

**HEADS UP**  
CONCUSSION

# CONCUSSION *in* SPORTS

## STATISTICS

In 2009,  
**NEARLY 250,000  
KIDS AND TEENS**

were treated in emergency  
departments for sports and  
recreation-related TBI,  
including concussion.

WHEN IN DOUBT,  
>> **SIT THEM OUT!**

WHEN APPROPRIATE MAKE SURE AN  
ATHLETE USES THE CORRECT HELMET  
FOR THEIR ACTIVITY.



Wearing a helmet can  
help protect athletes  
from serious brain or  
head injuries.

**THERE IS NO "CONCUSSION-PROOF" HELMET.**

## LEARN CONCUSSION SIGNS SYMPTOMS

SEE FULL LIST OF SYMPTOMS @  
[www.cdc.gov/Concussion](http://www.cdc.gov/Concussion)

- ☐ Headache
- ☐ Dizziness
- ☐ Blurred Vision
- ☐ Difficulty Thinking Clearly
- ☐ Sensitivity to Noise & Light

**if YOU THINK**  
AN ATHLETE HAS A CONCUSSION

USE THE HEADS UP ACTION PLAN

**1**

Remove the athlete from play.

**2**

Keep the athlete out of play the day of  
the injury.

**3**

An athlete should only return to play with  
permission from an appropriate health care  
professional.

**HELP KEEP ATHLETES SAFE *from* CONCUSSIONS**  
AND OTHER SERIOUS BRAIN INJURIES

REPORT IT



Remind your athletes to tell  
coaching staff right away if  
they think they have a  
concussion or that a  
teammate has a concussion.

FOLLOW THE RULES



Make sure that athletes  
follow the rules for safety  
and the rules of the sport.

SPORTSMANSHIP



Encourage athletes to  
practice good sportsmanship  
at all times.

ACTION PLAN



Keep the Heads Up  
Action Plan at all  
games and practices.



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

LEARN more AT:

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



# A FACT SHEET FOR Youth Sports Coaches



**CDC HEADS UP**  
SAFE BRAIN. STRONGER FUTURE.

Below is information to help youth sports coaches protect athletes from concussion or other serious brain injury, and to help coaches know what to do if a concussion occurs.

## What is a concussion?

A concussion is a type of traumatic brain injury caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move quickly back and forth. This fast movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells.

## What is a subconcussive head impact?

A subconcussive head impact is a bump, blow, or jolt to the head that *does not* cause symptoms. This differs from concussions, which *do* cause symptoms. A collision while playing sports is one way a person can get a subconcussive head impact. Studies are ongoing to learn about subconcussive head impacts and how these impacts may or may not affect the brain of young athletes.

## How can I keep athletes safe?

As a youth sports coach, your actions can help lower an athlete's chances of getting a concussion or other serious injury. Aggressive or unsportsmanlike behavior among athletes can increase their chances of getting a concussion or other serious injury.<sup>3</sup> Here are some ways you can help:

### Talk with athletes about concussion:

- Set time aside throughout the season to talk about concussion.
- Ask athletes about any concerns they have about reporting concussion symptoms.
- Remind athletes that safety comes first and that you expect them to tell you and their parent(s) if they think they have experienced a bump, blow, or jolt to their head and “don’t feel right.”

### Focus on safety at games and practices:

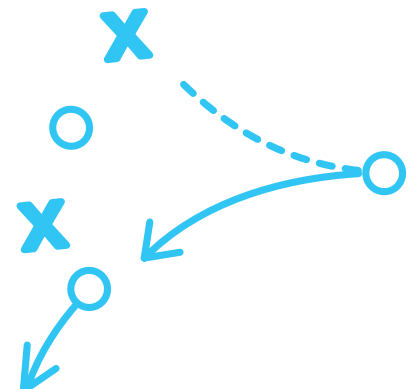
- Teach athletes ways to lower the chances of getting a hit to the head.
- Enforce rules that limit or remove the risk of head impacts.
- Tell athletes that good sportsmanship is expected at all times, both on and off the field.
- Bring emergency contact information for parents and healthcare providers to each game and practice in case an athlete needs to be seen right away for a concussion or other serious injury.

