress into Stage 3.

Stage 3: Full day of school, doesn’t include Physical Education or Athletic Performance

Characteristics

- Symptom-free at rest (usually meaning they start the day symptom free when they wake up in the morning)
- Mild to moderate symptoms increase with mental activity.
 - Option: Obtain a “five minute pass” from the School Nurse/Certified Athletic Trainer in order to avoid noisy, crowded hallways between class periods: arranged by School Nurse/Certified Athletic Trainer
- No tests, quizzes, or homework

- Provide student with copies of class notes (teacher or student generated)
- NO physical education classes and/or sports activities
 - Option: If tolerated and they don't cause increase symptoms alternative academic work may be required for Physical Education Class credit until student is cleared for physical activity.
- Report multiple times daily to Athletic Trainer or School Nurse for symptom checks.

Progress to stage 4 when:

- Symptom-free to start the school day
 - Student should report any return of symptoms with mental activity during their regular symptom checks.
- Completion of clinical exam conducted by the appropriate healthcare professional

**If the student is not able to progress past stage 3 after three weeks of time post injury has passed, where it is unlikely the student will be able to make up required academic work, School Administration, Student Services, Teachers, and District Medical Professionals and Parents/Guardians will discuss options and determine the best course of action for the student. It is possible to be withdrawn from classes and or have class load modified. In extreme lingering cases of concussion symptoms options for Section 504 Plans may be discussed. **

Stage 4: Full academic load and begin Return-to-Play/Activity Guideline

- Resumption of current academic responsibilities once symptoms have resolved completely as determined by the appropriate school district healthcare professional and student.
- In cooperation with Student Services and teachers, a plan may be created if needed for possible modification and the gradual completion of missed tests, quizzes, and homework.
- Teachers have the discretion to apply "mastery learning" criteria for their subject matter.
- It is recommended that the student does not take more than one test per day for the first week after full academic and school load return.
- **Students are not required to makeup missed Physical Education classes due to a concussion or MTBI.**
- After student is asymptomatic for a full 24 hours in which they attend a normal day of school without modifications, gradual resumption of physical activity may resume

- Students will return to Physical Education classes and follow the Return-to-Activity protocol under the direction of the School Nurse and/or Certified Athletic Trainer. Conversations will need to take place so that Physical Education teachers understand the restrictions and progression of the student back to full activity.
- Bettendorf High School Student athletes will follow the Return-to-Play protocol under the administration of the Certified Athletic Trainers after school or a time designated by the Certified Athletic Trainers, this includes out of season athletes. Bettendorf High School Student Athletes will not be asked to partake in physical education classes if enrolled until fully cleared for their sports through the Certified Athletic Trainers.
- Report daily to Certified Athletic Trainer or School Nurse for Symptom Checks, in addition they should report if symptoms re-occur at any time during the school day or return to activity/play guideline or activities assigned within the guideline.

Recommended Follow-Up

- Students are encouraged to meet with student services and teachers regularly to discuss progress, grades, and status of make-up work.
- The student is encouraged to meet with the Student Services, Certified Athletic Trainers, School Nurse, or a physician to review any recurring symptoms, disrupted sleep habits, or emotional concerns.

Full Return to Physical Activity/Play

- As noted earlier Bettendorf High School Student Athletes will follow the Return to Play Guidelines for Athletes as directed by the Certified Athletic Trainers and the Team Physicians.
- Return-to-Physical Activity (Physical Education/Marching Band Activities) will be followed prior to return to full participation in physical education and or activities that are school sponsored that require a sustained activity level in which the heart rate and respiration would increase past normal activity of daily living activities.
- There are 4 steps of activity with increasing intensity that must be completed without increasing or recurring concussion symptoms. Each step will take place 24 hours following the previous step. If symptoms return during any step, a 24 hour period of rest is required before repeating that step. For Bettendorf High

School Student Athletes, this protocol will be under the supervision of the Certified Athletic Trainer.

- **Step 1:** Light aerobic activity including stationary bike at 70-75% of max exertion.
- **Step 2:** Ground Based Activity including any of the following: jogging for 15 minutes, or elliptical at level 7 or higher for 20 minutes. The distance and intensity should be that of an individual running a 10 minute mile or faster.
- **Step 3:** Non-Contact Full Participation including full calisthenics, running or cardiovascular exercise, weight training, and other physical activities that may be required.
 - **NO Battle Games such as dodge ball or mat ball where balls may hit the student in the head.**
 - **NO Games/Activities that the student may collide or run into structures or another student.**
- **Step 4:** Full unlimited participation in all activities and physical education requirements.

If you have additional questions, please contact the Student Services, the School Nurse, or the Certified Athletic Trainers.