



Academic problems are common after concussion. Helping students as they return to the classroom is just as important as helping them return to sports.

For more information or to schedule an appointment call: 315-464-8986

UPSTATE

UNIVERSITY HOSPITAL

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For more information about brain injuries:



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CONCUSSION IN THE CLASSROOM



A guide for students, parents, teachers, nurses, guidance counselors, school psychologists, and other school staff

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Myths about concussion. . .

- If you weren't knocked unconscious, then you didn't have a concussion
- If there's no visible injury, everything's okay
- Most concussions occur in sports
- Once the headache goes away, everything will be fine
- Everyone gets better in two weeks
- You should play through the pain—get back in the game!

Facts about concussion. . .

- You don't have to lose consciousness to have a concussion
- Symptoms of a concussion can last hours, days, weeks, or months
- More than a million Americans sustain a concussion each year
- Motor vehicle crashes and falls are the most common causes of concussion
- Concussion can cause problems in school, work, and social activities
- Returning to activities where there is increased chance of head injury, such as contact or collision sports, before you have completely recovered from a concussion can increase the risk of reinjury and cause more severe or prolonged symptoms

What is a concussion?

Concussion is a mild traumatic brain injury that occurs when a blow or jolt to the head disrupts the normal functioning of the brain. Some people lose consciousness after a concussion, but most do not. After a concussion, the person is often dazed or confused, and may not remember what happened.

What are the symptoms of concussion?

Concussion causes physical, cognitive, and emotional symptoms that last for a varying amount of time. Some symptoms show up right away, but others may not appear or be noticed for days or weeks after injury. Likewise, some symptoms might resolve fairly quickly, but others—especially fatigue—can persist much longer. The number and severity of symptoms, the speed of recovery, and the impact of symptoms on academic functioning or other activities will be different for each student.



SYMPTOMS

Physical Symptoms. . .

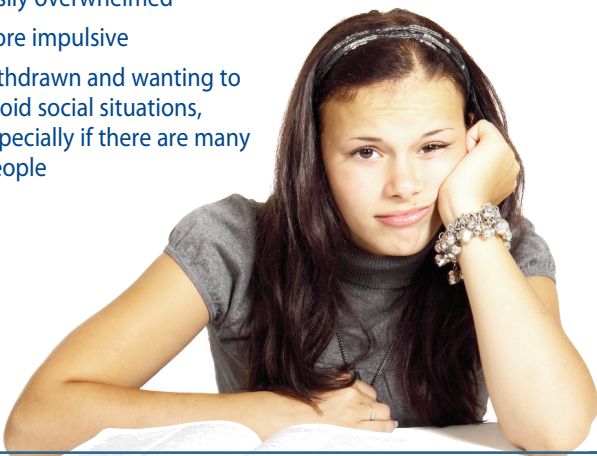
- headache
- nausea
- lack of energy and constantly feeling physically and mentally tired
- dizziness, light-headedness, or a loss of balance
- blurred or double vision and sensitivity to light
- increased sensitivity to sounds and ringing in the ears
- change in sleep patterns, such as waking up a lot at night or sleeping too much

Cognitive Symptoms. . .

- difficulty concentrating and paying attention
- trouble with learning and memory
- problems with word-finding and putting thoughts into words
- easily confused and losing track of time and place
- slower in thinking, acting, reading, and speaking
- easily distracted
- trouble doing more than one thing at a time
- lack of organization in everyday tasks

Social and Emotional Symptoms. . .

- mood changes including irritability, anxiousness, and tearfulness
- decreased motivation
- easily overwhelmed
- more impulsive
- withdrawn and wanting to avoid social situations, especially if there are many people



How do concussion symptoms show up in school?

After concussion, a student may have one or more concussion symptoms that cause difficulties in the classroom. For example, the student might. . .

- get tired easily in class and over the course of the day
- be bothered by bright fluorescent light in the classroom or loud noise in the cafeteria
- be easily distracted
- have trouble doing more than one thing at a time, such as listening to the teacher while also taking notes
- take longer and need more repetition to learn new material
- remember something one moment but not recall the same thing another time
- be easily overloaded, especially with a steady flow of information
- read more slowly due to difficulty with comprehension
- have a headache that develops or worsens with concentration
- feel dizzy after sudden movement or lose her balance more easily
- have trouble organizing and remembering homework
- lose track of time
- get lost or have trouble finding his way around
- get frustrated or irritated more easily, especially if overloaded.

