Physical Therapy | Sports Rehab

REHAB 2 PERFORM

A Guide on Concussions

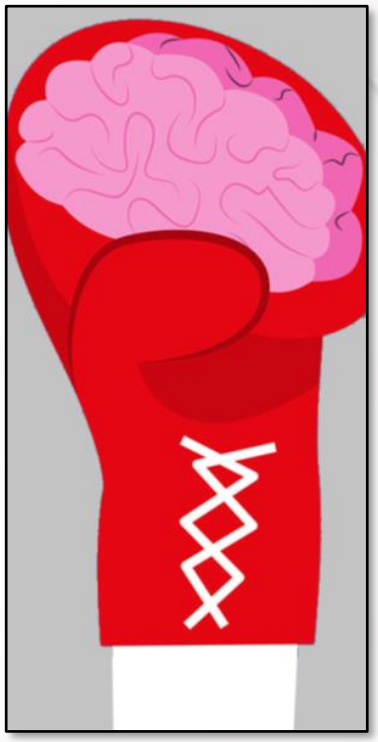
Returning Your Athletes to Play

For Coaches, Parents & ADs

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Our Mission



Did you know that over ***10% of all contact sport athletes sustain a concussion yearly***?

Did you also know that ***50% of those concussions go unreported*** or undetected?

A concussion is considered a **mild Traumatic Brain Injury** (mTBI) and is becoming increasingly accepted as a **sports injury that should be taken seriously**. In the past, most concussions were managed with the typical prescription of, “sit in a dark room and wait it out.”

However, as the research on concussion management continues to expand, this recommendation has become more outdated. **Research now suggests that 24-48 hours of relative rest immediately followed by a gradual return to class and sport** regimen can not only reduce an athlete’s risk for prolonged concussion symptoms, but it can also return an athlete to sport sooner.

At Rehab 2 Perform, we are passionate about athletes and want to ensure that they are able to return back to sport both safely and efficiently. **We created this document as a tool for parents, coaches and athletic directors to use as a resource for concussion management.**

Myths & Misconceptions

Myth ► **Concussions always involve a hit to the head.** Despite popular belief, concussions do not always need to involve a direct hit to the head or loss of consciousness. In fact, most concussions go unreported and undiagnosed for this reason.

Myth ► **An athlete can only sustain a concussion while playing an aggressive contact sport, such as football or lacrosse.** While sports like football, hockey and lacrosse are considered high risk for concussion, so are sports such as gymnastics, cheerleading, baseball, and basketball. Again, concussions do not always involve a hit to the head.

Myth ► **After sustaining a concussion, an athlete should avoid all activities and lay in a dark room until symptoms subside.** The "lay in a dark room and wait it out" method of treating concussions is 20+ years outdated from the current research. In fact, doing nothing after a concussion has been shown to be more detrimental in regards to overall prognosis and return to sport in comparison to those who seek a more active recovery.

Myth ► **Increasing symptoms with activity means that an athlete is making his or her concussion worse.** Actually, slightly provoking symptoms within a tolerable threshold is encouraged after sustaining a concussion. However, this does not mean that an athlete should jump right back into his or her normal activities and "deal with it," just as he or she wouldn't with any other serious injury. A program designed around graded exposure to activity is imperative to ensure a safe and effective recovery for an athlete.

What Is A Concussion?

A concussion is a form of mild **Traumatic Brain Injury** (mTBI) that can be induced by any type of biomechanical force, including a direct blow to the head, face, neck or elsewhere on the body that **causes an impulsive force to be transmitted to the head.** The force from the impact causes a shearing of the brain cells, resulting in a massive chemical release and an "energy crisis" in the brain. Because of this shearing force on the neurons, a sport related concussion (SRC) typically results in the **rapid onset of short-lived neurological deficits**. While some concussions may involve loss of consciousness initially, most concussions do not.

How Do I Recognize a Concussion?

A formal concussion diagnosis only needs to involve 2 things: a clear mechanism of **injury consistent with potential concussion** and any related **sign or symptom following injury**. However, all signs and symptoms may not show up immediately after sustaining the injury. As a coach or an athletic director, it is important **to recognize when an athlete has sustained a concussion and to remove them from play immediately** to prevent further injury.



