

**If you think your athlete has sustained a concussion:**

- Take him/her out of play
- Contact your physician



**SIGNS OBSERVED BY COACH/PARENT**

- Appears dazed or stunned
- Is confused about assignments or position
- Forgets sports plays
- Is unsure of game, score or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows behavior or personality changes
- Can't recall events prior to hit or fall
- Can't recall events after hit or fall

**SYMPTOMS REPORTED BY ATHLETE**

- Headache or "pressure" in head
- Nausea or vomiting
- Balances problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Does not "feel right"



## A Fact Sheet for COACHES

To download the coaches fact sheet in Spanish, please visit [www.cdc.gov/ConcussionInYouthSports](http://www.cdc.gov/ConcussionInYouthSports)

Para descargar la hoja informativa para los entrenadores en español, por favor visite

[www.cdc.gov/ConcussionInYouthSports](http://www.cdc.gov/ConcussionInYouthSports)

### THE FACTS

- A concussion is a **brain injury**.
- All concussions are **serious**.
- Concussions can occur **without** loss of consciousness.
- Concussions can occur **in any sport**.
- Recognition and proper management of concussions when they **first occur** can help prevent further injury or even death.

### WHAT IS A CONCUSSION?

Concussion, a type of traumatic brain injury, is caused by a bump, blow, or jolt to the head. Concussions can also occur from a blow to the body that causes the head and brain to move quickly back and forth—causing the brain to bounce around or twist within the skull.

This sudden movement of the brain can cause stretching and tearing of brain cells, damaging the cells and creating chemical changes in the brain.

### HOW CAN I RECOGNIZE A POSSIBLE CONCUSSION?

To help spot a concussion, you should watch for and ask others to report the following two things:

1. A forceful bump, blow, or jolt to the head or body that results in rapid movement of the head.
2. Any concussion signs or symptoms, such as a change in the athlete's behavior, thinking, or physical functioning.

Signs and symptoms of concussion generally show up soon after the injury. But the full effect of the injury may not be noticeable at first. For example, in the first few minutes the athlete might be slightly confused or appear a little bit dazed, but an hour later he or she can't recall coming to the practice or game.

You should repeatedly check for signs of concussion and also tell parents what to watch out for at home. Any worsening of concussion signs or symptoms indicates a medical emergency.

*It's better to miss one game than the whole season.*

## SIGNS AND SYMPTOMS<sup>1</sup>

### SIGNS OBSERVED BY COACHING STAFF

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

### SYMPTOMS REPORTED BY ATHLETE

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion
- Just "not feeling right" or "feeling down"

*Adapted from Lovell et al. 2004*

### WHAT ARE CONCUSSION DANGER SIGNS?

In rare cases, a dangerous blood clot may form on the brain in an athlete with a concussion and crowd the brain against the skull. Call 9-1-1 or take the athlete to the emergency department right away if after a bump, blow, or jolt to the head or body the athlete exhibits one or more of the following danger signs:

- One pupil larger than the other
- Is drowsy or cannot be awakened
- A headache that gets worse
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Cannot recognize people or places
- Becomes increasingly confused, restless, or agitated
- Has unusual behavior
- Loses consciousness (even a brief loss of consciousness should be taken seriously)

### WHY SHOULD I BE CONCERNED ABOUT CONCUSSIONS?

Most athletes with a concussion will recover quickly and fully. But for some athletes, signs and symptoms of concussion can last for days, weeks, or longer.

If an athlete has a concussion, his or her brain needs time to heal. A repeat concussion that occurs before the brain recovers from the first—usually within a short time period (hours, days, weeks)—can slow recovery or increase the chances for long-term problems. In rare cases, repeat concussions can result in brain swelling or permanent brain damage. It can even be fatal.<sup>2,3</sup>

### HOW CAN I HELP ATHLETES TO RETURN TO PLAY GRADUALLY?

An athlete should return to sports practices under the supervision of an appropriate health care professional. When available, be sure to work closely with your team's certified athletic trainer.

Below are five gradual steps that you and the health care professional should follow to help safely return an athlete to play. Remember, this is a gradual process. These steps should not be completed in one day, but instead over days, weeks, or months.

**BASELINE:** Athletes should not have any concussion symptoms. Athletes should only progress to the next step if they do not have any symptoms at the current step.

**STEP 1:** Begin with light aerobic exercise only to increase an athlete's heart rate. This means about 5 to 10 minutes on an exercise bike, walking, or light jogging. No weight lifting at this point.

