

A Coach's Guide to Concussions

We're a national leader in the care and management of concussions.

At Nationwide Children's Hospital, our pediatric sports medicine experts offer something adult care providers can't – a complete understanding of children and adolescents. As you know, concussions are a potential danger to athletes in any sport. So how do you keep your athletes safe? By knowing what a concussion is, what to do if an athlete is injured, and how to help him or her recover and get back to sports safely.

Identification:

What is a concussion?

A concussion is an invisible injury that disrupts how the brain works. It may be caused by a blow, bump or jolt to the head or by any fall or hit that jars the brain. A concussion may sometimes involve loss of consciousness (being “knocked out”), but 90 percent of concussed athletes do not lose consciousness at time of injury. Ultimately, ALL concussions are serious because they are brain injuries!

How do I tell if one of my athletes has sustained a concussion?

An athlete may complain of many different concussion symptoms that can be grouped into four general categories:
physical, cognitive, emotional and sleep.

PHYSICAL	COGNITIVE	EMOTIONAL	SLEEP
Headache	Feeling mentally foggy	Irritability	Trouble falling asleep
Dizziness	Feeling slowed down	Sadness	Sleeping more than usual
Balance problems	Difficulty concentrating	Nervousness	Sleeping less than usual
Nausea/Vomiting	Difficulty remembering	More emotional than usual	
Fatigue	Difficulty focusing		

Sensitivity to light			
Sensitivity to noise			

Furthermore, here are some signs that may be observed by the coaching staff: The athlete...

- Appears dazed or stunned
- Answers questions slowly
- Is confused about assignments or position
- Loses consciousness/gets “knocked out” (even briefly)
- Forgets an instruction
- Shows mood, behavior or personality changes
- Is unsure of game, score or opponent
- Can’t recall events prior to hit or fall
- Moves clumsily
- Can’t recall events after hit or fall

While a blow to the head may not always seem like a big deal at the time, concussion symptoms can develop immediately or up to 48 hours after the incident. Ignoring any signs or symptoms of a concussion is putting the child’s health at risk – in both the short and long term.

Is it dangerous for an athlete to play sports with a concussion?

YES. Second impact Syndrome is a catastrophic event that can occur in athletes 21 years of age and younger. This condition occurs when a second blow to the head happens before an athlete has completely recovered from a concussion. This second impact, which may be even a minor blow, can cause brain swelling, resulting in severe consequences, such as brain damage, paralysis and even death. Therefore, no child should be allowed to participate in any physical activity if he or she has possibly sustained a concussion OR before he or she is cleared by a qualified medical professional after sustaining a concussion.

Will my athletes be honest with me about their symptoms?

Even though concussions are very serious and potentially life-threatening to the young athlete, studies show that less than 50 percent of high school athletes will report their concussions. Even after being diagnosed, many athletes feel pressured to say they do not have symptoms (when they still do have symptoms), so they can return to play sooner. Almost all athletes who have died or suffered serious complications from repeated concussions did not report their continued concussion symptoms to their parents, athletic trainer or doctor. It is vitally important that coaches recognize the signs and symptoms of concussions and encourage honesty in reporting them.

Management:

If one of my athletes sustains a possible concussion, what should I do?

First, the athlete should be removed from play and not be allowed to return to any physical activity that day even if they say their symptoms have gone away. If you're not sure if a concussion has occurred, err on the side of caution. When in doubt, sit them out!

Second, monitor for worsening signs and symptoms. If any of the following **DANGER SIGNS** present themselves, the child should be evaluated by a physician **IMMEDIATELY** (sent to the emergency department via ambulance).

- Severe or increased headache
- Double vision
- Unequal pupils
- Convulsions
- Unusual/increased drowsiness
- Bleeding/clear fluid from the ear/nose
- Projectile or repeated vomiting
- Unusual stiffness in the neck area
- Severe personality changes
- Weakness in either arm(s) or leg(s)
- Numbness in the face/extremities

Third, inform the athlete's parent/guardian of the concussion. Instruct them to have their child evaluated by a medical professional educated in concussion evaluation and treatment. Ask them to bring you a doctor's note with diagnosis and information on their restrictions after their visit. Note: If you have access to an athletic trainer, he or she may handle this step. Make sure to create a communication plan that is agreed upon by all parties, so that correct information is delivered in a timely manner to the parent and back to you.