## Multiple concussions

Athletes who have ever had a concussion have a higher chance of getting another concussion. A repeat concussion can lead to more severe symptoms and longer recovery.<sup>1,2</sup>

### Coach's to-do list:

- ✓ Talk with athletes about concussion.
- ✓ Teach athletes ways to lower their chances of getting a hit to the head.
- ✓ Encourage concussion reporting among your athletes.
- ✓ Know what to do if you think an athlete has a concussion.
- ✓ Learn how to help an athlete safely return to play after a concussion.



## Make sure athletes do not perform these unsafe actions:

- Use their head or helmet to contact another athlete.
- Make illegal contact or check, tackle, or collide with an unprotected opponent.
- Try to injure another athlete.

## Stay up to date on concussion information:

- Review your state, league, and organization's concussion plans and rules.
- Take a training course on concussion. The Centers for Disease Control and Prevention (CDC) offers free concussion training at [cdc.gov/HEADSUP](https://cdc.gov/HEADSUP).
- Download CDC's HEADS UP app or another resource that provides a list of concussion signs and symptoms.

## Check equipment and sports facilities:

- Make sure all athletes wear a helmet that is appropriate for the sport or activity; ensure that the helmet fits well and is in good condition.
- Work with the game or event manager to fix any concerns, such as tripping hazards or goal posts without proper padding.

One study found that nearly 70% of athletes continued to play with concussion symptoms.<sup>4</sup>



## How can I spot a possible concussion?

Athletes who show or report one or more of the signs and symptoms listed below—or who simply say they just “don’t feel right”—after a bump, blow, or jolt to the head or body may have a concussion or other serious brain injury. Concussion signs and symptoms often show up soon after the injury, but it can be hard to tell how serious the concussion is at first. Some symptoms may not show up for hours or days.

### Signs coaches or parents may observe:

- Seems confused
- Forgets an instruction or is unsure of the game, position, score, or opponent
- Moves clumsily
- Answers questions slowly or repeats questions
- Can’t remember events before or after the hit, bump, or fall
- Loses consciousness (even for a moment)
- Has behavior or personality changes

### Symptoms athletes may report:

- Headache
- Nausea or vomiting
- Dizziness or balance problems
- Bothered by light or noise
- Feeling foggy or groggy
- Trouble concentrating or problems with short- or long-term memory
- Does not “feel right”

### Signs of a more serious brain injury

In rare cases, a concussion can cause dangerous bleeding in the brain, which puts pressure on the skull. Call 9-1-1 if an athlete develops one or more of these danger signs after a bump, blow, or jolt to the head or body:

- A headache that gets worse and does not go away
- Significant nausea or repeated vomiting
- Unusual behavior, increased confusion, restlessness, or agitation
- Drowsiness or inability to wake up
- Slurred speech, weakness, numbness, or decreased coordination
- Convulsions or seizures (shaking or twitching)
- Loss of consciousness (passing out)

### Some athletes may not report a concussion because they don’t think a concussion is serious.

They may also worry about:

- Losing their position on the team or losing playing time during a game,
- Putting their future sports career at risk,
- Looking weak,
- Letting down their teammates or the team, and/or
- What their coach or teammates think of them.<sup>5-7</sup>

## What should I do if an athlete has a possible concussion?

As a coach, if you think an athlete may have a concussion, you should:

### Remove the athlete from play.

**When in doubt, sit them out!** Record and provide details on the following information to help the healthcare provider or first responders assess 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) and for how long
- Any memory loss right after the injury
- Any seizures right after the injury
- Number of previous concussions (if any)

### Keep an athlete with a possible concussion out of play on the same day of the injury and until cleared by a healthcare provider.

Do not try to judge the severity of the injury yourself. Only a healthcare provider should assess an athlete for a possible concussion and decide when it is safe for the athlete to return to play.

