INTRODUCTION

Each day in our nation, hundreds of thousands of young athletes head out to the 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. The purpose of this training module is to help you better understand the impact of concussion, as well as how to recognize it in your players.

“ It’s absolutely essential that we have education for coaches so that if they recognize any of these symptoms, they can immediately remove the youth from competition.”
LESSON 1

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, creating chemical changes in the brain and sometimes stretching and damaging the brain cells. What you might not know is that these chemical changes make the brain 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.

There are many potential causes of concussions, including: 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.

Everything above the neck, essentially above the clavicles, the neck and the head, if there are injury symptoms referable to the cervical spine, referable to the brain, it is absolutely not safe to continue the athletic contest.

Concussions affect people differently. While most athletes with a concussion feel better within a couple of weeks, some will have symptoms for months or longer. Not giving the brain enough recovery time can be dangerous. A repeat concussion during recovery - usually within hours, days, or 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. 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 it is incredibly important for you to pull an athlete you suspect has a concussion from play.

“You can lose a child by being inattentive, by not getting a rapid attention to the disorder.”

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.
LESSON 2

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’s no one single indicator for concussion. Instead, recognizing a concussion requires watching for different types of signs or symptoms.

To help recognize a concussion, you should watch for and ask others to report the following two things among your athletes. One, a forceful bump, blow or jolt to the head or body that results in rapid movement of the head, and two, 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 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 game. 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 the concussion. Also, talk to the athlete’s parents right away about watching for symptoms at home and when the athlete returns to school.

The issue of concussions in youth sports is important because you’re talking about a potential threat to the development of that youngster’s brain. And certainly their brain is what is going to drive their development, their livelihood, their learning, their social interaction, and all those things are critically important. Anything that potentially affects that in a negative way has to be fully reckoned with and dealt with."

The key is to keep a list of concussion signs and symptoms on hand to use while repeatedly checking on your athlete with a suspected concussion. You can download CDC’s HEADS UP app or materials with concussion signs and symptoms so you have it with you at all games and practices.

If the signs or symptoms get worse, you need to consider it a medical emergency. In rare concussion cases, a dangerous blood clot may form on the brain 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, the athlete 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

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.

“First responsibility of any coach is the physical and emotional well-being of the student athletes. Today, you’ve gotta learn to get yourself out of the game, and then as a coach, you’ve gotta be able to see when you’re putting a player at risk, and you gotta get that person out.”

“And equally important for parents to be aware of these symptoms as well. Both from the standpoint of understanding why somebody needs to come out of the contest, but also because the parents are with the athletes more than the athletic trainers, especially nights and weekends.”

That’s why we encourage you to follow these steps, which are part of CDC’s HEADS UP action plan:

STEP ONE:
Remove the athlete from play. When in doubt, sit them out!

STEP TWO:
Keep an athlete with a possible concussion out of play the same day of the injury and until cleared by a health care provider. Do not try to judge the severity of the injury yourself. Only a health care provider should assess an athlete for a possible concussion. After you remove an athlete with a possible concussion from practice or play, the decision about return to practice or play is a medical decision that should be made by a health care provider.

As a coach, recording the following information can help a health care provider 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 and if so, for how long
- Any memory loss right after the injury
- Any seizures right after the injury
- Number of previous concussions

STEP THREE:
Inform the athlete’s parent(s) about the possible concussion. Let them know about the possible concussion and give them the HEADS UP Fact Sheet For Parents. This fact sheet can help parents watch the athlete for concussion signs or symptoms that may show up or get worse once the athlete is at home or returns to school.

STEP FOUR:
Ask for written instructions from the athlete’s health care provider on return to play. These instructions should include
information about when they can return to play and what steps you should take to help them safely return to play.

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. 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 he or she is “just fine” or that he or she can “tough it out.” Tell them that taking a timeout 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.

“...But, what we have to learn now is how to distinguish between pain and injury, and we gotta teach that to the players. But more importantly, I think, because they are tough, because they will continue to go when they’re in pain, we’ve gotta learn to see all of the symptoms, especially when it comes to something as serious as head trauma, to get them off the field with much greater frequency. And I think it may interrupt the games, and I think that’d be a good thing.”
LESSON 4

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.

“We see kids that just really struggle because they’re trying to get their work done, they’re staying up late to do their homework, they’re having trouble sleeping as well. And all that snowballs, and results in their recovery not being as quick as it could be.”

Both physical and cognitive activities - such as concentration and learning - should be carefully managed and monitored by a health care professional. Supporting a student recovering from a concussion requires a collaborative approach among school professionals, health care professionals (including a certified athletic trainer, when available), parents, and students. Not only can they help ease the transition, and make accommodations for a student, they can also keep an eye out for concussion symptoms.

