Concussion Training for Coaches

INTRODUCTION

Each day in our nation, hundreds of thousands of young athletes head out to fields, ice and gymnasiums to practice and compete in a wide variety of sports. There's no doubt that these sports are a great way for kids and teens to stay healthy, as well as learn important leadership and team-building skills. But medical researchers have discovered young athletes, especially kids and teens, often don't recognize their own limitations; especially when they have a concussion.

Youth concussion can have long term impacts on young athletes such as their health, memory, learning and even their survival. This has lead to a new effort to improve prevention, recognition and response to sports-related concussion.

That's where you come in. It's your responsibility, as a coach, to help recognize and make the call to pull an athlete off the field, ice, or court if you think that player might have a concussion.

LESSON 1

- *All* concussions are serious.
- Concussions can happen in *any* sport or recreational activity.
- Recognizing and responding properly to concussions when they first occur can help prevent further injury *or even death*.

Understanding Concussion

A concussion is a type of traumatic brain injury—or TBI—caused by a bump, blow, or jolt to the head or by a hit to the body that causes your head and brain to move rapidly back and forth.

This sudden movement can literally cause the brain to bounce around or twist in the skull, stretching and damaging the brain cells and creating chemical changes in the brain.

What you might not know is that these chemical changes make the brain more vulnerable to further injury. During this window of vulnerability the brain is more sensitive to any increased stress or injury, until it fully recovers.

Unlike a broken arm, or other injuries that you can feel with your hands or see on an x-ray, you can't see a concussion. It is a disruption of how the brain works. It is not a "bruise to the brain." That is why brain CAT scans and MRIs are normal with most concussions.

Causes of Concussion

- A knock to the head from a fall…
- A jolt to the torso from a collision…
- A hit to the head from a stick or ball…

A concussion can occur from any type of contact such as colliding with a player, a goalpost, the ground, or another obstacle. Concussions can also occur outside of sports, ranging from bumping your head on a door to being in a car crash.

Don't be fooled! Even what may seem like a mild bump to the head can actually be serious.

Potential Consequences of a Concussion

Concussions affect people differently. While most athletes with a concussion recover quickly and fully, some will have symptoms that last for days, or even weeks. A more serious concussion can last for months or longer.

Not giving the brain enough recovery time after a concussion can be dangerous. 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.

Yes, while rare, permanent brain damage and death are two potential consequences of not identifying and responding to a concussion in a proper or timely manner.

That's why is it *incredibly* important for you to pull an athlete from play if you suspect he or she has a concussion.

Did You Know?

- Most concussions occur without loss of consciousness.
- Athletes who have, at any point in their lives, had a concussion have an increased risk for another concussion.
- Young children and teens are more likely to get a concussion and take longer to recover than adults.

LESSON 2

What to Watch for

As a coach you're the first defense, ready to jump in to help if something seems "off"—even when an athlete doesn't know it or want to admit it.

Remember, you can't see a concussion, like you can see a broken arm, and there is no one single indicator for concussion. Instead, recognizing a concussion requires watching for different types of signs or symptoms.

So to help recognize a concussion, you should watch for and ask others to report the following two things among your athletes:

1. A forceful bump, blow, or jolt to the head or body that results in rapid movement of the head.

—and—

2. Any concussion signs or symptoms, such as a change in the athlete's behavior, thinking, or physical functioning.

Keep the following list of signs and symptoms on hand. Athletes who exhibit or report ***one or more*** of the signs and symptoms listed below, or simply say they just "don't feel right" after a bump, blow, or jolt to the head or body, may have a concussion.

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 and some symptoms may not show up for hours or days. For example, in the first few minutes the athlete might be slightly confused or appear a little bit dazed, but an hour later they can't recall coming to the practice, game, or event.

So assess the player, then assess the player again. Make sure that the athlete is supervised for at least one or two hours after you suspect a concussion. Also, talk to the athlete's parents about watching for symptoms at home and when the athlete returns to school.

The key is to keep a list of concussion signs and symptoms in your clipboard, and to use it while repeatedly checking on your athlete with a suspected concussion. You can order CDC's free "Heads Up" materials with concussion signs and symptoms to place on your clipboard for all practices and games, and post in the locker rooms.

SIGNS OBSERVED BY COACHING STAFF	SYMPTOMS REPORTED BY ATHLETES
Appears dazed or stunned	Headache or "pressure" in head
Is confused about assignment or position	Nausea or vomiting
Forgets an instruction	Balance problems or dizziness
Is unsure of game, score, or opponent	Double or blurry vision
Moves clumsily	Sensitivity to light
Answers questions slowly	Sensitivity to noise
Loses consciousness *(even briefly)*	Feeling sluggish, hazy, foggy, or groggy
Shows mood, behavior, or personality changes	Concentration or memory problems
Can't recall events *prior* to hit or fall	Confusion
Can't recall events *after* hit or fall	Just not "feeling right" or "feeling down"

Danger Signs

If the signs or symptoms get worse, you need to consider it a medical emergency.

