

**Return to Learn after a Concussion:  
A Guide for Teachers and School Professionals**

With the increasing prevalence of concussions, specific protocols for returning a student to learning after a concussion is essential. Because students typically appear well physically following a concussion, educators, school administrators, and peers may not fully appreciate the extent of physical and cognitive symptoms experienced by a student with a concussion. The lack of apparent symptoms may make it difficult for school officials to recognize the need for academic accommodations for a student diagnosed with a concussion (1).

**What is a concussion?**

A concussion is a type of brain injury resulting from a bump, blow, or jolt to the head that causes the head and brain to move rapidly back and forth. A direct blow to the head is not required to cause a concussion; this type of injury can result from a hit to the body that transmits force to the head. The sudden, forceful movement can cause the brain to bounce around or twist in the skull, stretching or damaging the brain cells and causing chemical changes in the brain. Concussions affect people differently both physically and cognitively. Many students will recover within a few days or weeks and only experience brief symptoms. With a more serious concussion, symptoms can be prolonged and persist for many months or more (2,17). Additionally, research has suggested age plays a role in recovery. Younger students tend to experience more prolonged symptoms than older students. Thus, it is important not just for high schools but also for elementary and middle schools to have return-to-learn protocols that provide academic staff with guidance about how to provide appropriate classroom and learning plan accommodations for students diagnosed with concussions (16,18).

Though a concussion may seem to be an 'invisible injury', a concussion can affect a student in many different ways: physically, cognitively, emotionally and with sleep.

**Concussion Symptoms**

Physical	Cognitive	Emotional	Sleep
Headache	Feeling mentally foggy	Irritability	Trouble falling asleep
Dizziness	Feeling slowed down	Sadness	Sleeping more than usual
Balance difficulties	Difficulty concentrating	Nervousness	Sleeping less than usual
Nausea/vomiting	Difficulty remembering	More emotional than usual	Drowsy
Fatigue	Difficulty focusing		Altered sleep schedule
Sensitivity to light			
Sensitivity to noise			
Visual Changes			

Concussion symptoms can significantly impact a student's ability to learn. Physical symptoms such as headache, dizziness, and visual changes, may inhibit a student's ability to focus and concentrate. Cognitive symptoms may impact the ability of the student to learn, memorize and process information as well as stay on task with assignments and tests. Struggling with schoolwork may actually cause symptoms to increase. Students may experience feelings of frustration, nervousness and/or irritability both as a direct result of concussion and due to resulting academic difficulties. Altered sleep schedules may result in fatigue and drowsiness throughout the day. Inadequate sleep can exacerbate the magnitude of symptoms the student may experience (5).

Knowledge about the potential effects of concussions on learning, and appropriate management of the return-to-learn process, is critical for helping students recover from a concussion. Concussions are both a medical and educational concern. Assessing problems with learning and school performance, and then making appropriate and necessary changes to a student's learning plan is a collaborative effort between the student's physician and the academic leaders at his/her school (4).

Of note, treatment and recovery from a concussion is an individualized process. Caution must be taken not to compare students diagnosed with concussions. Because every brain and every student are different, every concussion is different. Some students may not miss any school and may need relatively few accommodations. Others may endure several months of prolonged symptoms that can significantly affect academic performance and require extensive accommodations at school (3,4). The severity of a concussion is measured by how long the symptoms last. Thus, it is not possible to know how severe a concussion is until the student is fully recovered (1,11).

Maximizing a student's recovery potential following a concussion depends on timely implementation of two critical components: cognitive rest and physical rest. There is increasing evidence that using a concussed brain to learn may worsen concussion symptoms and prolong recovery. The goal during concussion recovery is to avoid overexerting the brain to the level of triggering or worsening symptoms. Determining the appropriate balance between the amount of cognitive exertion and rest is the hallmark of the student's learning plan and crucial for facilitating recovery (1,2,3). This balance is different for each concussion. Therefore, an individualized plan for returning to learn with accommodations is required, and should be frequently monitored and updated to allow for the student to progress academically as concussion symptoms improve (12).