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

- Take rest breaks,
- Spend fewer 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. 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. Remember, this is a gradual process. These steps should not be completed in one day, but instead over days, weeks, or months.

BASELINE:

Athlete is back to their regular school activities, is no longer experiencing symptoms from the injury when doing normal activities, and received the green-light from their health care provider to begin the return to play process.

An athlete should only move to the next step if they do not have any new symptoms at the current step.

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 (which means reduced time and reduced weight from an athlete’s typical routine).

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

STEP 4:
Reintegrate the athlete in practice sessions, including, if appropriate for the sport, full contact in controlled practices.

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 he or she exhibits new symptoms with this increased activity, stop these activities and take it as a sign that the athlete is pushing him or herself too hard. After additional rest, and an okay from their health care professional, the athlete may start over again at the previous step.

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 the player about it. Be honest about the risks of being put back into play too soon. Offer your support and encouragement. Tell the player that as the days go by, he or she should start feeling better.
LESSON 5

While sports are a great way to help young athletes stay healthy and do well in school, for most athletes, playing sports is about having fun. This means playing in an environment that supports good sportsmanship, hard work, and positive coaching.

As a youth sports coach, you help shape the experience for athletes on the playing field. You also play a critical role in creating a culture of safety around concussion and empowering young athletes to report concussion symptoms.

You can take steps to help improve the culture of concussion by:

- Teaching your athletes ways to lower their chances of getting a concussion.
- Expecting safe play, modeling safe play, and reinforcing safe play.
- Setting time aside throughout the season to educate your athletes about concussion.
- Creating an environment that includes positive messages on concussion reporting.

Teach your athletes ways to lower their chances of getting a concussion.

Every sport is different, but there are skills and techniques you can teach athletes to help them avoid hits to the head. Contact your league or sport governing body to learn more.

Expect safe play, model safe play, and reinforce safe play.

As many as a quarter of concussions result from aggressive or illegal play. As a coach, it is essential for you to expect, model, and reinforce fair play, safety, and sportsmanship. This means ensuring athletes avoid unsafe actions such as:

- Striking another athlete in the head;
- Using their head or helmet to “spear” another athlete;
- Making illegal contacts;
- Checking, tackling, or colliding with an unprotected opponent; and
- Purposely injuring another athlete.

Set time aside throughout the season to educate your athletes about concussion.

Talk with athletes often about concussion. Make sure they know how to identify symptoms and know what to do if they think they or one of their teammates have a concussion.

Remind athletes that safety comes first. When in doubt, sit it out!

Reinforce the importance of reporting a possible concussion no matter how important the game or event seems at the time. Encourage your athletes to support their teammates who sit out of play for a possible concussion or who are recovering from a concussion.

Post information about concussion in locker rooms and places where athletes practice and compete. Also, be sure to keep the HEADS UP app or pocket card with a list of concussion signs and symptoms on hand. This shows athletes that you take concussions seriously and it may help you identify a possible concussion during play.
Create an environment that includes positive messages on concussion reporting.

Young athletes depend on you for guidance. It is up to you to foster an environment where young athletes feel comfortable reporting concussion symptoms, no matter how important the game or event seems. Take the time to learn about concerns your athletes might have about reporting their concussion symptoms and make reporting a priority. Young athletes’ beliefs about their coaches’ expectations and feelings will help determine whether they feel comfortable reporting a possible concussion. When coaches deliver positive messages and praise athletes who report concussion symptoms, athletes feel more comfortable reporting an injury.

**DID YOU KNOW?**

Many athletes hide their concussion symptoms, especially during an important game or championship.

Researchers interviewed almost 800 high school athletes during the course of a season, and found that:

- 69 percent of athletes with a possible concussion played with concussion symptoms.
- 40 percent of those athletes said their coach was not aware they had a possible concussion.

When young athletes receive negative messages from their coaches, they may feel pressured to keep silent and continue playing with concussion symptoms. This can be dangerous and places your athletes at risk for further damage that may take them out of play for an entire season, or longer.

Together, we can build a culture in youth sports where athletes take steps to lower their chances of getting a concussion and recognize and report concussion symptoms.

By taking this course and using what you learned, you are well positioned to improve the culture of concussion. Your actions can help create a safe environment for young athletes—so that they can stay healthy, active, and thrive both on and off the playing field.

And always remember — **WHEN IN DOUBT, SIT THEM OUT!**

**THANKS COACH!**

Thanks for teaching me about teamwork and leadership. Thanks for showing me that sports help me stay healthy and do well in school. And thank you for teaching me about concussion. Letting me know that I should tell you if I think I have a concussion. And how to protect my head and brain, because one day I want to be: A teacher. An astronaut. A scientist. Or a coach—just like you. Thank you for protecting my future.