In rare cases, a dangerous blood clot may form on the brain in an athlete with a concussion and squeeze 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, he or she exhibits ***one or more*** of the following danger signs:

- One pupil larger than the other
- Drowsiness or inability to wake up
- A headache that gets worse and does not go away
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Inability to recognize people or places
- Increasing confusion, restlessness, or agitation
- Unusual behavior
- Loss of consciousness *(even a brief loss of consciousness should be taken seriously)*

LESSON 3

When You Suspect a Concussion

Pulling someone out of the middle of a practice, game, or event is never an easy thing, especially if an athlete tells you that nothing is wrong.

But we know that your top priority is keeping your athletes safe and preparing them for the future—both on and off the field.

That's why we encourage you to follow these steps, which are part of CDC's "Heads Up" four-step action plan:

1. **Remove the athlete from play.** Look for the 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 a health care professional experienced in evaluating for concussion.** 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 about the possible concussion and give them the CDC fact sheet on concussion for parents.** This fact sheet can help parents monitor the athlete for sign or symptoms that appear or get worse once the athlete is at home or returns to school.

4. **Keep the athlete out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says it's OK for the athlete to return.** In the case of suspected concussion, the decision about when to return to practice or play is a medical decision.

"Toughing it Out" isn't Strong—It's Dangerous

Sometimes people believe that it shows strength and courage to play when you're injured. Not only is that belief *wrong*, it can put a young athlete at risk for serious injury.

Don't let others—fans, parents, or teammates—pressure you or the injured athlete to continue playing. As you've probably experienced, some athletes may try telling you that s/he is "just fine" or that s/he can "tough it out."

Tell them that taking a time out is *not* a sign of weakness, and that playing with a concussion is dangerous. Don't shy away from sharing this information with parents and other team supporters, either.

LESSON 4

Why Take a Time Out?

Resting after a concussion is *critical* because it helps the brain recover.

Remember those brain cells we talked about earlier that aren't working properly? Well, they need the body's energy to heal. So, if an athlete with a concussion spends that energy exercising, trying to score a goal, or doing other recreational activities, that means there's less energy available to help the brain repair itself.

That's why ignoring concussion symptoms and trying to "tough it out" often makes symptoms worse and can make recovery take longer, sometimes for months. Even activities that involve learning and concentration, such as studying, working on the computer, or playing video games, can cause concussion symptoms to reappear or get worse.

It's up to a healthcare professional to determine if an injured athlete's concussion symptoms have been reduced significantly, and when he or she should slowly and gradually return to daily activities.

Both physical and cognitive activities—such as concentration and learning—should be carefully managed and monitored by a health care professional until they give you and your athlete the green light.

At first, be prepared for your player to offer resistance—the player might feel frustrated, sad, or even angry about having to sit out.

- Talk to them about it.
- Be honest about the risks of getting put back into play too soon.
- Offer your support and encouragement.
- Tell them that as the days go by, they'll feel better.

Progressive Return to Activity Program

Back to Sports

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.

There 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.

Step 1 Begin with light aerobic exercise, but only to increase an athlete's heart rate. This translates into 5 to 10 minutes on an exercise bike, walking, or light jogging. There should be no weight lifting, jumping or hard running at this point.

Step 2 Add activities that increase an athlete's heart rate, and incorporate limited body or head movement. This includes moderate jogging, brief running, moderate-intensity stationary biking, and moderate-intensity weightlifting (reduced time and/or reduced weight from your typical routine).

Step 3 Bump it up a notch to heavy, non-contact physical activity. This includes sprinting/running, high-intensity stationary biking, the player's regular weightlifting routine, and non-contact sport-specific drills (in 3 planes of movement).

Step 4 Reintegrate the athlete in practice sessions, even full contact in controlled practice if appropriate for the sport.

Step 5 Put him or her back into play.

During each step, keep your eyes open for returning symptoms, including fuzzy thinking and concentration. Any symptoms need to be reported to the athlete's health care professional. If an athlete's symptoms come back, or s/he exhibits new symptoms with this increased activity, stop these activities and take it as a sign that the athlete is pushing him/herself too hard.

After additional rest, and an ok from their health care professional, the athlete may start over again at Step 1.

The athlete should *only* graduate to the next level of activity if s/he does not experience concussion symptoms.

Back to the Books

Supporting a student recovering from a concussion requires a collaborative approach among school professionals, health care professionals (including a certified athletic trainer), parents, and students.