#### **How can a concussion affect school performance? (18)**

- Slower processing speed
- Lapses in short term memory
- Reduced/impaired concentration
- Slower to learn new concepts
- Shorter attention span
- More difficulty planning, organizing and completing assignments
- Slower reading

- Difficulty with reading comprehension

#### **Elementary School- (Adapted from Concussion in the Classroom, 14)**

Compared to older students, elementary aged children are more likely to complain of physical problems or misbehave in response to cognitive overload, fatigue and other concussion symptoms.

#### **Middle School-**

Peer relationships are very important to middle school students. This age group can be extremely sensitive to being different. Middle school students may try to minimize symptoms so as not to stand out. At this level, executive functioning such as goal setting and planning ahead is in greater demand. Therefore, time management of assignments and tasks may have a greater impact on academic performance.

#### **High School-**

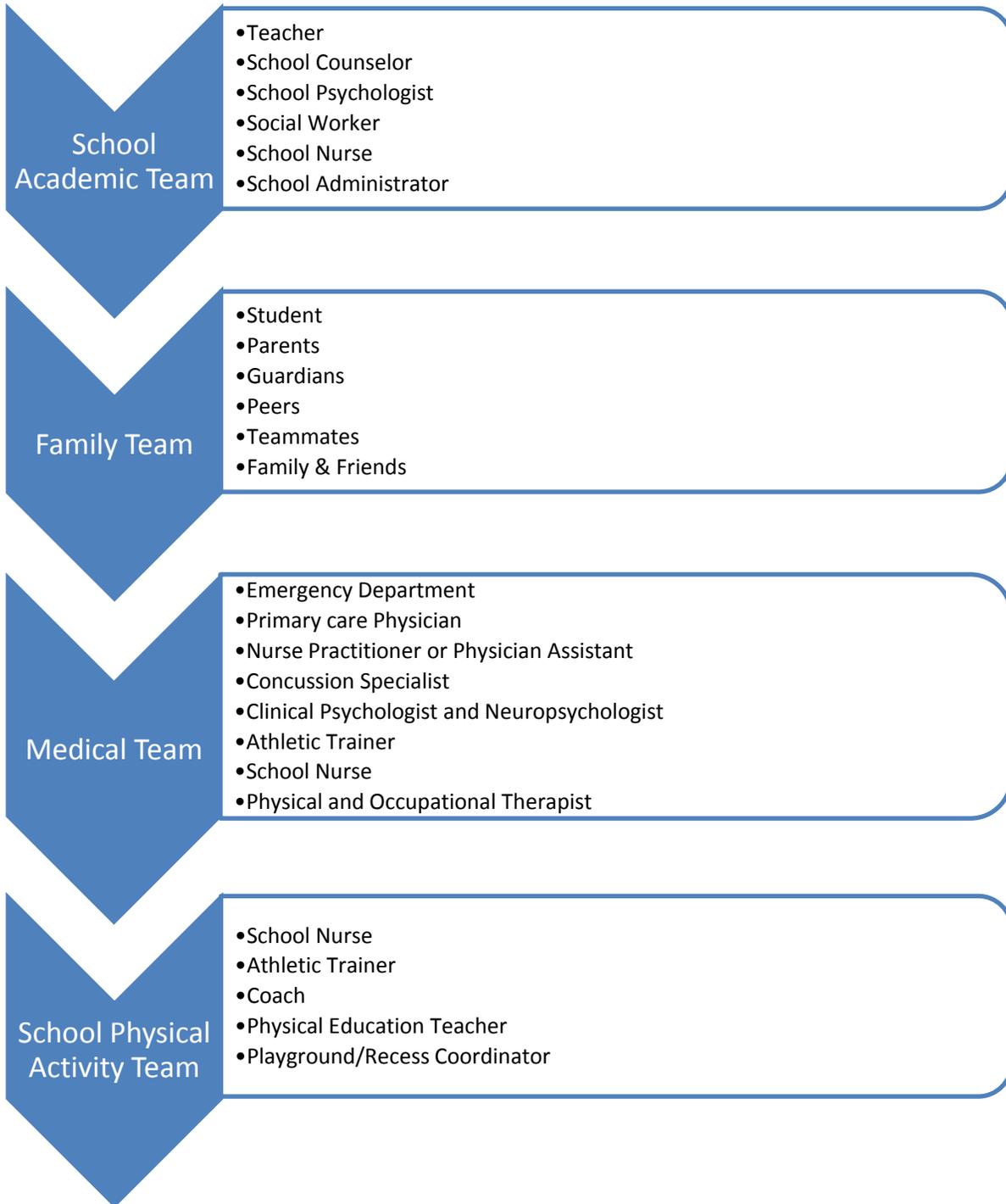
High school students are often very busy. Many students are enrolled in advanced classes and have one or more extra-curricular activities. Therefore, prioritizing activities in the student's learning plan and reducing overall demands becomes especially important with the high school student in order to reduce concussion symptoms.