**STEP 2:** Continue with activities to increase an athlete's heart rate with body or head movement. This includes moderate jogging, brief running, moderate-intensity stationary biking, moderate-intensity weightlifting (reduced time and/or reduced weight from your typical routine).

**STEP 3:** Add heavy non-contact physical activity, such as sprinting/running, high-intensity stationary biking, regular weightlifting routine, non-contact sport-specific drills (in 3 planes of movement).

**STEP 4:** Athlete may return to practice and full contact (if appropriate for the sport) in controlled practice.

**STEP 5:** Athlete may return to competition.

If an athlete's symptoms come back or she or he gets new symptoms when becoming more active at any step, this is a sign that the athlete is pushing him or herself too hard.

The athlete should stop these activities and the athlete's health care provider should be contacted. After more rest and no concussion symptoms, the athlete should begin at the previous step.

## PREVENTION AND PREPARATION

Insist that safety comes first. To help minimize the risks for concussion or other serious brain injuries:

- Ensure that athletes follow the rules for safety and the rules of the sport.
- Encourage them to practice good sportsmanship at all times.
- Wearing a helmet is a must to reduce the risk of severe brain injury and skull fracture.
  - However, helmets are not designed to prevent concussions. There is no "concussion-proof" helmet. So, even with a helmet, it is important for kids and teens to avoid hits to the head.

Check with your league, school, or district about concussion policies. Concussion policy statements can be developed to include:

- The school or league's commitment to safety
- A brief description of concussion
- Information on when athletes can safely return to school and play.

Parents and athletes should sign the concussion policy statement at the beginning of the season.

## ACTION PLAN

### WHAT SHOULD I DO WHEN A CONCUSSION IS SUSPECTED?

No matter whether the athlete is a key member of the team or the game is about to end, an athlete with a suspected concussion should be immediately removed from play. To help you know how to respond, follow the Heads Up four-step action plan:

**1. REMOVE THE ATHLETE FROM PLAY.** Look for signs and symptoms of a concussion if your athlete has experienced a bump or blow to the head or body. When in doubt, sit them out!

**2. ENSURE THAT THE ATHLETE IS EVALUATED BY AN APPROPRIATE HEALTH CARE PROFESSIONAL.**

Do not try to judge the severity of the injury yourself. Health care professionals have a number of methods that they can use to assess the severity of concussions. As a coach, recording the following information can help health care professionals in assessing the athlete after the injury:

- Cause of the injury and force of the hit or blow to the head or body
- Any loss of consciousness (passed out/knocked out) and if so, for how long
- Any memory loss immediately following the injury

- Any seizures immediately following the injury
- Number of previous concussions (if any)

**3. INFORM THE ATHLETE'S PARENTS OR GUARDIANS.** Let them know about the possible concussion and give them the Heads Up fact sheet for parents. This fact sheet can help parents monitor the athlete for signs or symptoms that appear or get worse once the athlete is at home or returns to school.

**4. KEEP THE ATHLETE OUT OF PLAY.** An athlete should be removed from play the day of the injury and until an appropriate health care professional says they are symptom-free and it's OK to return to play. After you remove an athlete with a suspected concussion from practice or play, the decision about return to practice or play is a medical decision.

### REFERENCES

1. Lovell MR, Collins MW, Iverson GL, Johnston KM, Bradley JP. Grade 1 or "ding" concussions in high school athletes. *The American Journal of Sports Medicine* 2004; 32(1):47-54.
2. Institute of Medicine (US). Is soccer bad for children's heads? Summary of the IOM Workshop on Neuropsychological Consequences of Head Impact in Youth Soccer. Washington (DC): National Academies Press; 2002.
3. Centers for Disease Control and Prevention (CDC). Sports-related recurrent brain injuries-United States. *Morbidity and Mortality Weekly Report* 1997; 46(10):224-227. Available at: [www.cdc.gov/mmwr/preview/mmwrhtml/00046702.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/00046702.htm).

*If you think your athlete has a concussion...  
take him/her out of play and seek the advice of a health care professional  
experienced in evaluating for concussion.*



## Parents & Coaches Taking Charge of the Youth Concussion Issue

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**As a parent**, with all the current media attention given to concussions, it is hard not to be worried and to question your child's involvement in sports, especially contact sports. **Youth coaches** might ask "Why do I want to do this if concussions are such a problem?" On the positive side, youth sports are an excellent place for children to learn important life lessons. As a society, we want our children to be active in sports, stay healthy, and enjoy all their positive benefits. There are many things a youth sports league, its coaches, and officials can be doing to maximize the benefits of the experience and minimize the risk. While there is a risk in any sport, if coached and played with head safety in mind, the benefits will likely far outweigh the risk. By arming oneself with proper concussion knowledge and skill, parents and youth coaches can feel more in charge of this injury, thereby increasing confidence in active sports participation.

