

Sport-Related Concussion

What is a concussion?

A concussion is a brain injury caused by a blow or force to the head or body that changes the way the brain functions.

Most concussions do not involve loss of consciousness or getting “knocked out.” Signs and symptoms of a concussion typically develop soon after the injury. Symptoms may evolve and worsen over the first 24-48 hours.

How is a concussion diagnosed?

There is not a specific test to diagnose a concussion. A health care provider will perform a thorough exam that includes assessment of various brain functions, such as balance, eye movements, memory, reaction time, etc. Computerized neurocognitive testing (i.e. ImPACT™ test) may also be performed as an additional tool in concussion assessment. Imaging studies, such as a CT scan do not show a concussion and are usually not required.

Common signs and symptoms of a concussion:

- Headache
- Memory or concentration problems
- Nausea
- Sensitivity to light or noise
- Confusion or feeling “in a fog”
- Feeling tired or sleep problems
- Dizziness or balance problems
- Double or blurred vision
- Emotional/behavioral changes

Immediately seek medical attention at the nearest ER, if any of these occur:

- Severe or worsening headache
- Trouble walking or talking
- Increasing confusion
- Loss of consciousness
- Vomiting (more than once)
- Irregular pulse or breathing rate
- Difference in pupil size (right versus left eye)
- Weak or numb arms or legs
- Sudden change in behavior or thinking
- Seizure



What should the athlete do after the injury?

- Notify athletic trainer/school nurse/school administrator of the injury.
- Schedule an appointment with your primary care physician or a concussion specialist to assist with concussion treatment, return to school, and return to sport.
- Sleep. There is no need to wake the athlete up every hour.
- Treat symptoms for comfort.
 - Take acetaminophen (Tylenol®) for headaches.
 - Use an ice pack on the head and neck area as needed.
- Slowly return to normal daily activities, school and light physical activity as tolerated. See examples of activities in the *Progressive Return to Play* table.

What should the athlete **NOT** do after the injury?

- Do not take ibuprofen, aspirin, naproxen or other non-steroidal anti-inflammatory drugs (NSAIDs) until seen by a medical provider.
- Do not drive.
- Do not do strenuous exercise, lift weights or play sports until symptoms improve and cleared by a healthcare provider.
- Do not do any activities that worsen symptoms. For example:
 - Listening to loud music.
 - Playing video games.
 - Attending sporting events or concerts.

What to expect in the days or weeks following a concussion:

- Symptoms may worsen with increased mental activity, such as reading or doing homework.
- Physical activity or stimulation, like watching a movie or sitting in a crowded room, can also make symptoms worse.
- Symptoms gradually improve over time and most young athletes recover within 3 to 4 weeks.

School and Sports after a Concussion

Return to LEARN

Notify your athlete's school that your child has had a concussion. If available, a school nurse and/or athletic trainer can help facilitate the return to school and sports, as they have additional training in the management of concussion. Communication with teachers and working with school staff is important for a smooth transition back to school.

Academic adjustments including decreased schoolwork and minimizing triggers that worsen symptoms soon after an injury may be beneficial. Some may need to stay home from school for the first day or two after a concussion, but a prolonged absence or removal from school may have negative effects on symptoms and recovery and is discouraged.

Return to SPORTS

Clearance by a physician is strongly recommended and in some cases required before the student athlete can return to practice or competition. Returning to play too soon puts your child at risk for prolonged recovery or a more serious injury.

Once the athlete is completely symptom-free and has been cleared by a healthcare professional, he or she may begin a progressive return-to-sport program. Below is an example of a gradual return-to-sport progression.

- A symptom-free period of **at least 24 hours is required** before moving on to the next stage.
- If symptoms occur during or after activity, the athlete should stop activity and progressive program and consult with their healthcare provider.

Progressive Return to Play

Do not perform more than one step per day. Go back to the previous step if symptoms return during or after activity.

Step	Examples of Activities	Goal	
1	Daily activities	Attend school, hang out with friends, perform chores	Return gradually to normal home and school activities
2	Light aerobic exercise	Stationary bike or walking. No weight lifting or strenuous activity.	Raise heart rate
3	Sport-specific exercise	Running with speed and direction changes	Increase sport-specific movement
4	Non-contact training	Ball handling or passing with a teammate	Add coordination and mental components to practice
5	Full-contact training	Scrimmage and game-like training	Prepare physically and mentally for game-like situations
	Return to sport	Normal game play	

Remember, the student athlete...

- **MUST** be symptom-free with daily activities and schoolwork, including tests, to begin the protocol.
- **MUST** remain symptom free in order to progress to the next stage.
- **SHOULD NOT** complete more than one step per day.
- Follow treating physician's recommendations and changes based on individual factors.

When in doubt, sit them out and keep them out.

This material is for informational purposes only. It does not replace the advice or counsel of a health care professional.



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