#### **When is a student ready to return to school after a concussion?**

A student with a concussion should be evaluated by a licensed healthcare professional that has experience managing concussions for guidance about when it's safe to return to school as well as recommended appropriate levels of cognitive and physical activity throughout the recovery process.

Providing appropriate support for a student returning to school after a concussion requires a collaborative team approach:

**Example of a Multidisciplinary Team to Facilitate “Return to Learning”**



It is important for school administrators to identify a staff member on the concussion management team who will function as a case manager or concussion management leader, such as a school nurse, athletic trainer, school counselor or other identified school professional. This person's role is to advocate for the student's needs, implement appropriate academic accommodations and serve as the primary point of contact for the student, family, and all members of the concussion management team (1,2). The case manager is responsible for ensuring all are informed and understand how to implement the student's accommodations as outlined by the student's medical team.

### **Return-to-Learn Framework: (3,5,13)**

- To initiate the Return-to-Learn protocol, the student must be evaluated by a licensed healthcare professional and documentation provided to the school outlining cognitive and physical restrictions.
- The protocol should emphasize allowing the student to participate in the school day in a modified fashion so as not to worsen symptoms. Determining "how much is too much" may be a trial and error process.
- The student should be granted adequate time to complete missed academic work following recovery
- The student should report to their case manager or school liaison daily in order to monitor symptoms and assess how the student is tolerating specific school accommodations (a symptom checklist is recommended), as well as assess how teachers and staff are implementing the modified learning plan.
- **Example of a Symptom Checklist**

<https://www.luriechildrens.org/en-us/care-services/specialties-services/institute-for-sports-medicine/concussion-program/Documents/head-injury-symptom-scale.pdf>

- Following a concussion, students may not be ready to complete all required assignments. Educators can utilize a "mastery learning" approach emphasizing key concepts taught in brief units for each subject. Educators should assign work that promotes mastery of these concepts but should still limit non-essential assignments. Prioritizing essential course work helps students learn important subject matter while alleviating anxiety about making up missed assignments.

### **Phase 1: No School/Complete Cognitive and Physical Rest**

- **Symptom Severity:** In this phase, the student may experience high levels of symptoms that prohibit the student benefiting from school attendance and may cause symptoms to increase in intensity. During this stage, physical symptoms tend to be the most prominent and may interfere with even basic daily tasks. Many students are unable to tolerate being in the school environment due to severe headache, dizziness or sensitivity to light or noise.
- **Treatment:** Emphasis on cognitive and physical rest to allow the brain and body to rest as much as possible.
- **Intervention Examples:**
  - No School