Concussion is an **invisible injury**. Because of this, changes in a student's thinking, learning, and behavior may be blamed on other causes. For example, mental fatigue or difficulty concentrating may be misinterpreted as laziness or disinterest. Students themselves might wonder if they're "crazy" because they can't see or feel the brain injury, only its effects. Pressures to return to sports or other activities before complete recovery may cause the student, parent, coach, or teacher to minimize concussion symptoms.

In general, concussion affects **mental stamina** more than intellectual ability. This is because the injured brain must work much harder to accomplish anything, and so the student gets tired more easily. Fatigue and overexertion will often be accompanied by a temporary worsening of post-concussion symptoms.

How can I help?

Academic difficulties may continue for quite a while after concussion, and can contribute to poor adjustment and behavioral problems. Because of this, teachers and other school staff play an important role in a student's recovery from concussion.

A team approach to the student recovering from concussion is most helpful. It may be useful to designate a single person in the school to take the lead in communicating with parents, teachers, staff, and medical professionals. Sometimes a meeting is needed to discuss the student's symptoms and to arrange for accommodations.

Changes in thinking, learning, and behavior after concussion can be subtle and hard to detect. If current teachers and staff have had little pre-concussion contact with the student, then talking to others who worked with the student before the injury can help to clarify how post-concussion symptoms might be affecting current learning and behavior.

Teachers' sensitivity and understanding toward the student is critical. Teachers might want to think of ways to monitor progress and focus on improvements rather than on the symptoms themselves.

The physical safety of the student is especially important. If a student sustains another concussion while still recovering from a previous one, then post-concussion symptoms can be worse and last longer. Therefore, any activity that unnecessarily increases the risk of another concussion should be avoided until the student is recovered. This would include contact and collision sports, some recreational sports such as biking or skiing, and certain high-risk physical education activities. As symptoms improve, students can often return to physical activities where there is low risk of re-injury before they are fully recovered. In fact, exercise can actually be beneficial, as long as it does not overly aggravate concussion symptoms such as headache or dizziness.

Should students stay home from school to recover from concussion?

Students recovering from concussion often find that the noise, light and commotion at school will

aggravate symptoms, as will having to focus and concentrate in class. It's reasonable to keep students out of school immediately after concussion, and then have them return in a gradual way based on how much they can tolerate. It's a good idea to have students check in with the school nurse a couple of times each day during the first few days back at school, and to provide rest breaks or a shortened day as needed. For a small number of students, the transition back to a regular school day will be difficult and delayed by more severe symptoms such as headache, vision problems, or fatigue.

How can I adapt the classroom?

Listed below are some general recommendations that might be helpful for the student with concussion symptoms. Reports from the hospital or medical team should also be reviewed for specific issues and suggestions for each individual student. Most importantly, ask the students themselves about how the concussion might be affecting them at school and what you can do to help. Reducing the academic stress a student feels might be as much or more important than reducing the academic demands.

What are some general strategies?

After concussion, the most significant problem for the student tends to be a decrease in mental energy, like a battery that runs down much quicker than before. The student's energy level will also be more variable due to injury, so what's manageable one day is not necessarily manageable the next. Importantly, it is usually not one specific subject or activity that causes fatigue, but the combined demands over the course of the day or week.

When concussion symptoms start to get worse, it usually means the student has reached the point of over-exertion and needs a break. Some students may need only a short break in the middle of the day, whereas others might need a shortened school day.

The most important accommodations that can be made for the student are:

- reduce schoolwork demands to a level that is manageable for the student, including reduced homework and, if necessary, reduced courseload
- schedule rest periods and provide the student with a calm and quiet place to take a break or a nap

- allow the student to eat lunch in a quiet room with one or two friends rather than in a crowded and noisy cafeteria
- remove the student from recess and physical education activities where there is an increased risk of head injury—especially any contact or collision sports—until he/she has recovered

Substituting mental activity for physical activity is not recommended. Supervised light exercise (after medical clearance) that does not aggravate symptoms can be beneficial.

While it is important to limit activity to help manage concussion symptoms and promote recovery, it is equally important to encourage students to engage in as much normal activity as they can. This includes exercise, spending time with friends, and using a phone or computer. If activities are overly restricted, then students may end up feeling more isolated and abnormal than necessary, which is not helpful.