Signs & Symptoms

All concussions present differently and it can take a few days to weeks for symptoms to appear. Some common symptoms of concussion include:

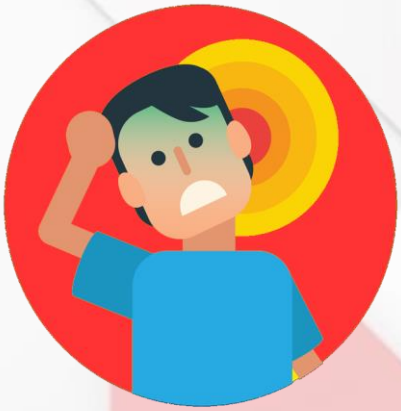
Physical: headache, dizziness, nausea, neck pain, light/noise sensitivity, imbalance, visual difficulties

Cognitive: difficulty with recall and concentrating, confusion, fogginess

Mood: anxiety, depression, nervousness, irritability

Sleep: difficulty falling asleep/staying asleep, decreased energy levels, fatigue

A lot of times, **athletes may try to hide their symptoms and push through playing with a concussion.** As a coach or athletic director, it is important to be able to recognize these instances and pull an athlete out of play immediately. **Physical signs of a potential concussion can include**:

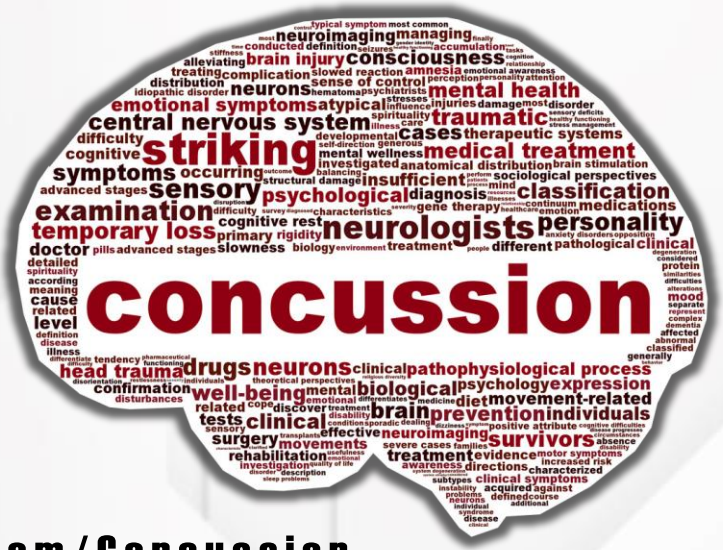


- Appearing dazed or confused
- Forgetting instructions
- Uncertainty about score of game or opponent
- Appearing off-balance
- Unconsciousness (even momentarily)
- Showing mood or personality changes
- Difficulty recalling events before or after hit or fall

Signs & Symptoms
(Continued)

Additionally, even though a concussion is considered mild in nature, it is still a traumatic brain injury that should be taken seriously. **An emergency room trip is warranted if an athlete is experiencing any of the following signs or symptoms after a concussion**:

- Seizures
- Any loss of consciousness
- Drowsiness or inability to wake up
- Worsening amnesia
- Weakness or numbness/tingling into arms or legs
- Severe headache that is worsening
- Repeated vomiting
- Increased unsteadiness with standing or walking
- Bruising around eyes or ears
- Slurred speech
- Unusual behavior, agitation, restlessness



What Should I do if I Suspect a Concussion?

Immediately remove the athlete from play to prevent further injury. Familiarize yourself with the signs and symptoms previously listed to make sure you are able to spot a potential concussion. When in doubt, sit them out.

Make sure the athlete is evaluated by a trained healthcare professional. As with an ACL injury or fracture, a concussion is a sports injury that requires medical attention. Shifting management to a doctor and/or a physical therapist will help ensure that the athlete gets appropriate medical care and treatment.

Keep the athlete out of play until cleared by a healthcare professional. The most dangerous part of a concussion is not the initial injury - it is returning an athlete back to gameplay before they are ready. After removing an athlete from play due to a suspected concussion, the decision for the athlete to return back to play is a decision left to trained medical professionals.