- Avoid activities that exacerbate symptoms. Activities that commonly trigger symptoms include reading, video games, computer use, texting, television, and/or loud music.
- Other symptom “triggers” that worsen symptoms should be noted and avoided in the effort to promote healing
- May participate in light aerobic activity as long as it does not worsen symptoms or put them at risk for further injury (ie, brisk walking, peddling a stationary bike) (20)
- No tests, quizzes or homework
- Provide students with copies of class notes (teacher or student generated)

## Phase 2: Part-Time School Attendance with Accommodations:

- **Symptom Severity:** In this phase, the student’s symptoms have decreased to manageable levels. Symptoms may be exacerbated by certain cognitive activities that are complex or of long duration. Often students can do cognitive activities but only for very short periods of time (5-15 minutes) so need frequent breaks to rest and “recharge their batteries”.
- **Treatment:** Re-introduction to school. Avoid environments and tasks that trigger or worsen symptoms. In the first few days of returning to school the goal is not to immediately start catching up on the missed work or learn new material. Rather the initial goal is simply to make sure the student can tolerate the school environment without worsening symptoms. This means the first few days often include just sitting in class and listening (no note-taking or reading). Once the student can tolerate this, he/she can try short intervals (5-15 minutes) of cognitive work per class. Again, determining how much is too much is a trial and error process.
- **Intervention Examples:**
  - Part-time school attendance, with focus on the core/essential subjects and/or those which do not trigger symptoms; prioritize what classes should be attended and how often. Examples: (1) half-days, alternating morning and afternoon classes every other day; or (2) attending every other class with rest in the nurse’s office, library or quiet location in between.
  - Symptoms reported by the student should be addressed with specific accommodations
  - Eliminate busy work or non-essential assignments or classes.
  - Limit or eliminate “screen time” (computers, phones, tablets, smart boards), reading and other visual stimuli, based on the student’s symptoms.
  - Provide student with copies of class notes (teacher or student generated)
  - No tests or quizzes.
  - Homework load based on symptoms. There should be no due dates on homework assignments. This allows students to work at a pace that does not exacerbate symptoms and reduces their anxiety about completing missed assignments. Many students have heightened anxiety during concussion recovery and due dates exacerbate this.
  - Allow the student to leave class a few minutes early to avoid noisy, crowded hallways between class changes.

- No PE or recess or participation in athletics
- If this phase becomes prolonged and/or the student is unable to tolerate the school environment or do any work for even short periods of time, a tutor can be helpful (either in school or at home) to implement oral learning at a pace that does not worsen symptoms. A tutor can also help students organize their work and plan how they will spend their limited time studying (i.e. which assignment should I do first, second, third, etc.), as many students are unable to do this basic “executive function” task during concussion recovery.

### **Phase 3: Full-Day Attendance with Accommodations:**

- **Symptom Severity:** In this phase, the student’s symptoms are decreased in both number and severity. They may have intervals during the day when they are symptom-free. Symptoms may still be exacerbated by certain activities.
- **Treatment:** As the student improves, gradually increase demands on the brain by increasing the amount, length of time, and difficulty of academic requirements, as long as this does not worsen symptoms.
- **Intervention Examples:**
  - Continue to prioritize assignments, tests and projects; limit students to one test per day or every other day with extra time to complete tests to allow for breaks as needed based on symptom severity
  - Continue to prioritize in-class learning; minimize overall workload
  - Gradually increase amount of homework
  - Reported symptoms should be addressed by specific accommodations; Accommodations can be reduced or eliminated as symptoms resolve
  - Physical activity regimen as prescribed by student’s medical provider. No contact sports are allowed until the student is completely symptom-free completing full days at school and requires no academic accommodations, and has received written clearance from a licensed health care professional.