To safeguard children from concussion, parent and coach responsibilities include:

1. Obtain education on concussion signs & symptoms, and risks
2. Develop skills to recognize signs & symptoms, and respond appropriately
3. Obtain appropriate post-injury medical evaluation and support symptom management at home and school
4. Understand the need for return to sport participation only with proper, written medical clearance.

In youth sports, trained medical professionals are typically not on the sidelines. Parents and youth coaches, therefore, have an important responsibility to recognize when a child may have sustained a concussion on the playing field, and respond appropriately. While the general public has become more aware of concussions over the past five years, many lack the basic information about what to do next when a concussion is suspected. Parents and coaches may ask the question: "How will I remember what to look for if I suspect a concussion and what should I do?" It is important to feel confident in recognizing the signs and symptoms of concussion and to take the proper action steps to prevent further injury. We offer the following six action steps every parent and youth coach can take to address concussion.



## Three Action Steps Every Parent and Youth Coach Can Take

1. **Recognize a concussion.** To recognize a concussion, look for two things:
  - (1) A blow to the head or to the body that moves the head violently, and
  - (2) Any sign or symptom that indicates a change in the child's physical, cognitive, emotional function or behavior.

For further information and education, we recommend parents view one of the online educational videos on concussion (e.g., CDC's Concussion Training [www.cdc.gov/concussion](http://www.cdc.gov/concussion), the Brain 101 concussion training program <http://brain101.orcasinc.com/> or one of the sport-specific videos (football, lacrosse, ice hockey) made by the National Academy of Neuropsychology and the National Athletic Trainer's Association [www.nanonline.org](http://www.nanonline.org)).

**Use tools to guide your recognition and response.** The CDC materials are excellent ([www.cdc.gov/concussion](http://www.cdc.gov/concussion)) either in paper form or via the free Concussion Recognition & Response (CRR) app to help guide your recognition of the signs and symptoms that we developed. (<http://www.childrensnational.org/score/smart-phone-apps.aspx>)

**Learn the 12 Danger Signs of brain injury.** There are 12 danger signs of a brain injury that, although relatively uncommon, require immediate emergency medical attention if they are observed or suspected. Call 911 immediately if any of these signs are present.

2. **IF YOU SUSPECT, YOU MUST PROTECT! Remove the child from play if you suspect a concussion, and obtain a medical evaluation. When in doubt, sit them out.** Any blow to the head, no matter how mild, can cause a concussion. Look for the associated signs and symptoms. It is better to be safe than question if they should return to the game. **Treat all concussions as serious.**

*If you suspect a concussion*, call your child's pediatrician and ask if he or she would prefer to examine your child or if you should go to the emergency room. Do not try to judge the seriousness of the injury yourself. Second-impact syndrome, though rare, occurs when an individual sustains a second concussion before the first has properly healed, and can be severely disabling or even lead to death.

3. **Monitor and record the child's symptoms at home** as is recommended by the CDC. The **Home Symptom Monitoring** feature of the CRR app can assist you to track symptom progress and provide this valuable information to your healthcare provider to assist post-injury treatment.

**Support proper treatment.** After a concussion, the individual's brain should not be over-stimulated or subjected to any further risk of re-injury. The less "work" the brain has to do, especially early in recovery, the more energy it can put toward healing. During recovery, it is important to provide a careful balance between activity and rest, not allowing the symptoms to worsen but also increasing activity as symptoms allow. Managing the child's physical and cognitive (school) activity is very important throughout recovery.



## Ten Questions to Ask Youth Sports Organizations About Head Safety

In whatever sport a child chooses, to feel more comfortable and confident with their participation as it relates to concussion risk, parents must do their homework and ask questions of the league and coaches about how they handle head safety. A parent needs to feel at ease that safety is treated as a priority. At a youth football Q&A event in Virginia in 2012, the commissioner of the NFL, Roger Goodell, was asked by a parent how to be assured of their child's head safety by the youth sports league. He responded with an excellent question "How many of you would send your child to a babysitter without first checking on them for safety, quality, etc.? You need to do the same with their sports activities." In following this advice, we encourage parents to ask the following 10 questions, and we encourage all youth sports organizations to properly prepare themselves for these questions.

