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Heads Up to Schools: KNOW YOUR CONCUSSION ABCs

Assess the situation | **B**e alert for signs and symptoms | **C**ontact a health care professional

Returning to School After a Concussion: A Fact Sheet for School Professionals

What is a Concussion?

A concussion is a type of traumatic brain injury (TBI) that results from a bump, blow, or jolt to the head (or by a hit to the body) that causes the head and brain to move rapidly back and forth. This sudden movement can cause the brain to bounce around or twist in the skull, stretching and damaging the brain cells and creating chemical changes in the brain.

While some research shows that the young brain can be resilient, it may also be more susceptible to the chemical changes that occur in the brain after a concussion. These changes can lead to a set of symptoms affecting the student's cognitive, physical, emotional, and sleep functions.

Concussions affect people differently. Most students will have symptoms that last for a few days or a week. A more serious concussion can last for weeks, months or even longer.

What role do I play in helping a student return to school after a concussion?

Each year hundreds of thousands of K-12 students sustain a concussion as a result of a fall, motor-vehicle crash, collision on the playground or sports field, or other activity. Most will recover quickly and fully. However, school professionals, like you, will often be challenged with helping return a student to school who may still be experiencing concussion symptoms—symptoms that can result in learning problems and poor academic performance.

Knowledge of a concussion's potential effects on a student, and appropriate management of the return-to-school process, is critical for helping students recover from a concussion.

That's where you come in. This fact sheet provides steps that school professionals can take to help facilitate a student's return to school and recovery after a concussion. It emphasizes the importance of a collaborative approach by a team that includes not only school professionals, but also the student's family and the health care professional(s) managing the medical aspects of the student's recovery.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

How can a concussion affect learning?

The effects of concussion on a student's return-to-school experience are unique to each student. In most cases, a concussion will not significantly limit a student's participation in school; however, in some cases, a concussion can affect multiple aspects of a student's ability to participate, learn, and perform well in school. In turn, the experience of learning and engaging in academic activities that require concentration can actually cause a student's concussion symptoms to reappear or worsen. Given this inter-relationship, and the way concussion effects can vary across students, academic adjustments need to be tailored to each student's specific circumstances.

What to Look for After a Concussion

When students return to school after a concussion, school professionals should watch for:

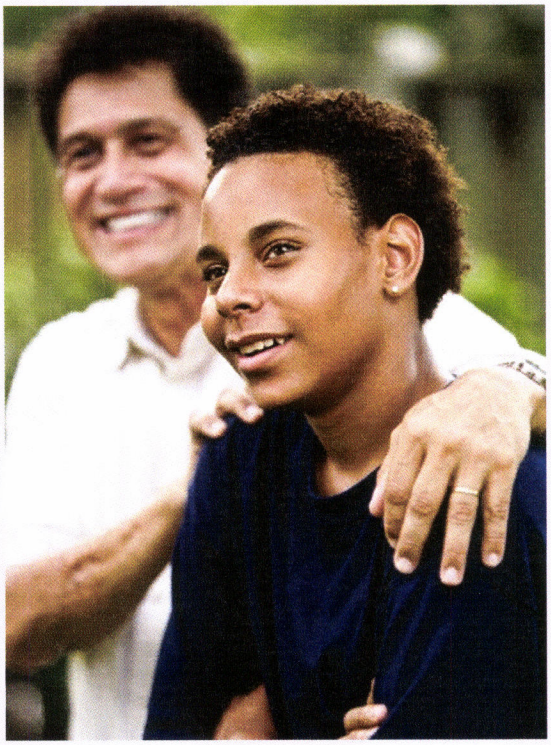
- Increased problems paying attention or concentrating
- Increased problems remembering or learning new information
- Longer time needed to complete tasks or assignments
- Difficulty organizing tasks or shifting between tasks
- Inappropriate or impulsive behavior during class
- Greater irritability
- Less ability to cope with stress
- More emotional than usual
- Fatigue
- Difficulties handling a stimulating school environment (lights, noise, etc.)
- Physical symptoms (headache, nausea, dizziness)

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

A student with a concussion should be seen by a health care professional experienced in evaluating for concussion. A health care professional can make decisions about a student's readiness to return to school based on the number, type and severity of symptoms experienced by the student. The health care professional should also offer guidance about when it is safe for a student to return to school and appropriate levels of cognitive and physical activity. Once a health care professional has given permission for the student to return to the classroom, school professionals can help monitor him/her closely. With proper permission, school professionals can confer on their observations and share those observations with the family and other professionals involved in the student's recovery.