Not only can they help ease the transition, and make accommodations for a student if needed, they can also keep an eye out for problems like inability to pay attention, remember or learn new information; inappropriate or impulsive behavior during class; or other concussion symptoms such as fatigue or headaches.

Students who return to school after a concussion may need to:

- Take rest breaks as needed,
- Spend hours at school,
- Be given more time to take tests or complete assignments,
- Receive help with schoolwork, and/or
- Spend less time on the computer, reading, or writing.

As the student's symptoms decrease, the extra help or support can be gradually removed.

Remember

Concussions affect people differently. While most athletes with a concussion recover quickly and fully, some will have symptoms that last for days, or even weeks. A more serious concussion can last for months or longer.

LESSON 5

By taking this training—and taking concussions seriously—you've shown your dedication to your athletes and their safety.

Now, it's time to take what you've learned to your coaching staff, team, parents, school professionals, and community. Generating the support you'll need when it comes to identifying and responding to a concussion now will help later when you need to pull out an athlete because you suspect a concussion.

Use the following preparedness checklists to guide you through pre- , mid- , and post-seasons.

Pre-season Checklist

- Check with your league, school, or district about concussion policies.
- Concussion policy statements should include the school or league's commitment to safety, a brief description of concussion, and information on when athletes can safely return to play. Parents and athletes should sign the concussion policy statement at the beginning of each sports season.
- Win the support and involvement of other school or league officials—such as principals, certified athletic trainers, other coaches, school nurses, and parent-teacher associations—to help ensure that school rules and concussion policies are in place before the first practice.

Create a concussion action plan.

- To ensure that concussions are identified early and managed correctly, have an action plan in place before the season starts. You can use the "Heads Up" four-step action plan and include it in your league, school, or district's concussion policy.

Educate athletes, parents, and other coaches about concussion.

- Dedicate a team meeting to talk about concussion and before the first practice, talk to athletes, parents, other coaches, and league and school officials about the dangers of concussion; potential long-term consequences of concussion; and your concerns as well as your expectations of safe play.
- Show concussion videos available on CDC's website. Pass out concussion fact sheets for athletes and for parents at the beginning of the season, and again if a concussion occurs.
- Remind athletes to *immediately* tell the coaching staff if they suspect that they have a concussion or that a teammate has a concussion.

Monitor the health of your athletes.

- Review the signs and symptoms of concussion, and keep the "Heads Up" four-step action plan with you at games and practices. (Carry the "Heads Up" clipboard with you and fill out the pocket card or clipboard sticker so that information about signs, symptoms, and emergency contacts is readily available.)
- Make sure to ask if an athlete has ever had a concussion, and insist that your athletes be medically evaluated and in good condition to participate.
- Prior to the first practice, determine whether your school or league has or would consider conducting pre-season, baseline testing. Also known as neurocognitive tests, these tests help assess brain function (including learning and memory skills, ability to pay attention or concentrate, and how quickly someone can think and solve problems) and can be used again during the season if an athlete has a concussion, to identify the effects of the injury. Identify the appropriate health care professional to run this program.

Mid-season Checklist

Insist that safety comes first.

- Teach and remind athletes of safe-playing techniques. Encourage them to follow the rules of play; to practice good sportsmanship at all times; and to consistently wear the right protective equipment (that fits properly, is well-maintained, and worn correctly) for their activity.

Teach your athletes that it's not smart to play with a concussion.

- Remind your athletes and everyone who influences them—teammates, fans, parents, fellow students—playing with a concussion is dangerous.

Work closely with other league or school officials.

- Be sure that appropriate staff is available for injury assessment and referrals for further medical care.
- Enlist certified athletic trainers, school nurses, or appropriate school or league officials to monitor any changes in the athlete's behavior or school work that could indicate that the student has a concussion. Ask them to report concussions that occurred during the season. This will help in monitoring injured athletes who participate in multiple sports throughout the year.

Post-season Checklist

Keep a concussion log.

- Work with a certified athletic trainer, school nurses, and other school or league staff to review injuries that occurred during the season. Discuss with other staff any needs for better concussion prevention or response preparations.

Review your concussion policy and action plan.

- Discuss any need for improvements to your concussion policy or action plan with appropriate health care professionals and league or school staff, especially in light of what your log reveals.

SUMMARY

We hope, through this module, that you've come to better understand the impact sports-related concussion can have on youth athletes. If we, as coaches and parents, come to better understand this impact, become more focused on its recognition, and more resolved to pull athletes from the game when there is a possibility of concussion, we will have come a long way towards reducing the impact of this all too common injury.

And always remember — When in Doubt, Sit them Out!

To learn more about concussion or to order concussion educational materials—free-of-charge—contact the CDC at 1-800-CDC-INFO or visit: www.cdc.gov/Concussion.