Concussion Facts Parents & Caregivers



What is a concussion?

When an athlete gets their "bell rung" or gets "lit up" they have suffered a concussion. Concussions are a type of traumatic brain injury (TBI). When a child or adolescent sustains a concussion, their brain may bounce or twist inside the skull, sometimes stretching or damaging brain cells and causing chemical changes within the brain. This movement interrupts the brain's functioning and can impact your child physically, emotionally, cognitively, and behaviorally.



How do concussions happen?

Concussions are caused by a bump, blow, hit, or jolt to the head or body that moves the head and brain rapidly back and forth. Common causes are falls and being hit against or by another person or object. Your child's head does not have to be struck to cause a concussion - a body-to-body hit has the potential to cause a concussion.



Can concussion risk be reduced?

YES! There are ways to reduce your child's risk of a concussion. Talk to your child about practicing good sportsmanship and following coaches' instructions for safe game play. Make sure bicycle, athletic, and ATV helmets fit properly and are worn consistently. While a helmet doesn't prevent a concussion, it does protect your child's head from more severe head injuries. Make sure your child's school and sports organizations have established concussion policies and protocols; they should have procedures in place for coach training and returning to learn and play after a concussion.



Can my child keep playing after a concussion?

The brain needs time to heal after a concussion. A youth athlete who continues to play or who returns to play too soon - before the brain has finished healing - has a greater chance of getting another concussion. A repeat concussion that occurs while the brain is still healing can be very serious and can affect a child for a lifetime. It can even be fatal. If you suspect your child has sustained a concussion during a practice or a game, make sure they are immediately removed from play. Do not allow your child to return to play on the same day as the injury.



SIGNS AND SYMPTOMS

There are many signs and symptoms of a concussion. Concussion symptoms may appear minutes, hours, or days after the initial injury. Symptoms may be physical, emotional, behavioral, or cognitive (affect thinking). You may observe these signs in your child or your child may report symptoms to you.

Physical

- Headache or pressure in the head
- Dizziness, balance problems
- · Nausea or vomiting
- Sensitivity to noise, ringing in ears
- Sensitivity to light, blurry or double vision
- · Feels tired
- · Tingling
- Does not "feel right"
- · Seems dazed, stunned

Emotional/Behavioral

- · Becomes irritable
- Becomes sad or depressed
- More emotional than
 usual
- Anxious or nervous
- Personality or behavioral changes, such as becoming impulsive

Cognitive

- Trouble thinking clearly
- Trouble concentrating
- Trouble remembering, can't recall events before or after the hit
- Feels sluggish, hazy, foggy, or groggy
- Feels "slowed down"
- Repeats questions or answers questions more slowly
- Confusion
- Forgets routine things

DANGER SIGNS

If one or more of these signs emerges after a hit to the head or body, **IMMEDIATELY** call 911 or take your child to the nearest emergency room.

- One pupil larger than the other
- Drowsy or cannot wake up
- Headache that gets worse and does not go away
- · Slurred speech, weakness, numbness
- Decreased coordination
- · Loss of consciousness

- Repeated vomiting or ongoing nausea
- Shaking or twitching (convulsions or seizures)
- Unusual behavior, increased confusion, restlessness, or agitation

Learn more: concussion.health.ok.gov | 405.271.3430

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RETURN TO PLAY:

BACK TO SPORTS AFER A CONCUSSION



Before you begin:



An athlete's progression through the return to play protocol should be monitored by a designated return to play case manager, such as a coach, athletic trainer, or school nurse.



Each step should take a *minimum* of 24 hours; it should take at least one week to proceed through the full return to play protocol. This process can take several weeks or months, depending on the individual and the injury.



If concussion symptoms return at any step during the return to play process, the protocol must be stopped. The athlete may only resume return to play activities when they have been symptom-free for a *minimum* of 24 hours. Return to play progression must resume at the step *before* symptoms reemerged.

Example: An athlete going through return to play protocol has progressed to Step 5 (practice and contact) when concussion symptoms return. Return to play activities must be halted until the symptoms stop and remain absent for at least 24 hours. At that point, the return to play protocol resumes; however, the athlete restarts at Step 4 (heavy non-contact activity), the step before concussion symptoms reemerged.

WHEN IN DOUBT, SIT THEM OUT

Athletes should not begin the return to play protocol on the same day of the injury. A licensed health care professional must evaluate the athlete and provide written clearance for the athlete to return to activity. Continuing to play, or returning to play too soon, after a concussion increases the chances of sustaining another concussion. A repeat concussion that occurs while the brain is still healing from the first injury can be very serious and can affect an athlete for a lifetime. It can even be fatal.

RETURN TO PLAY PROTOGOL

STEP 1: BACK TO REGULAR ACTIVITIES



Goal: Complete normal activities and remain symptom-free for at least 24 hours



STEP 2: LIGHT AEROBIC ACTIVITY



Goal: Minimal increase in heart rate

Time: 5-10 minutes

Feels easy: walking s 2 mph, stretching exercises

NO weight lifting, resistance training, jumping, or hard running.