Who should be included as part of the team supporting the student?

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



- **The student:** The affected student should be "in the loop," and encouraged to share his/her thoughts about how things are going, and symptoms he or she is experiencing. The student should receive feedback from the rest of the team that is appropriate to his/her age, level of understanding, and emotional status.
- **Parents/Guardians:** Parents and guardians need to understand what a concussion is, that medical attention is required, that most students will get better, the potential effects on school learning and performance, and the importance of following guidance from their student's health care provider in order to ensure the most rapid and complete recovery possible.
- **Other caregivers (i.e., sports coaches, after-school or day care providers):** People who care for or are responsible for a student after school hours can play an important role in monitoring participation in after-school activities and observing any changes in symptoms.
- **Physician and/or other health care professional:** Health care professionals involved in the student's diagnosis and recovery should provide an individualized plan for a student returning to school to help manage cognitive and physical exertion following a concussion. As a student recovers, health care professionals can help guide the gradual removal of academic adjustments or supports that may be instituted as part of the recovery process.
- **School nurse:** Periodic monitoring of the student's symptoms by the school nurse should continue as long as symptoms are present. The school nurse is also a resource for other school professionals who may have questions about their own observations and may also be an important liaison to parents or concussion experts within the community.

With proper permission, members of the school team should meet together on a regular basis to:

- Share observations and any new information obtained from the family or health care professional.
- Work with the family to develop an appropriate program and timeline to meet the student's needs and explain as necessary the reasons for the resulting plan.
- Continually reassess the student for symptoms and progress in healing. This information can help the team to make adjustments to the plan.

- **All teachers interacting with the student (including the physical education teacher):** Teachers can often help observe changes in a student, including symptoms that may be worsening. Teachers are also in a position to interact regularly with the student's parents, thereby providing a channel to obtain and share information with them about the student's progress and challenges.
- **School psychologist and/or school counselor:** School psychologists and/or school counselors can often help with identifying services and resources to help the student and parents or guardians and facilitate getting those services and resources for them, including a 504 Plan or IEP. School psychologists can also help assess a student's current functioning and his/her academic needs for full recovery.
- **Speech language pathologists:** Speech-language pathologists can help monitor or identify students with a concussion who are having trouble in the classroom, as well as changes in how a student is communicating or interacting with others. Speech-language pathology services may include testing, providing classroom strategies or modifications, and direct services to a student.
- **School principal or other school administrator:** The school principal or administrator should appoint the internal members of the team as well as a "case manager" to ensure adequate communication and coordination within the team. The administrator will also be responsible for approving any adjustments to the student's schedule and communicating policies on responding to students who have had a concussion (e.g., return to play policy).

If the student is an athlete, either inside or outside of school, the team should also include coaches and other athletic department staff (e.g., certified athletic trainer). Remember, a student with a concussion should NEVER return to sports, PE class, or other physical activity until a health care professional with experience in evaluating for concussion says the student is no longer experiencing symptoms and it is OK to return to play. Comprehensive information and training modules for athletic coaches and health care professionals are available from the ***Heads Up*** initiatives at www.cdc.gov/Concussion.

It is important to identify someone on this team who will function as a case manager, such as a school nurse, school psychologist, school counselor, speech pathologist, teacher or other identified school professional. This person will have the role of advocating for the student's needs and serve as the primary point of contact with the student, family, and all members of the team. A flexible set of materials to assist case managers and school professionals is available from the *Heads Up to Schools: Know Your Concussion ABCs* initiative at www.cdc.gov/Concussion.