### **Phase 4: Full-Day Attendance without Accommodations:**

- **Symptom Severity:** In this phase, the student may report no symptoms or may experience mild symptoms that are intermittent.
- **Treatment:** Accommodations are removed when student can participate fully in academic work at school and at home without triggering symptoms.
- **Intervention Examples:**
  - Construct a reasonable step-wise plan to complete missed academic work; an extended period of time is recommended in order to minimize stress
  - Physical activities as specified by student’s medical provider (same as phase 3)

### **Phase 5: Full School and Extracurricular Involvement:**

- **Symptom Severity:** No symptoms are present. The student is consistently tolerating full school days and their typical academic load without triggering any concussion related symptoms.
- **Treatment:** No accommodations are needed
- **Interventions:**
  - Before returning to physical education and/or sports, the student should receive written clearance and complete a step-wise return-to-play progression as indicated by the licensed healthcare professional. For more information on “return to play” guidelines, please visit [www.luriechildrens.org/sports](http://www.luriechildrens.org/sports) & [www.cdc.gov/headsup](http://www.cdc.gov/headsup)

### **Class/Subject Accommodation Examples:**

#### **History:**

- Books on Audiotape
- Provide detailed class notes to allow student to listen and not be consumed with note-taking during class
- Oral discussion for learning and oral test-taking preferred to written work

#### **Language Arts, English & Writing:**

- Books on Audiotape
- Reduce overall amount of written and typed assignments as screens and annotating may be bothersome to the concussed student. Speech-to-text software programs can be helpful for writing papers or annotating.
- Oral discussion for learning and oral test-taking preferred to written work

#### **Math:**

- Reduce homework assignments to the least amount possible to demonstrate mastery learning concept
- Provide outline of necessary steps to complete problem (concussed students often experience difficulty remembering and may leave out pertinent steps)
- Student should be given extra time to complete in-class assignments and homework
- Oral discussion for learning and oral test-taking preferred to written work

#### **Science:**

- Books on Audiotape
- Detailed class notes to allow student to listen and not be consumed with note-taking during class
- Hands-on learning may be helpful
- Oral discussion for learning and oral test-taking preferred to written work

- Speech-to-text software programs can be helpful for writing lab reports and assignments.

#### **Additional Specific Accommodation Examples: (5,14)**

- Extending time on testing and assignments to allow for slower processing speed especially if there is a significant amount of reading and screen time. Students recovering from concussion have limited endurance and therefore may only be able to focus and concentrate on tasks for short intervals (5-15 min) before triggering symptoms. Symptoms are not just limited to physical symptoms. If there is a lack of comprehension despite 2 or 3 attempts, even without a headache, the student should take a break.
- Providing a quiet place for testing to minimize distraction
- Offering preferential seating (usually in the front of class or away from windows) to minimize distraction and allow better monitoring of the student
- Class information and corresponding assignments should be divided into manageable blocks to minimize cognitive load.
- Reduce light sensitivity by allowing the student to wear a hat or sunglasses in the classroom
- Allow breaks every 15 minutes for prolonged reading or screen time
- Allow the student to eat lunch in a quiet location
- Avoid assemblies, pep rallies, athletic events and other events with loud noise and/or bright lights

If concussion symptoms increase, it usually means the student is reaching a point of over-exertion and needs a break. Some students may only need periodic breaks throughout the school day while others may need more frequent breaks depending on the severity of symptoms.

#### **Follow-Up Interview (3)**

Students are encouraged to meet with their case manager regularly to discuss progress, grades and status of make-up work. Additionally, the student's case manager or concussion management leader should conduct an exit interview with the student within a week after he/she returns to full academic activity.

#### **Ensuring a Student's Return to Learning is Successful: (Adapted from School Administrators Guide to Academic Concussion Management, 4)**

- Education of school personnel about the goals of integrating a student into the classroom following a concussion is essential to reduce the likelihood of a student causing permanent damage to his/her academic record due to a concussion.
- Educate school staff about how concussions affect learning. Schools should take steps to ensure their staff understands the institutional or district procedures regarding return-to-learn policy.

- Distribute written responsibilities and expectations to each member of the concussion management team. Take time to explain the return to learn process to each member of the concussion management team prior to initiating a student's post concussion academic plan can lead to better compliance.
- Emphasize that each member of the concussion management team has an important role and responsibility for ensuring success. Inadequate participation from one member of the concussion management team can affect the student's entire return-to-learn plan.