1. Does the league have a general policy in how they manage concussions?
2. Does the league have access to healthcare professionals with knowledge and training in sport-related concussion?
3. Are the coaches required to take a concussion education and training course?
4. Who is responsible for the sideline concussion recognition and response to suspected concussions during practice and games?
5. Do the coaches have readily available the tools - concussion signs & symptoms cards, clipboards, fact sheets, smartphone apps, etc. - during practice and games to guide proper recognition and response of a suspected concussion?
6. Does the league provide concussion education for the parents, and what is the policy for informing parents of suspected concussions?
7. What is the policy regarding allowing a player to return to play? [Correct answer – ONLY when an appropriate medical professional provides written clearance that the athlete is fully recovered and ready to return.]
8. Does the league teach/ coach proper techniques (e.g., blocking and tackling in football, checking in hockey and lacrosse) in ways that are "head safe" by not putting the head in position to be struck? If the player does demonstrate unsafe technique during practice or a game, do the coaches re-instruct them with the proper technique/ method? Is head and neck strengthening taught?
9. If a contact sport, are there limitations to the amount of contact? How often (# days per week, # minutes per practice) do you practice with live contact? Is that any different than past years?
10. How amenable is the league/ team / coach to accepting feedback from parents about their child's safety as it relates to head safety?



# Concussion

## RECOGNITION & RESPONSE™

### COACH & PARENT VERSION



*"The focus of this app is entirely consistent with [recommendations from] the Centers for Disease Control and Prevention, which emphasize that when it comes to sport-related concussion, the non-medical person should focus on 'recognition' (not diagnosis) and 'response' (not treatment)...I feel strongly that the CRR app by PAR is a superior app for parents and coaches who may be in the position of recognizing and reporting a possible concussion."*

**Dr. Robert Stern**

Professor of Neurology and Neurosurgery  
Boston University School of Medicine



**Requirements:**

iPhone® or iPad®: iOS Version 5.0  
Android™-based devices: Version 2.3



Scan with your PAR Assessment Toolkit!

## The Concussion Recognition & Response app provides:

### Quick Assessment

In less than 5 minutes, parents and coaches can determine the likelihood that an athlete has sustained a concussion, whether he or she is able to return to the field, and/or if medical attention is needed.

### Instant Communication

Immediately e-mail a report of the athlete's symptoms to parents, doctors, or anyone else who may need the information — plus, use the "Dial 911" feature when you need to deal quickly with an emergency situation.

### GPS Tracking

The CRR app records the exact GPS location where each incident took place.

### Home Symptom Monitoring

Parents can observe and record the athlete's symptoms periodically during the hours, days, or weeks following the injury and e-mail this information to the athlete's health care provider.

### An Activity Plan That Aids Recovery

Help protect athletes from further injury by following the progressive activity guidelines recommended to prepare the athlete to return to play. All return-to-play decisions should be made under the supervision of a trained medical professional.

### A Post-Concussion Guide

The Acute Concussion Evaluation (ACE) Post-Concussion Home and School Instructions Care Guide lets parents or teachers know how best to help a young person recovering from a concussion.



# Suspect a Concussion?

## Recognize the signs and symptoms

With the Concussion Recognition & Response app, parents and coaches can quickly assess the likelihood that a young athlete may have suffered a concussion. Developed by concussion experts Gerard A. Gioia and Jason Mihalik and based on the CDC's Heads Up: Concussion in Youth Sports program, the app guides users through a checklist of signs and symptoms that will help them determine whether to remove the athlete from play and whether there is a need for further medical examination.

## Comply with state concussion laws

In response to the recent increase in head injury awareness in the U.S., **49 states** (plus the District of Columbia and the city of Chicago) have adopted youth concussion laws (as of May 2012).\* The legislation is designed to protect student-athletes who play contact sports. Typically, these laws comprise provisions that:

- require the immediate removal of a student-athlete with a suspected concussion from play;
- prevent a concussed student-athlete from returning to play without a physician's permission; and
- mandate education and training on concussion risks, recognition, and response—sometimes annually—for coaches, parents, and/or student-athletes.

Insurance companies can refuse to cover athletic programs that do not comply with their state's laws, and coaching permits can be revoked for noncompliance. Recognizing the importance of compliance with the law, the CRR app and its extensive FAQ section and ACE Post-Concussion Home and School Instructions Care Guide provide important educational tools for those who are required by law to know how to deal with possible concussions.

\*Source: <http://nflhealthandsafety.com/zackery-lystedt-law/states/>

### SUPPORTING AWARENESS

A portion of the proceeds from the sale of this app will be given directly to the Children's National Medical Center and the Matthew A. Gfeller Sport-Related Traumatic Brain Injury Research Center.

#### Our PARTners



#### Requirements:

iPhone® or iPad®: iOS Version 5.0  
Android™-based devices: Version 2.3