How can understanding concussion symptoms help with identifying a student's individual needs?

A school professional can best support a student's return to school and recovery by understanding possible concussion effects and providing the student with needed accommodations and support. Understanding concussion symptoms can help the student and members of the team identify individual needs of the student, monitor changes, and with proper permission, take action when necessary. This will help facilitate a full recovery and discourage students from minimizing the symptoms due to embarrassment, shame, or pressure to return to activities.

SIGNS AND SYMPTOMS OF A CONCUSSION

SIGNS OBSERVED BY PARENTS OR GUARDIANS

- Appears dazed or stunned
- Is confused about events
- Answers questions slowly
- Repeats questions
- Can't recall events prior to the hit, bump, or fall
- Can't recall events after the hit, bump, or fall
- Loses consciousness (even briefly)
- Shows behavior or personality changes
- Forgets class schedule or assignments

SYMPTOMS REPORTED BY STUDENTS

Thinking/Remembering:

- Difficulty thinking clearly
- Difficulty concentrating or remembering
- Feeling more slowed down
- Feeling sluggish, hazy, foggy, or groggy

Physical:

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Fatigue or feeling tired
- Blurry or double vision
- Sensitivity to light or noise
- Numbness or tingling
- Does not "feel right"

Emotional:

- Irritable
- Sad
- More emotional than usual
- Nervous

Sleep*:

- Drowsy
- Sleeps less than usual
- Sleeps more than usual
- Has trouble falling asleep

**Only ask about sleep symptoms if the injury occurred on a prior day.*

Signs and symptoms of concussion generally show up soon after the injury. However, a concussion is an evolving injury. The full effect of the injury may not be noticeable at first and some symptoms may not show up for hours or days.

In the classroom, concussion symptoms may translate into a variety of challenges with learning. Cognitive symptoms may result in problems with speed of reading, difficulties doing multi-step math problems, problems maintaining consistent attention throughout the class, and/or distractibility. Students' complaints about physical symptoms such headache, fatigue or increased sensitivity to the lights in the classroom or the noise in the hallways and cafeteria may impair the effectiveness of their learning. Problems with emotional control can also be evident. The student can become more easily irritated or agitated or may feel overwhelmed and frustrated by their learning challenges. These different symptoms can impact the student's overall school performance.

What roles do cognitive exertion and rest play in a student's recovery?

