

Concussion Management Return to Play Protocol

Returning to play following a concussion involves a stepwise progression once the individual is symptom free.

- There are many risks to premature return to play including:
 - A greater risk for a second concussion due to a lower concussion threshold.
 - Second impact syndrome (abnormal brain blood flow that can result in death).
 - Exacerbation of any current symptoms
 - Increasing the risk of injury due to alteration in balance.

 - No student-athlete should return to play while symptomatic.

 - Students are prohibited to returning to play the day the concussion is sustained.

 - “If there is any doubt – Sit them Out”
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Once a student-athlete is symptom free at rest for 24 hours and has signed a release by the treating clinician, she/he may begin the return to play progression below:

Day 1: Light Aerobic Activity (walking or stationary bike, no resistance training)

Day 2: Sport-specific Activity (running – resistance training may begin)

Day 3: Non-contact Training Drills (Skill Drills)

Day 4: Full Contact Practice

Day 5: Return to Play

Each step should take 24 hours so that an athlete would take approximately one week to proceed through the full rehabilitation protocol once they are asymptomatic at rest and with provocative exercise. If any post concussion symptoms occur while in the stepwise program, then the student should drop back to the previous asymptomatic level and try to progress again after a further 24-hour period of rest has passed.

Concussion Management Support Materials

Concussion in the Classroom:

Students recovering from concussion can experience significant academic difficulties due to impaired cognitive abilities. Mental exertion and environmental stimulation can aggravate concussion symptoms such as headache and fatigue, which in turn can prolong recovery.

Accordingly, academic accommodations should be available to the student recovering from concussion both to ensure academic progress and to set the conditions for optimal medical recovery. Academic stress and a sense that teachers or school staff don't understand the student's concussion-related problems can complicate recovery.

Ensuring adequate rest, avoiding overexertion and overstimulation, reducing risk of re-injury and providing academic accommodations are the essential components of a return-to-school plan after concussion. Home tutoring will be needed at first in some cases. As the student recovers, he or she may need to attend school part-time or full time with rest breaks. Academic demands should be reduced to essential material, as the concussed student will typically take longer and use more mental energy to complete the same amount of work as before injury. Other accommodations that can help limit symptoms, reduce academic stress, and promote recovery include extended time and a quiet location for tests, providing the student with copies of class notes, and allowing the student to eat lunch in a quiet room with a few friends instead of a noisy cafeteria.

Physical education class should be modified to reduce the risk of re-injury. After an initial period of rest, the student may be able to participate in physical activities where there is low risk of head injury, such as walking or swimming, as tolerated. Substituting mental activity for physical activity is NOT recommended, as mental exertion can aggravate symptoms. Increase sensitivity to noise or light is also common after concussion, so the student should not be required to stay in a loud or bright gym.

Depending on the severity and duration of concussion-related symptoms and associated academic difficulties, a 504 plan or IEP may need to be developed and implemented. Collaboration and communication with the medical providers treating the concussed student will foster development of an appropriate plan. Accommodations and activity restrictions will need to be modified according to the student's particular symptoms and the speed of recovery from injury.

Neurocognitive Testing:

Neurocognitive testing is a specialized evaluation that is primarily concerned with learning in relationship to brain function. Neurocognitive testing consists of assessing verbal skills, visual abilities, processing speed, attention, executive functions, verbal and visual memory, and reaction time. Neurocognitive testing is one of the initial steps in the assessment of concussion and in assessing cognitive strengths and weaknesses. In the majority of cases, neurocognitive testing is used to assist RTP (return to play) decisions and is not done until the athlete is symptom free. However, there may be persons (e.g. child and adolescent athletes) in whom testing is performed early on after the concussion while the athlete is still symptomatic to assist in determining the proper course of management. However, neurocognitive testing should not be the sole basis of management decisions for the concussed athlete. Although in most cases cognitive recovery largely overlaps with the time course of symptom recovery, it has been demonstrated that cognitive recovery may occasionally precede or more commonly follow clinical symptom resolution suggesting that the assessment of cognitive function should be an important component in any RTP protocol. Consequently, once cognitive functions have been assessed, appropriate rehabilitation methods to restore or compensate for any impaired functions can be implemented and informed decisions can be made and RTP protocols can be initiated.

Concussion Management Education

Definition

- A concussion is a traumatic brain injury that alters the way your brain functions. Effects are usually temporary, but can include problems with headache, concentration, memory, judgment, balance and coordination.
- Although concussions usually are caused by a blow to the head, they can also occur when the head and upper body are violently shaken. These injuries can cause a loss of consciousness, but most concussions do not. Because of this, some people have concussions and don't realize it.
- Concussions are common, particularly if you play a contact sport, such as football. But every concussion injures your brain to some extent. This injury needs time and rest to heal properly. Luckily, most concussive traumatic brain injuries are mild, and people usually recover fully.

Symptoms

Signs and symptoms of a concussion may include:

- Headache or a feeling of pressure in the head
- Temporary loss of consciousness
- Confusion or feeling as if in a fog
- Amnesia surrounding the traumatic event
- Dizziness or "seeing stars"
- Ringing in the ears
- Nausea or vomiting
- Slurred speech
- Fatigue

Some symptoms of concussions may be immediate or delayed in onset by hours or days after injury:

- Concentration and memory complaints
- Irritability and other personality changes
- Sensitivity to light and noise
- Sleep disturbances
- Psychological adjustment problems and depression
- Disorders of taste and smell

When Do Concussions Occur?

Concussions can happen in any sport but more often occur in collision sports, such as football, rugby, or ice hockey. They also are common in contact sports that don't require helmets, such as soccer, basketball, wrestling, cheerleading and lacrosse. However, a concussion can also occur from a collision with the ground; a wall; a goalpost; or a ball that has been thrown, hit, or kicked. Many concussions also occur outside organized sports. For example, a child riding a bike or skateboard can fall down and bump his head on the street or an obstacle.

CT Scans and Concussions

The best way to evaluate a person's head injury is with a CT scan. This machine takes cross-sectional X-rays of the head (or other body parts), and a computer reassembles the information into images to let the doctor see details of the inside of the body. When a CT scan is used for a head injury, the doctor will look for evidence of bleeding under the skull or within the brain tissue itself.

- With less serious head trauma, the doctor may choose not to do a CT scan. A minor concussion can safely be observed either at home or in the hospital for 24-48 hours. If no other serious signs of injury develop, the person will usually be safe.
- Skull X-rays are no longer routinely used to evaluate a person with a concussion.
- CT scans do not always detect a concussion.