### Inform the athlete's parent(s) about the possible concussion.

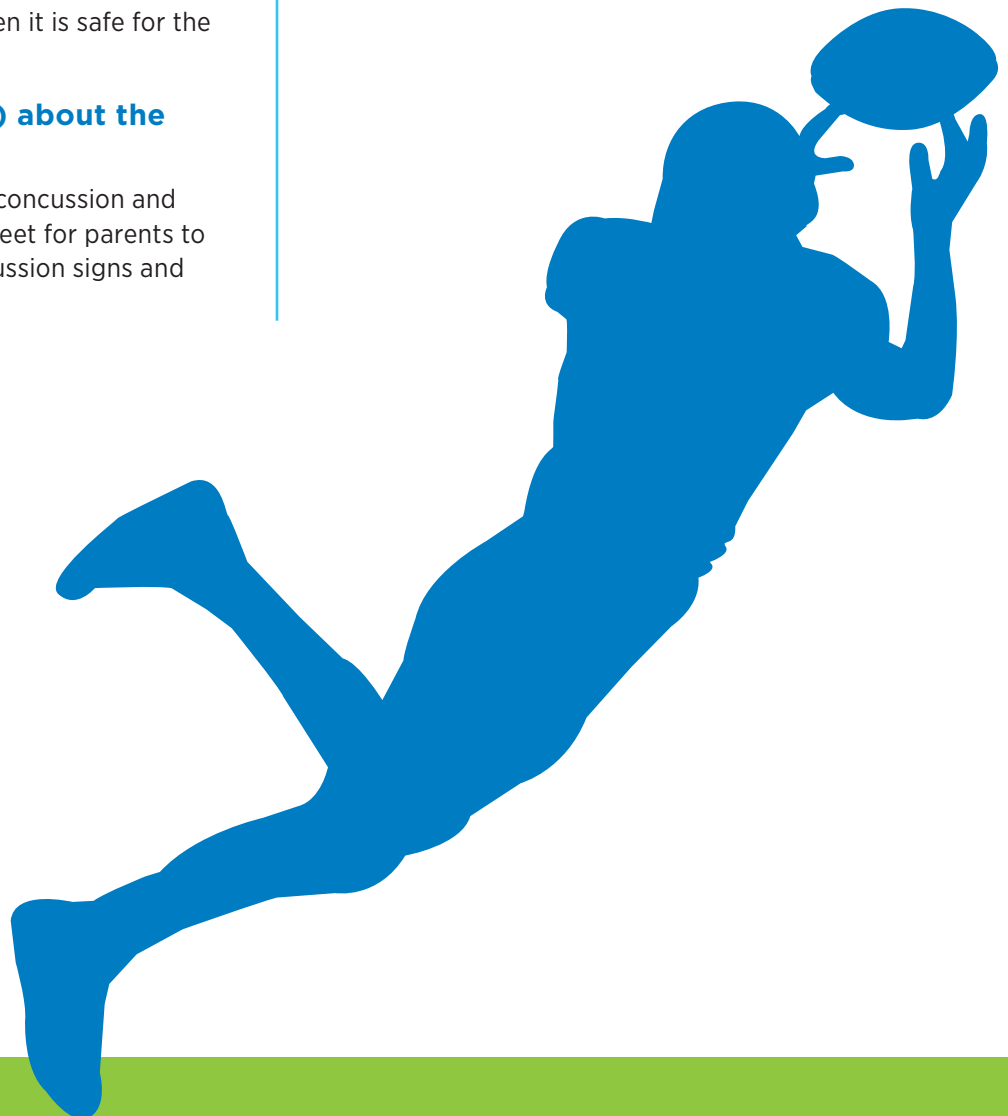
Let parents know about the possible concussion and give them the CDC HEADS UP fact sheet for parents to help them watch the athlete for concussion signs and symptoms at home.

### Ask for written instructions from the athlete's healthcare provider on return to play.

This should include information about when the athlete can return to play and steps you should take to help the athlete safely return to play. Athletes who continue to play while having concussion symptoms have a greater chance of getting another concussion. A repeat concussion that occurs before the brain has fully healed can be very serious and can increase the chance for long-term problems. It can even be fatal.

### Offer support during recovery.

An athlete may feel frustrated, sad, angry, or lonely while recovering from a concussion. Talk with them about it, and allow an athlete recovering from a concussion to stay in touch with their teammates, such as cheering on their team at practices and competitions.