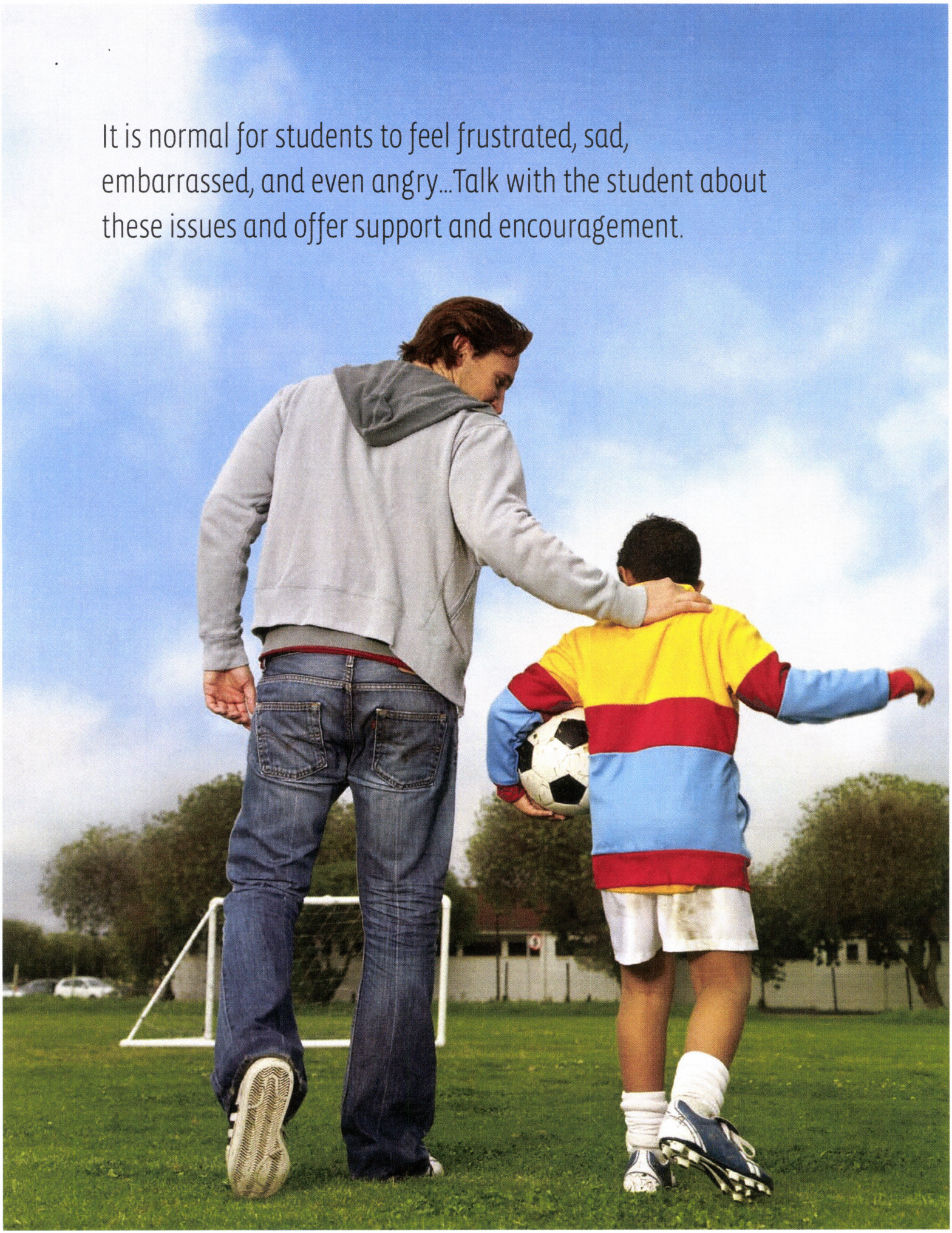
Resting after a concussion is *critical* because it helps the brain recover. Mental and cognitive exertion requires the brain's energy, and when the brain's energy is depleted due to injury, symptoms such as headaches and problems concentrating can worsen. For example, if a student with a concussion spends a lot of energy studying intensely for an exam, there will be less energy available to help the brain repair itself, which may delay recovery. These effects are referred to as *cognitive-exertional* effects.

Understanding the effect of cognitive exertion following a concussion is very important for a student because school engagement and learning requires active thinking. Therefore, the goal is to limit cognitive activity to a level that is tolerable for the student and that does not worsen or result in the reemergence of concussion symptoms. A plan for taking a break from intensive cognitive activity, known as *cognitive rest*, should

be included in the return to school management plan provided by the student's health care provider.

Cognitive rest may require a student to limit or refrain from activities, such as working on a computer, driving, watching television, studying for or taking an exam, using a cell phone, reading, playing video games, and text messaging or other activities that cause concussion symptoms to appear or worsen. Many students find limiting or completely avoiding cognitive activities difficult, because these activities are a routine part of their lives. Therefore, it is important to explain to students that ignoring concussion symptoms and trying to "tough it out" often makes symptoms worse and can make recovery take longer, sometimes for months.

Tolerance for cognitive activity increases as the student recovers, but the rate of recovery may vary from one student to another. For example, three days after their injury one student may be able to read for 30 minutes before experiencing fatigue, headache, and reduced concentration; whereas, another student may be able to tolerate only 10 minutes of this same activity three days following the injury. Thus regular monitoring of symptoms, including input from the student, is critical in any return-to-school plan.


It is normal for students to feel frustrated, sad, embarrassed, and even angry...Talk with the student about these issues and offer support and encouragement.