Some other general strategies include:

- extending time on tests and assignments to allow for slower processing speed, especially if there is a significant reading demand
- providing a quiet room in which to take tests to minimize distraction
- offering preferential seating to minimize distraction and allow better monitoring of attention and energy level
- reducing light sensitivity by allowing the student to wear sunglasses or a hat with a visor in class
- breaking information and assignments down into manageable chunks
- helping the student to stay organized such as keeping track of homework assignments
- reducing confusion and the chance of falling in crowded hallways by having the student change classes with a buddy (leaving class a few minutes early when the hallways and stairwells are less crowded is another option, but less preferable because the student tends to feel singled out or different from other students)

What can the school nurse do to help?

The school nurse often plays an important role in the student's recovery from concussion. To begin with, the nurse's office is often used as a place for students to go for a rest break when they are tired or when other symptoms such as headache, nausea, or irritability flare up. These symptoms will usually improve if the student is able to rest in a quiet and darkened place—which may or may not be in the nurse's office itself.

The school nurse can help to monitor the student's symptoms and recovery. If medication is prescribed by the student's doctor, the nurse may help to manage medications in the school setting. Headache may respond to over-the-counter analgesics such as acetaminophen or ibuprofen. In some cases prescriptive medications are used. Poor mental stamina and poor attention are sometimes treated with a neurostimulant. A variety of medications may also be prescribed to improve sleep and emotional control, or to alleviate other post-concussion symptoms. Some of the medications that might be used include the following:*

- amitriptyline (Elavil®)
- nortriptyline (Pamelor®)
- topiramate (Topamax®)
- valproic acid (Depakote®)
- sertraline (Zoloft®)
- methylphenidate (Ritalin® or Concerta®)

** This information is being provided for informational purposes only and should not be considered medical advice or direction. Students should receive care under the direction of their own physician.*

Students who are recovering from a concussion are at increased risk for sustaining another concussion, which can worsen symptoms and hamper recovery. They will often be given a note restricting them from participating in risky sports or physical education activities for a period of time. If there is any question of possible re-injury, the student should be immediately referred for medical reevaluation.

How can I help with...

Attention and concentration problems?

- use short and specific instructions and assignments, and be sure they get written in the student's planner or assignment book
- be alert to when the student's attention drifts and use visual or verbal cues to redirect her attention without appearing to single her/him out
- allow rest breaks if the student is having particular difficulty sustaining attention
- use color coding and underlining to focus attention on important points
- remove unnecessary distractions in the classroom (limit items on desk, etc.)
- facilitate transitions from one topic or task to the next

Comprehension and memory problems?

- provide an overview or outline of material to be learned
- use a tape recorder to record lessons (ideally placed on the teacher's desk), or provide teacher-generated notes
- reinforce lessons with visual images
- allow the use of fact sheets in order to help reduce the demand on memory
- encourage the student to restate information in his/her own words
- teach the student to use mnemonic devices, rehearsal, repetition, association, chunking, and mental visual images to help memorize material
- teach the student to identify the "wh" questions (who, what, where, when, and why) before reading the material
- help the student relate new information to what she/he already knows
- use multiple-choice and open-book tests to minimize retrieval demands

Executive functioning problems?

- assist in planning and sequencing events
- use diagrams, time lines, and charts to organize information and activities
- encourage use of organizational strategies such as lists, journals, schedules, assignment sheets, or planner, and keep these in a single place

- encourage goal-setting and self-monitoring of progress towards goals
- encourage the student to pay attention to time
- provide feedback more frequently

Visual and auditory processing problems?

- provide copies of notes prior to class to reduce demands on visual tracking (moving back and forth between the blackboard and note paper) and auditory processing
- check the student's comprehension of directions or test questions
- encourage strategies to improve visual tracking such as using a ruler

Behavioral, emotional, and social problems?

- don't put the student on the spot such as asking her to present in front of the class or asking him to answer a question when he has not raised his hand
- when the student is frustrated or over-stimulated allow the student to leave the classroom and go to a pre-arranged location where she/he can rest quietly
- encourage the student to seek help when needed, and allow time for this
- monitor the student's peer relations
- prepare the student for changes and transitions, such as by helping to set expectations or rehearsing new routes and procedures





How does the grade level of the student make a difference?

Elementary school...

Compared to older students, elementary school children are more likely to complain of physical problems or act differently in response to cognitive overload, fatigue, and other concussion symptoms. Because of this, communication and collaboration among school staff, parents, and medical professionals is especially important in identifying and managing post-concussion symptoms and academic difficulties. Also, the student's teacher, parent, or guardian may want to talk to classmates about the student's injury so they understand that it is not contagious or life-threatening.

Middle school...