Fourth, do not allow the athlete to return to play without a note from a medical professional stating that he/she is cleared to begin participating. Even with a note, if an athlete still complains of symptoms, hold him/her out of all activity. Speak to the parents and have them re-visit their health care provider.

A Legal Note

Keep doctors' notes on file and organized. If there is question about a decision you made with an injured athlete, you will want the note proving that you were following doctor's recommendations. If you cannot produce a note in this situation, it opens you up to liability.

Returning to Play:

What can I do to help the athlete recover?

Make sure the athlete is following the guidelines for both mental and physical rest.

- Physical rest: No practice, games, pick-up games, running, throwing, batting, weight lifting, gym class, horseplay, etc.

- Mental rest: Avoid computers, video games, texting, excessive TV and listening to loud music, especially with headphones
- Limit exposure to light and noise: Use sunglasses and avoid parties, concerts, games, etc.

When can an athlete who has sustained a concussion safely go back to participating in sports?

The child should be completely free of symptoms and participating in school fully (if applicable) before beginning to play sports again. Once released by an appropriate health care provider, the child should participate in a gradual progression back to activity.

What is the Return-To-Play progression back to activity?

The Return-To-Play progression is critical because a return of any signs or symptoms of concussion during mild physical activity signals that the brain has not healed and that child is not ready to return to activity. IT SHOULD NOT BE SKIPPED, ABBREVIATED OR CHANGED WITHOUT THE WRITTEN CONSENT OF THE HEALTH CARE PROFESSIONAL.

Each stage should take a minimum of 24 hours, so an injured athlete will take approximately one week to proceed through the full rehabilitation protocol, assuming that the athlete remains asymptomatic at rest and with provocative exercise. (Note that this timeframe may be extended by the health care provider in younger athletes, those with especially severe or long-lasting symptoms or those that have suffered previous concussions.)

If symptoms are provoked at any stage, the athlete should stop exercising and rest until all symptoms have resolved for atleast 24 hours. The athlete may then attempt to resume the progression at the previous level that did not cause symptoms.

An example of the progression endorsed by concussion experts during the most recent international conference on concussion is shown below.

Return-to-Play Progression

Stage	Title	Permitted	Not Permitted at this Stage
1	Light aerobic activity	10-30 minutes of stationary bike or easy jogging	Weightlifting, hard running, any sport-specific activities/practice/games
2	Moderate physical activity	Moderate running or skating	Weightlifting, sport-specific contact activities/practice/games
3	Heavy non-contact activity	Light weightlifting, sport-specific non-contact drills	Sport-specific contact activities/practice/games
4	Full practice	Sport-specific contact activities & practice. Simulated game play in practice	Game play

5	Return to game play	Full game play	None, unless symptoms return, then remove from play and refer for evaluation
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Are there long-term effects from a concussion?

Most young athletes will heal from a concussion if it is managed properly. If a person has had multiple concussions, especially within a short period of time, the symptoms may become chronic and may jeopardize the person's ability to participate in certain sports or activities. Later in life, people with multiple concussions may be more likely to suffer from depression, dementia, and other diseases and illnesses that have a big impact on quality of life.

How can I keep my athletes from getting a concussion?

There are a few things you can do to decrease your athletes' chances of getting a concussion.

1. Ensure that your athletes wear properly fitted equipment and that it is checked and maintained regularly (if applicable).
2. Encourage good sportsmanship and following the rules.
3. Teach good technique.

How can I share this resource with others?

Nationwide Children's Hospital Sports Medicine provides an in-service on this topic free of charge. The length of the presentation and content can be tailored to fit the specific needs of the group. Please call (614) 355-6000 for more information.

What if I want to learn more?

We provide further educational resources, presentations and print materials on concussion management and other sports-related injuries and fitness well-being. Visit nationwidechildrens.org/Sports-Medicine or call (614) 355-6000.

The [concussion clinic](#) at Nationwide Children's Hospital utilizes the expertise of pediatric sports medicine specialists and physical medicine and rehabilitation specialists, along with neurologists, neurosurgeons, radiologists, neuropsychologists, physical therapists and athletic trainers to best manage pediatric concussions.

Nationwide Children's Hospital Sports Medicine also offers [baseline neurocognitive \(concussion\) testing](#) to evaluate a healthy athlete's decision making ability, reaction time, attention and memory.

Centers for Disease control and Prevention

The Centers for Disease Control and Prevention provides informational materials about concussions for athletes, parents, coaches and teachers, including a free Heads Up! tool kit. Visit cdc.gov/concussion.

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