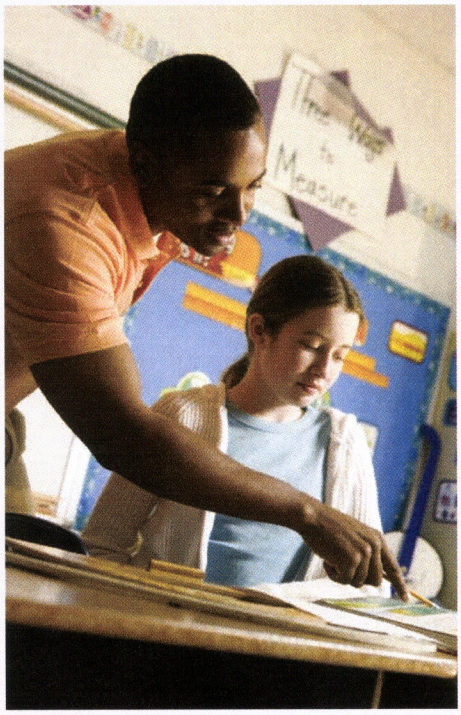
How can I help identify problems and needs?

Based on the identification of symptoms and an analysis of how the student responds to various activities, interventions that are tailored to the specific needs of the student can be identified and implemented.

To start, identify the types of symptoms the student is experiencing. Next, try to identify specific factors that may worsen the student's symptoms so steps can be taken to modify those factors. For example:

- Do some classes, subjects, or tasks appear to pose greater difficulty than others? (compared to pre-concussion performance)
- For each class, is there a specific time frame after which the student begins to appear unfocused or fatigued? (e.g., headaches worsen after 20 minutes)
- Is the student's ability to concentrate, read or work at normal speed related to the time of day? (e.g., the student has increasing difficulty concentrating as the day progresses)
- Are there specific things in the school or classroom environment that seem to distract the student?
- Are any behavioral problems linked to a specific event, setting (bright lights in the cafeteria or loud noises in the hallway), task, or other activity?

Importantly, if a student has a history of concussions, medical condition at the time of the current concussion (such as a history of migraines), or developmental disorders (such as learning disabilities and ADHD), it may take longer to recover from the concussion. Anxiety and depression may also prolong recovery and make it harder for the student to adjust to the symptoms of a concussion.



It is normal for students to feel frustrated, sad, embarrassed, and even angry because they cannot keep up with their schoolwork or participate in their regular activities, such as driving or sports. A student may also feel isolated from peers and social networks. Talk with the student about these issues and offer support and encouragement. In consultation with the student's heath care professional, and as the student's symptoms decrease, the extra help or support can be removed gradually.

Some Strategies for Addressing Concussion Symptoms at School

(Please note: these strategies will vary based on the student's age, level of understanding, and emotional status)

COGNITIVE

Concentrate first on general cognitive skills, such as flexible thinking and organization, rather than academic content.

Focus on what the student does well and expand the curriculum to more challenging content as concussion symptoms subside.

Adjust the student's schedule as needed to avoid fatigue: shorten day, time most challenging classes with time when student is most alert, allow for rest breaks, reduced course load.

Adjust the learning environment to reduce identified distractions or protect the student from irritations such as too-bright light or loud noises.

Use self-paced, computer-assisted, or audio learning systems for the student having reading comprehension problems.

Allow extra time for test/in-class assignment completion.

Help the student create a list of tasks and/or daily organizer.

Assign a peer to take notes for the student.

Allow the student to record classes.

Increase repetition in assignments to reinforce learning.

Break assignments down into smaller chunks and offer recognition cues.

Provide alternate methods for the student to demonstrate mastery, such as multiple-choice or allowing for spoken responses to questions rather than long essay responses.

BEHAVIORAL/SOCIAL/EMOTIONAL

If the student is frustrated with failure in one area, redirect him/her to other elements of the curriculum associated with success.

Provide reinforcement for positive behavior as well as for academic achievements.

Acknowledge and empathize with the student's sense of frustration, anger or emotional outburst: "I know it must be hard dealing with some things right now."