## What steps should I take to help an athlete return to play?

An athlete's return to school and sports should be a gradual process that is approved and carefully managed and monitored by a healthcare provider. When available, be sure to also work closely with your team's certified athletic trainer.

There are six gradual steps to help an athlete safely return to play. These steps should not be done in one day, but instead over days, weeks, or months. **An athlete should move to the next step only if they do not have any new symptoms at the current step.**

**Step 1:** Return to non-sports activities, such as school, with a greenlight from the healthcare provider to begin the return-to-play process

**Step 2:** Light aerobic exercise

- Goal: Increase the athlete's heart rate
- Activities: Slow to medium walking or light stationary cycling

**Step 3:** Sport-specific exercise

- Goal: Add movement
- Activities: Running or skating drills; no activities with risk for contact

**Step 4:** Non-contact training drills

- Goal: Increase exercise, coordination, and thinking
- Activities: Harder training drills and progressive resistance training

**Step 5:** Full-contact practice

- Goal: Restore confidence and have coaching staff assess functional skills
- Activities: Normal training activities

**Step 6:** Return to regular sports activity

**Remember:** It is important for you and the athlete's parent(s) to watch for concussion symptoms after each day's activities, particularly after each increase in activity. If an athlete's concussion symptoms come back, or if he or she gets new symptoms when becoming more active at any step, this is a sign that the athlete is working too hard. The athlete should stop these activities, and the athlete's parent should contact the healthcare provider. After the athlete's healthcare provider says it is okay, the athlete can begin at the step before the symptoms started.



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2. Guskiewicz KM, McCrea M, Marshall SW, et al. Cumulative effects associated with recurrent concussion in collegiate football players: the NCAA Concussion Study. *JAMA*. 2003;290(19):2549-2555.

3. Collins CL, Fields SK, Comstock RD. When the rules of the game are broken: what proportion of high school sports-related injuries are related to illegal activity? *Inj Prev*. 2008;14(1):34-38.

4. Rivara FP, Schiff MA, Chrisman SP, Chung SK, Ellenbogen RG, Herring SA. The effect of coach education on reporting of concussions among high school athletes after passage of a concussion law. *Am J Sports Med*. 2014;42(5):1197-1203.

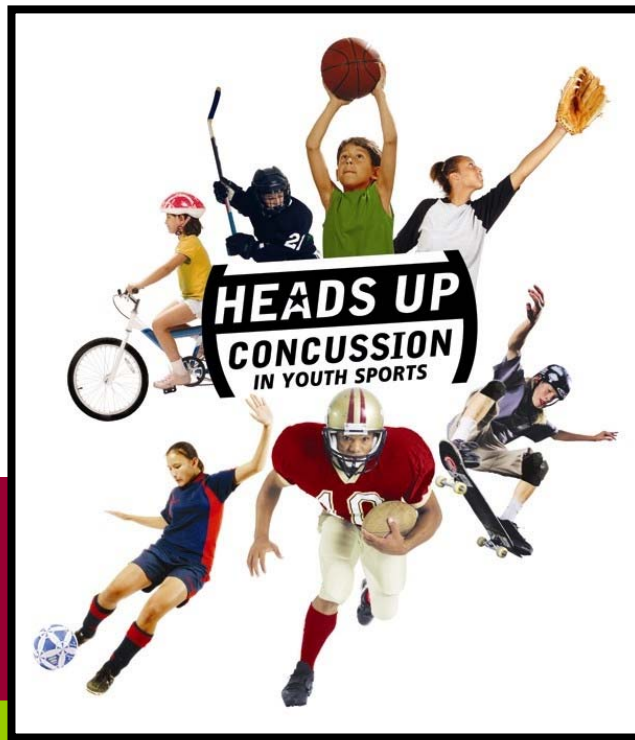
5. Kerr ZY, Register-Mihalik JK, Marshall SW, Evenson KR, Mihalik JP, Guskiewicz KM. Disclosure and non-disclosure of concussion and concussion symptoms in athletes: review and application of the socio-ecological framework. *Brain Inj*. 2014;28(8):1009-1021.