Peer relations are very important to middle school students. They can be extremely sensitive to being different and may try to minimize symptoms so as not to stand out. It is therefore particularly important that parents, teachers, and medical professionals communicate with each other and monitor the student's academic and social functioning. The demands on executive functioning—such as setting goals and planning ahead—are also much greater than in elementary school, so organizational problems may have a greater impact on academic performance.

High school...

High school students are often very busy. They attend school for most of the day, sometimes taking advanced classes, have homework at night, and often have more than one extra-curricular activity they are involved with

after school or on weekends. Therefore, prioritizing activities and reducing overall demands becomes especially important in order to reduce fatigue, headache, and other symptoms.

Executive functions such as planning, organizing, and problem solving are increasingly important as the student moves through high school, and are also particularly vulnerable to concussion. After concussion, the high school student may be more likely to lose track of homework assignments, have more difficulty planning how to approach a project or paper, or tend to arrive in class without the proper text or materials. These difficulties may also go undetected for a while because, typically, each teacher only spends a limited time with the student. Good communication and teamwork can help to identify and address problems with executive functioning as early as possible.

College...

Like high school, college life often involves a lot of activity, both academic and extra-curricular. Unlike high school, students in college are expected to be independent and to take care of themselves. The student is often distant from parental oversight. A college student with post-concussion symptoms may minimize or be unaware of the effects of the injury, especially if he or she is not in close contact with family members who might recognize subtle changes. College students may feel pressured to keep up their academic, athletic, work and social activity levels and therefore be reluctant to seek medical and other services on their own. Alcohol consumption among college students is also a significant concern. Drinking alcohol while experiencing post-concussion symptoms puts the student at increased risk for another brain injury, which in turn can worsen or prolong symptoms. Considering all of these factors, the college student with lingering post-concussion symptoms should seek out the college office that is responsible for assisting students with disabilities. Close contact with the disability services office will facilitate opportunities to monitor the student. The disability services office will act as an advocate for the student, and will collaborate with other college offices and services to make appropriate accommodations and adjustments for the student.

How long does it take to get better?

Most students will recover completely from a concussion in a matter of days or weeks, but symptoms can sometimes last much longer. High school students tend to take longer to recover, with symptoms often lasting 2-4 weeks. Over-exertion (physical or mental), re-injury, and academic or emotional stress can aggravate symptoms and prolong recovery.

How can treatment help?

Early intervention after concussion can help to minimize the risks of re-injury and over-exertion, both of which can complicate recovery. In many cases, education about the injury and advice about how to best manage the symptoms may be all that is needed. When symptoms are more severe or last longer, medication and rehabilitation therapies may be necessary to help patients feel and function better as they recover. Because concussion can affect multiple aspects of a person's day-to-day functioning, concussion treatment is best provided by a multidisciplinary team that works in collaboration with the patient's family, school, and other medical providers.

When is it safe to return to sports after concussion?

If an athlete sustains another concussion while still recovering from a previous one, the risk of severe problems is greatly increased. Because of this, and because it is sometimes hard to recognize the symptoms of a concussion, the decision to return an athlete to play should only be made by a qualified professional. In general, athletes should not return to play after concussion until they are no longer experiencing concussion-related symptoms both at rest and with mental or physical exertion.



Where can I get help and more information?

Upstate Concussion Center Providing clinical expertise in the area of concussion using a multidisciplinary approach through treatment, research, community outreach and education.

Visit the Upstate Concussion Program website at www.upstate.edu/concussion

For more information or to schedule an appointment call:
315-464-8986. Program Director: Brian P. Rieger, PhD
Medical Director: Claudine Ward, MD

The Brain Injury Association of New York State (BIANYS) Supporting individuals with brain injury and their families, advocating for expanded services and improved access to quality services, educating the public about brain injury, and promoting prevention. www.bianys.org.

LEARNet is a web-based resource for all those involved in the lives of students with brain injury as well as other neurological impairments and learning disabilities. It contains a wealth of invaluable information designed to address the varied challenges presented by students with brain injury. It is accessed at www.bianys.org or www.projectlearnnet.org.

Family Advocacy, Counseling, and Training Services (FACTS) Program is a unique statewide program offered by the Brain Injury Association of New York State at no charge to individuals who have sustained a concussion or brain injury prior to age 22 and their families. FACTS Coordinators provide training, information, resources, advocacy and emotional support. Go to www.bianys.org for additional information and a listing of the FACTS Coordinators.

The Centers for Disease Control offers more information about concussion at www.cdc.gov/concussion