The Rehab Process

What does the Rehab Process for a Concussion look like?

When an athlete starts rehab, his or her physical therapist (PT) will evaluate current symptoms and screen for any red flags, referring out as warranted.

Once cleared for medical treatment, the PT will run a series of **vestibular, ocular, balance and cardiovascular tests** over the following visits to address any symptoms that the athlete may be experiencing.

Each session will be structured around the athlete's current deficits and progressed appropriately so that he or she can return back to play safely and efficiently. **PTs have a structured process for guiding athletes back to learn and play with the end-goal of taking an athlete through exit testing.**

Exit testing is a vigorous return to sport test that combines cardiovascular and vestibular components to ensure the athlete is appropriate to be cleared by their MD or AT for return to sport.



Return 2 Learn

Returning back to school (or work) after concussion is a multi-factorial decision between healthcare providers. After a period of 24-48 hours of relative rest following concussion, patients will be able to start easing back into their job or school work using the following stages of progression:

Stage 1: Symptom-Limited Cognitive Activity - Light reading, TV, screen time, etc. with no increase in symptoms. Stage 1 should not last more than 2-3 days maximum.

Stage 2: Light Cognitive Activity - Gradually increase the cognitive load by completing homework/working from home with the goal of being able to tolerate 45 minutes to an hour at a time without a significant increase in symptoms.

Stage 3: ½ Days of School/Work with Restriction - Hold on completing tests, gym, and recess but the goal is to be able to tolerate a half day of school without a significant increase in symptoms.

Stage 4: Full Days of School/Work - Initially continue to hold on tests, gym, and recess until able to complete a full school day without significant increase in symptoms. Once able, restrictions will gradually be lifted to the patient's tolerance in conjunction with a return to sport protocol.

Return 2 Activity

As with returning to school, returning to physical activity/sport is a gradual progression and must follow a systematic process. At R2P, we progress athletes through 6 stages of graded exercise in order to return to sports safely.

Stage 1: Symptom-Limited Physical Activity - Includes physical and cognitive rest with intermittent light aerobic activity that does not provoke symptoms significantly.

Stage 2: Light Physical Activity - Typically occurs 5-7 days after injury. At this stage, the athlete will start at sub-symptom threshold exercise program using a bike exertion test to determine capacity and working at ~ 80% of symptomatic heart rate in subsequent sessions.

Stage 3: Sport-Specific Exercise - This stage includes running or other light sport-specific drills (non-contact activities).

Stage 4: Non-Contact Training Drills - Typically includes progressions in intensity of sports-specific training drills and resistance training; during this stage, the athlete may return back to non-contact practice. This is the stage that the athlete can start to push him or herself.

Stage 5: Medical Clearance – Only occurs once the athlete is completely asymptomatic and back to full-time work/school with no issues and no symptoms in previous stages. Exertion testing by the PT is done to determine if the athlete is appropriate for return to sport. If the athlete passes, he or she will then be appropriate for clearance to return to sport by the doctor or athletic trainer.

Stage 6: Full Return to Contact/Discharge - Pending return to sport clearance, the athlete should have 1 full-contact practice prior to returning to gameplay.

To progress to the next stage, the **athlete must be asymptomatic for 24 hours after completing the previous stage**. Return to school and return to play do not happen independently of one another and are typically progressed concurrently. However, **an athlete is not allowed to return to sport if he or she is not completing full days of school symptom-free.**

Return 2 Gameplay

When Can I Expect My Athlete to Return Back to Gameplay?

Typically, most symptoms with daily activity will **diminish within 10-14 days** after injury. However, on average, it **can take up to a month for symptoms to completely disappear**, especially with high-impact activities.

Studies show that on average, **athletes that seek appropriate medical treatment sooner after sustaining a concussion return to sport sooner** than those who do not.

As mentioned earlier, an athlete is expected to pass exit testing before returning back to full contact sport; additionally, once the athlete is formally cleared by their doctor or athletic trainer, it is highly recommended that the athlete complete at least one full-contact practice before returning to gameplay.

To learn more about the **Concussion Rehab Program** at Rehab 2 Perform, along with tips to manage sleep, nutrition, and activities when dealing with a Concussion visit ***Rehab2Perform.com/Concussion***.

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