6. Register-Mihalik JK, Guskiewicz KM, McLeod TC, Linnan LA, Mueller FO, Marshall SW. Knowledge, attitude, and concussion-reporting behaviors among high school athletes: a preliminary study. *J Athl Train*. 2013;48(5):645-653.

7. Chrisman SP, Quitiquit C, Rivara FP. Qualitative study of barriers to concussive symptom reporting in high school athletics. *J Adolesc Health*. 2013;52(3):330-335.

*The information provided in this fact sheet or through linkages to other sites is not a substitute for medical or professional care. Questions about diagnosis and treatment for concussion should be directed to a physician or other healthcare provider.*

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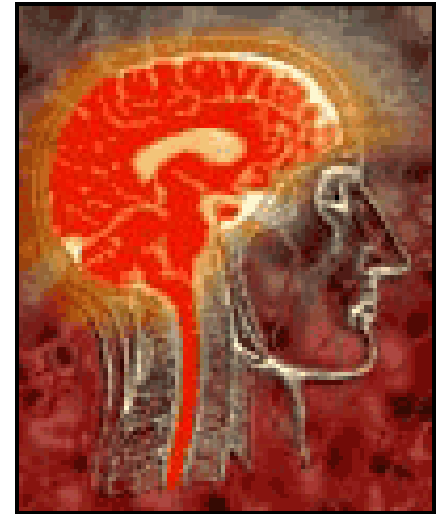


# “Heads Up: Concussion in Youth Sports”



# Facts about Concussion

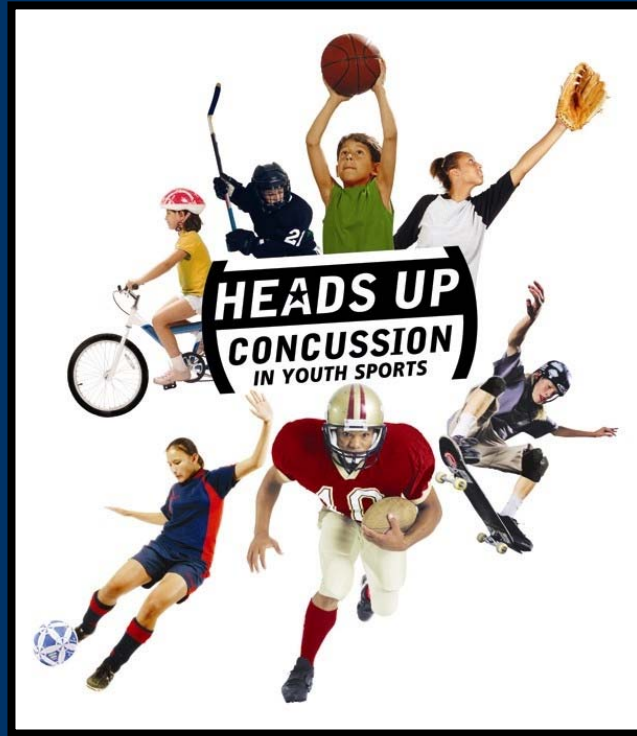
- **A concussion is a brain injury**
- **As many as 3.8 million sports- and recreation-related concussions occur in the United States each year**
- **Concussion is caused by a bump or blow to the head or body that causes the brain to move rapidly inside the skull**



# Facts about Concussion

- **Concussions can occur in any sport and all concussions are serious**
- **Concussions can occur without loss of consciousness**
- **Repeat concussions can result in brain swelling, permanent brain damage, and even death**





# CDC's "Heads Up: Concussion in Youth Sports" tool kit

# Overview of the Tool Kit

- **Developed for youth sports coaches, administrators, parents, and athletes**
- **Goals of the tool kit:**
  - **Raise awareness about concussion**
  - **Provide coaches with tools that will help them prevent and recognize concussion and take appropriate action if a concussion occurs**
  - **Help coaches educate others about concussion**



# Materials

- Tool kit materials include:

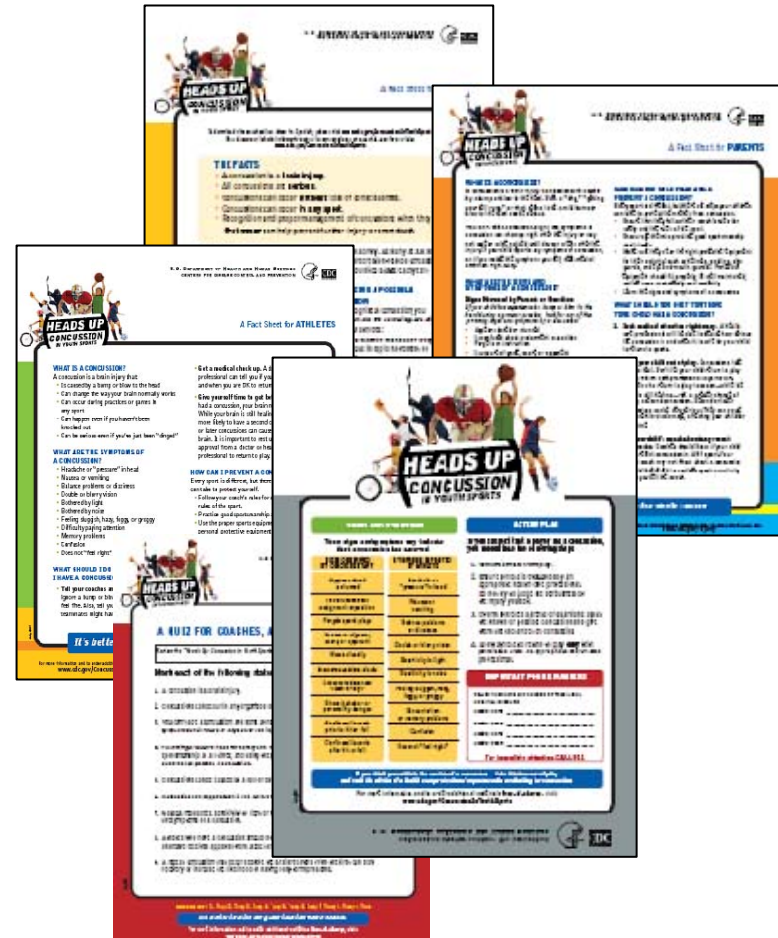
- Fact sheets for coaches, parents, and athletes

- Clipboard

- Magnet

- Poster

- Concussion quiz





# Materials: Recognizing a Concussion

- To help recognize a concussion, you should learn the signs and symptoms and watch for the following two things:

– **A forceful blow to the head or body that results in rapid movement of the head**

**and**

– **Any change in the athlete's behavior, thinking, or physical functioning**

# Materials: Signs and Symptoms

## **SIGNS OBSERVED BY COACHING STAFF**

- Appears dazed or stunned
- Is confused about assignment 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 or after the 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
- Does not “feel right”

# Materials: Prevention

- Insist that safety comes first
- Teach athletes safe playing techniques
- Encourage athletes to practice good sportsmanship
- Make sure athletes wear the right protective equipment for their activity





# Materials: Concussion Action Plan

- 1. Remove the athlete from play**
- 2. Ensure that the athlete is evaluated right away by an appropriate health care professional**
- 3. Inform the athlete's parents or guardians about the possible concussion and give them the fact sheet on concussion**
- 4. Allow the athlete to return to play only with permission from a health care professional with experience in evaluating for concussion**



# Materials: Return to Play

- Athletes should not return to play until:
  - They are symptom-free
  - Receive permission from a health care professional experienced in evaluating for concussion