Provide structure and consistency; make sure all teachers are using the same strategies.

Remove a student from a problem situation, but avoid characterizing it as a punishment and keep it as brief as possible.

Establish a cooperative relationship with the student, engaging him/her in any decisions regarding schedule changes or task priority setting.

Involve the family in any behavior management plan.

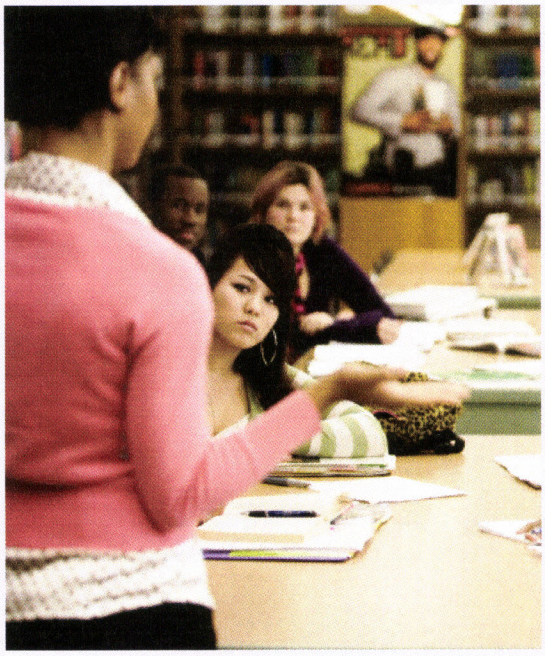
Set reasonable expectations.

Arrange preferential seating, such as moving the student away from the window (e.g. bright light), away from talkative peers, or closer to the teacher.

When symptoms persist: What types of formal support services are available?

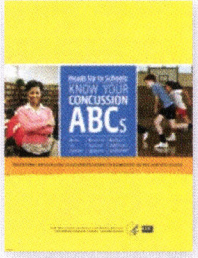
For most students, only temporary, informal, academic adjustments are needed as they recover from a concussion. However, a variety of formal support services may be available to assist a student who is experiencing a prolonged recovery. These support services may vary widely among states and school districts. The type of support will differ depending on the specific needs of each student. Some of these support services may include:

- **Response to Intervention Protocol (RTI):** An RTI may be used for students who need academic adjustments for an extended period and/or need to increase the level of a particular intervention. An RTI allows for a multi-step, targeted approach that school professionals can use to monitor a student's progress through increasing levels of an intervention. At each intervention level, a school professional assesses the students to determine whether additional instruction or support is needed.
- **504 Plan:** Students with persistent symptoms and who require assistance to be able to participate fully in school, may be candidates for a 504 plan. A 504 plan will describe modifications and accommodations to help a student return to pre-concussion performance levels. For example, a student recovering from a concussion might receive environmental adaptations, temporary curriculum modifications, and behavioral strategies.
- **Individualized Education Plan (IEP):** Students with certain classifications of disability that adversely impact educational performance may be eligible for an IEP. These students generally require significant help to access the curriculum. This help may include adjusting the student's workload, adjusting methods or pace of instruction, or allowing the student to work in an environment other than an inclusive classroom. The majority of students with a concussion will not require an IEP; however, a small percentage of students with more chronic cognitive or emotional disabilities may require this level of support.

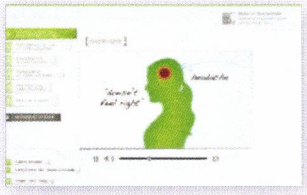


Be sure to check with your national association or school district to learn about existing resources or policies on returning students to school after a concussion.

Materials for school professionals are available from the *Heads Up to Schools: Know Your Concussion ABCs* initiative at www.cdc.gov/Concussion.



Also, see *Heads Up to Clinicians: Addressing Concussion in Sports among Kids and Teens* online course for health care professionals with a free continuing education opportunity.



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To learn more about concussion and to order materials **FREE-OF-CHARGE,** go to **www.cdc.gov/Concussion** or call **1-800-CDC-INFO.**