



# A Coach's Guide to Concussions

**The Concussion Center at Nationwide Children's** is a national leader in the care and management of concussions. Our pediatric sports medicine experts offer something adult care providers can't – a complete understanding of children and teens.

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 them 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% of concussed athletes do not lose consciousness with the injury. Ultimately, ALL concussions are serious because they are brain injuries!



**NATIONWIDE CHILDREN'S®**  
*When your child needs a hospital, everything matters.*

### 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			

### 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 or after hit or fall
- Moves clumsily

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 children. Although rare, this condition occurs when a second blow to the head happens before an athlete has completely recovered from a concussion. This second impact 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 sport if they have sustained a concussion before they are cleared by a qualified medical professional.

### Will My Athletes Be Honest With Me About Their Symptoms?

Even though concussions are very serious, studies show that less than 50% 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 do have symptoms), so they can return to play sooner. Almost all athletes who have 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.



**NATIONWIDE CHILDREN'S®**  
*When your child needs a hospital, everything matters.*

## 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 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** are present, the child should be evaluated by a physician **IMMEDIATELY** (sent to the emergency department via ambulance).

- Severe or increasing headache
- Double vision
- Unequal pupils
- Convulsions
- Unusual/increased drowsiness
- Bleeding/clear fluid from the ear/nose
- 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, they 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 the athlete is cleared to begin participating. Their medical professional may recommend partial participation prior to full clearance.

### 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. until cleared by a medical professional.
- **Mental rest:** For the first 24-48 hours, avoid computers, video games, texting, excessive TV and listening to loud music, especially with headphones.

### When Can an Athlete Who Has Sustained a Concussion Safely Go back To Participating in Sports?



**NATIONWIDE CHILDREN'S®**  
*When your child needs a hospital, everything matters.*

The child should be free of concussion symptoms and participating in school fully (if applicable) before being cleared 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 it tests to see if the brain has healed from the concussion. A return of any signs or symptoms of concussion during the progression should prompt re-evaluation by the medical professional. **THE PROGRESSION SHOULD NOT BE SKIPPED, ABBREVIATED OR CHANGED WITHOUT WRITTEN INSTRUCTION FROM THE HEALTH CARE PROFESSIONAL.**

Each stage should take a minimum of 24 hours, so an injured athlete will take at least one week to proceed through the full protocol, assuming symptoms do not return. (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 who have suffered previous concussions.)

If more than mild symptoms are provoked at any stage, (more than 2 point increase on 10 point scale), the athlete should stop and attempt again the next day.

An example of the progression is shown below, adapted from the Amsterdam Consensus Statement on Concussion in Sport.

### Graduated Return to Sport (RTS) Strategy

Steps 1-3 can be started while still symptomatic and are part of the treatment of concussion. Steps 4-6 should begin only after symptoms and any cognitive or clinical findings related to the concussion have resolved, including with exertion.

	Step	Activities	Goal
1	Symptom-limited activity	Daily activities that do not provoke symptoms.	Gradual reintroduction of work/school activities
2	Light then moderate aerobic exercise	Walking, stationary bike at slow then medium pace.	Increase heart rate
3	Individual sport-specific exercise	Running or skating drills. No activities with risk of head impact.	Add movement and change of direction
4	Non-contact training drills	High intensity and more challenging drills, with teammates	Usual intensity of exercise, coordination and increased thinking
5	Full contact practice	Participate in normal training activities.	Return confidence and assess functional skills by coaching staff
6	Return to sport	Normal game play.	How can I keep my child from getting a concussion?



**NATIONWIDE CHILDREN'S®**  
*When your child needs a hospital, everything matters.*

### **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 persistent and may affect 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. However, research is mixed on these topics.

### **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 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.

**The Concussion Center at Nationwide Children's** utilizes the expertise of pediatric sports medicine doctors, physical medicine and rehabilitation doctors, neurologists, neuropsychologists, along with physical therapists, athletic trainers, neurosurgeons, and radiologists, to best manage pediatric concussions.

Nationwide Children's 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](https://www.cdc.gov).

© Copyrighted by Nationwide Children's Hospital. All rights reserved. Any use or reproduction of these materials without the express written consent of Nationwide Children's Hospital is prohibited.