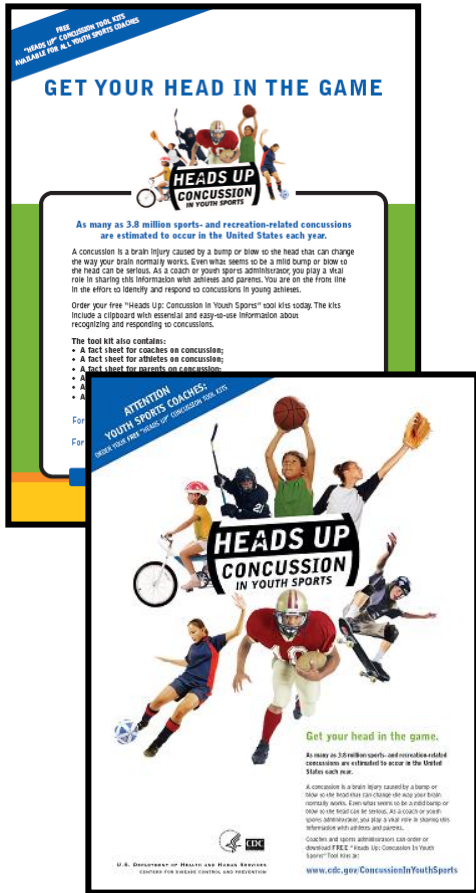
# Participating Organizations

## **CDC collaborated with over 26 organizations:**

- Amateur Athletic Union
- American Academy of Pediatrics
- American College of Emergency Physicians
- American College of Sports Medicine
- American Medical Society for Sports Medicine
- Association of State and Territorial Health Officials
- Brain Injury Association of America
- Children's National Medical Center
- Children's Safety Network
- Institute for Preventative Sports Medicine
- Institute for the Study of Youth Sports
- National Alliance for Youth Sports
- National Association for Sport and Physical Education
- National Athletic Trainers' Association
- National Center for Sports Safety
- National Council for Accreditation of Coaching Education
- National Council of Youth Sports
- National Football League
- National Recreation and Park Association
- National Youth Sports Coaches Association
- President's Council on Physical Fitness and Sports
- State and Territorial Injury Prevention Directors Association
- The Children's Hospital of Philadelphia
- USA Football
- YMCA of the USA
- Youth Sports Research Council, Rutgers, The State University of New Jersey



# National Launch



## National launch: July 26<sup>th</sup>, 2007

- National radio media tour had with over 30 million listeners
- Full-page ad in the 2007 NFL Pre-Season issue of Sports Illustrated (*readership of over 11 million*)
- 20,000 copies disseminated in first two months of the launch

# What Can You Do?

- Educate athletes and parents about concussion
- Teach athletes and parents that it's not smart to play with a concussion
- Prevent long-term problems



# What Can You Do?

- Ensure your youth sports league has a concussion policy and action plan
- Promote tool kit at events throughout the various sports seasons
- Include information and materials from the tool kit in coaching clinics
- Adapt coaching curricula to include information to match the tool kit materials and content





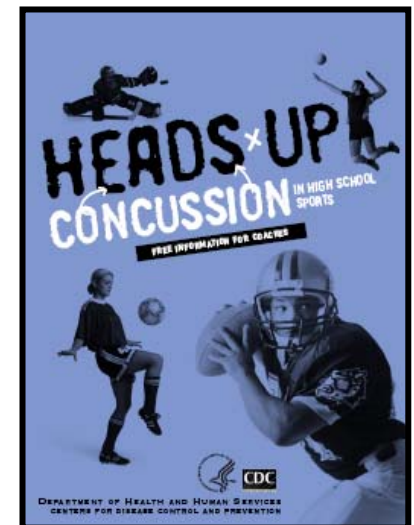
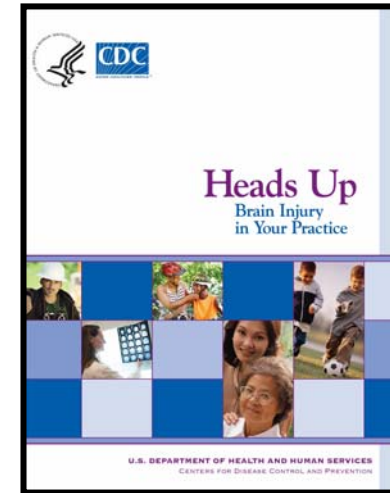
# How Can I Get a Copy?

**The tool kit can be ordered at no cost by  
visiting CDC's website at:**

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

# Additional Resources

- **“Heads Up: Brain Injury in Your Practice” tool kit for physicians**
- **“Heads Up: Concussion in High School Sports” for high school coaches, administrators, and trainers**



**For More Information, Contact:**

**CDCINFO at 1-800-CDC-INFO  
or Email [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)**