Concussion Management in Student-Athletes: Return to Learn Before Return to Play
By Lynne Young, ATC/L and Cindy Chang, M.D. on September 12, 2016

During the past decade, there has been much attention given to safe return of athletes to sports participation following a concussion. More recently, medical professionals and researchers are beginning to study how we can better assist students’ return to school while they recover from concussion.

The vast majority of students return to school within a week of sustaining a concussion, with little to no guidance on how to best recover with the cognitive demands placed on the brain. Each concussion is unique, and in order to best serve students in their safe recovery both academically and athletically, careful observation, management and a team approach is essential to good outcomes.

In the majority of situations, the “return to play” component should not be initiated if the student is continuing to have difficulties with school work, and ideally should only be started after the individual is able to complete a full day of school, while performing the normal course work including testing, without any symptoms.

How can we safely return students to the demands associated with school while allowing their brains to recover? Medical professionals generally agree and recommend that those who sustain a concussion first need cognitive rest to give their brains time to begin to heal. Many times the student will jump right back into a full school day without academic accommodations, then struggle with worsening and even prolongation of concussion symptoms. The type and level of academic accommodations should be individualized and based on the unique needs of the student.

**Important components of a safe and effective Return to Learn program:**

**Step No. 1:** Complete cognitive/brain rest. This involves no school and no homework, and avoiding “screen time” such as texting, and computer and video games. Often the student may need a quiet
dark place to rest, free from visual and auditory overstimulation. Sleep cycles should be kept as normal as possible, with naps lasting no longer than an hour, two to three times per day.

However, too much rest can also be detrimental, as shown by a recent study of children ages 11-22 seen for concussions in an emergency department. One group was told to strictly rest for five days, the other to rest for only one to two days, and then slowly return to activity. The strict rest group had more daily post-concussive symptoms and took longer for symptoms to resolve. Therefore, this component of treatment must be individualized. Time in a dark room and isolation from friends and family should typically not last any longer than two to three days.

**Step No. 2:** Gradual controlled and monitored re-introduction of cognitive activity (e.g., limited television, audio tapes, cooking or baking by following a recipe). Students must be educated and informed to pay close attention to what cognitive tasks aggravate and cause a return or increase in symptoms (e.g., headache, dizziness, nausea, sensitivity to noise/light, trouble focusing) and to stop any activity if this occurs. It is suggested to first begin short periods of cognitive activity and then progress in 10-15 minute increments. The goal is to gradually increase cognitive demands without provoking a return in symptoms in a controlled situation and environment. In addition, if the student can tolerate them, low-key social interactions are important to minimize the feeling of isolation and depression (e.g., phone call with friends).

**Step No. 3:** Performing schoolwork at home. The student is still not attending school full-time, but completes homework in increments of 20-30 minutes in a controlled setting, with the opportunity to take breaks. The goal for this step is to successfully complete small portions of cognitive activity without a return of symptoms in a self-paced and monitored environment. Once able to successfully complete homework for a few hours a day, the student may progress to the next step.

**Step No. 4:** Returning to school for a partial day. Prior to this step, it is important for communication to occur between medical providers, school personnel (counselor, nurse, teachers), parents and students in order to develop an organized return-to-school plan. It is also critical to attempt to alleviate anxiety and pressure regarding missed school days and assignments. Students may attempt easier courses first and slowly add the difficult courses over time. It is also best to initially avoid music, computer and physical education courses as these may increase symptoms.

Academic accommodations may include allowing frequent breaks in quiet locations (e.g., library, nurse’s office), sharing lunch with one or two friends in a quiet place, leaving class a few minutes
before the bell rings to avoid noisy hallways, using preprinted larger font class notes, avoiding exams and quizzes, limiting homework, and having a plan for leaving school if symptoms reappear.

The goal for this step is to re-enter school in a controlled manner without symptoms reappearing. Once the student is able to successfully tolerate part-time attendance, discussions should be made to gradually add more classes and increase course load.

Final Step: Full-day school attendance. During this time, the student should be able to attend all classes without a return of symptoms, while decreasing the academic accommodations in an organized and gradual manner. Once the student has returned to a full day without symptoms, normal course load make-up work can be completed, taking only one test a day with no time limits and building up to a full unrestricted cognitive workload. In most situations, only after this is achieved can the return-to-play protocol be initiated.

It is very important to remember that recovery from a concussion and progression through these steps needs to be individualized. Students may start at any step as symptoms dictate, and remain as long as needed at any step. If symptoms return or increase, the student should stop the aggravating activity and may even need to return to the previous step for a day or two. There are a small percentage of students whose symptoms may not fully resolve with physical and cognitive rest.

Studies have shown that resolution of the concussion will occur in about 50 percent of high school students by one week, 80 percent by three weeks, and 90 percent by four weeks. If prolonged symptoms are interfering with academic performance, these individuals may need additional school accommodations identified through a 504 Plan or Individualized Education Program (IEP).

Sources:
www.rockymountainhospitalforchildren.com