### **Privacy**

The return-to-learn team should recognize that communication is essential for the success of the management plan. However, they should be aware that a student's medical and academic information is considered private and is protected by the Health Insurance Portability and Accountability Act (HIPAA) (1,8) and the Family Educational Rights and Privacy Act (FERPA) (1,9). The team should have a clear understanding of who is allowed to receive information regarding a student's medical and academic status. Team members should only discuss what is absolutely necessary to manage a student's return-to-learn plan (4). In compliance with requirements of the Illinois School Student Records Act that regulates how schools may share a "school student record" with a non-school employee (19), the student's parent or guardian (or student if s/he is over 18) must complete a Release of Medical Information (ROMI) if they would like the physician to speak with school staff about the student's medical care and provide guidance about how to implement the recommended accommodations. This release can be signed at the physician's office.

### **Documentation**

The student's case manager or assigned member of the concussion management team should take care to document the specifics of the learning plan, noting the dates when changes are made and the student's response in terms of symptoms. He/she should also record any instances where the students, parent, or school staff do not follow the recommended accommodations. This documentation should be kept in in compliance with the school districts policy regarding privacy.

Concussion symptoms can be subjective in nature, and therefore, it can be difficult to know when a student is reporting symptoms accurately. Communication and documentation among team members will help identify students who may be exaggerating symptoms. If a concern about the legitimacy of the student's complaints arises, the concussion management team must meet to discuss the student's situation and determine the appropriate course of action. In these instances, direct communication between the return-to-learn team and treating physician is imperative (4).

### **Formal Education Plans:**

For students with prolonged symptoms who will require accommodations for several months, a formalized program may be implemented to ensure that the student's specific educational needs are being met by the school (1,7). Parents can work with school leaders to develop a 504 plan or individualized education program (IEP). The process is time intensive

and requires extensive documentation, but does provide a legal document that describes the specific educational goals for the student and outlines the necessary accommodations to achieve them. (4).

- **504 Plan:** Students with persistent symptoms and who require assistance to participate fully in school may be candidates for a 504 plan. A 504 plan will describe modifications and/or accommodations necessary to assist a student return to pre-concussion performance levels. This plan may specify that the student receive classroom and/or environmental adaptations, temporary curriculum modifications and/or behavioral strategies to assist with the learning plan (1,2).
- **Individualized Education Plan (IEP):** Some students experience prolonged symptoms that adversely affect school performance and necessitate help in many areas of study. These individuals may benefit from an Individualized Education Plan (IEP). An IEP can be useful to formalize accommodations such as adjusting assignments, reducing the student's workload, modification of testing procedures and changes to the learning environment. Most students will not require an IEP. An IEP should be considered for students with chronic deficits that lead to impaired school performance (1,2).

The majority of students with a concussion will not require a 504 or IEP; however, a small percentage of students with chronic cognitive, physical or emotional deficits may require this level of support.

**Example of School Accommodation form provided by a Licensed Healthcare Professional:**

<https://www.luriechildrens.org/en-us/care-services/specialties-services/institute-for-sports-medicine/concussion-program/Documents/school-accommodation-letter-pdf.pdf>

**Additional Resources:**

Ann & Robert H. Lurie Children's Hospital of Chicago	<a href="http://www.luriechildrens.org/sports">www.luriechildrens.org/sports</a>
Centers for Disease Control (CDC)	<a href="http://www.cdc.gov/concussion">www.cdc.gov/concussion</a>
American Academy of Pediatrics (AAP)	<a href="http://www.aap.org">www.aap.org</a>
Safe Kids USA	<a href="http://www.safekids.org">www.safekids.org</a>

A 30 minute online educational module of the content outlined in this Return to Learn Guide is available at [www.luriechildrens.org/rtl](http://www.luriechildrens.org/rtl)

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