STEP 3: MODERATE ACTIVITY



Goal: Noticeable increase in heart and respiratory rates with limited body and head movement

Time: Less time than typical routine

Feels fairly easy to somewhat hard: brisk walking (15 min/mile)

NO head impact activities. NO helmet or other equipment use.



STEP 4:
HEAVY
NON-CONTACT
ACTIVITY



Goal: High-intensity activity without contact

Time: Close to typical routine

Non-contact training drills in full uniform, weight lifting, resistance training, running, high-intensity stationary cycling.



STEP 5: PRACTICE AND CONTACT



Goal: Return to practice, full contact as applicable to sport



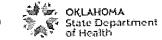
STEP 6: RETURN TO PLAY



Goal: Return to full game play, practice, and competition



Learn more: concussion.health.ok.gov | 405.271.3430





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RETURN TO LEARN PROTOCOL

Every student will experience a concussion differently. One student may spend an extended time in one return to learn phase, while another may not need a particular phase at all.



No school

A licensed health care provider should provide written clearance for a student to return to school after a concussion. A concussion management team should be assembled and begin to develop a plan for the student.



Half-day attendance with accommodations

The concussion management team leader should meet with the student and their parents to review information from the health care provider (e.g., current symptoms and recommended accommodations), concussion management team member roles and responsibilities, and the initial concussion management plan.



Full-day attendance with accommodations

Monitor the student for worsening or reemerging symptoms during class. The concussion management team should be communicating on a regular basis to evaluate progress and collaborating to revise the concussion management plan as needed based on any changes in symptoms or symptom severity.



Full-day attendance without symptoms

When the student can participate in all classes and has been symptom-free for at least 24 hours, they may begin the return to play protocol for physical activities at school (e.g., gym, PE classes, athletics participation).



Full school and extracurricular involvement

For most students, accommodations for concussion recovery are temporary and informal. When recovery is prolonged, however, formal support services (e.g., an individualized education plan, a response to intervention protocol, or 504 plan) may be needed to support the student.

To learn more about supporting students returning to learn after a concussion, visit https://concussion.health.ok.gov

Contact us: concussion@health.ok.gov | 405.271.3430



OKLAHOMA

State Department

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RETURN TO LEARN:

BACK TO GLASS AFTER A CONGUSSION

WHAT IS A CONCUSSION & HOW CAN IT IMPACT LEARNING?

A concussion is a type of traumatic brain injury (TBI) caused by a bump, blow, or jolt to the head or body that moves the head and brain rapidly back and forth, causing the brain to bounce or twist in the skull. Concussion symptoms can impact a student physically, cognitively, and emotionally. These symptoms may disrupt the student's ability to learn, concentrate, keep track of assignments, process and retain new information, tolerate light and noise, and appropriately regulate emotions and behaviors. School professionals play a vital role in creating a culture that values safety and open communication, encourages students to report symptoms, and supports students throughout the process of recovery. Teachers and other school staff can provide symptombased classroom accommodations while the student's brain continues to heal from the concussion. Supports can be lifted as the brain heals and concussion symptoms no longer keep the student from full classroom participation.

After a concussion, it is as important to rest the brain as it is the body. Students will need an initial break, usually 2 to 3 days, from cognitive activities such as problem solving, concentrating or heavy thinking, learning new things, memorizing, reading, texting, computer or mobile device time, video games, and watching television. Upon clearance from their health care provider, students can gradually return to learning activities.

Providing appropriate support for a student returning to school after a concussion requires a collaborative team approach. Teachers, school counselors, school nurses, school administration, parents/guardians, the student, and the student's health care provider are examples of these team members. Continuous communication between students, caregivers, health care providers, and school staff is vital to ensure the student's individual needs are understood and consistently met by their support team throughout recovery.

CONCUSSION SIGNS TO WATCH FOR IN THE CLASSROOM

- Increased problems paying attention or concentrating
- · Increased problems remembering or learning new information
- Longer time needed to complete tasks or assignments
- Difficulty organizing tasks or shifting between tasks
- Inappropriate or impulsive behavior during class
- Greater writability or more emotional than usual
- Less ability to cope with stress
- Difficulties handling a stimulating school environment (lights, noise, etc.)
- Physical symptoms (headache, fetigue, nausea, dizziness)

EXAMPLES OF SCHOOL SUPPORTS BASED ON CONCUSSION SYMPTOMS



- Reduce assignments and homework to key tasks only and base grades on adjusted Work.
- Provide extra time to work on assignments and take tests.
- Provide written instructions, study guides, and/or help for classwork.
- Limit tests to one per day.
- Allow students to demonstrate understanding of a concept orally instead of in writing.
- Provide class notes and/or allow students to use a computer or tape recorder to record classroom information.



- Allow time to visit the school nurse for treatment of headaches or other symptoms.
- Provide rest breaks.
- Provide extra time to go from class to class to avoid crowds.
- If students are bothered by light, allow sunglasses, blue light blocking glasses, or sitting in a less bright location (e.g., draw blinds, sit them away from windows).
- If students are bothered by noise, provide noise-reducing headphones and a quiet place to study, test, or spend lunch of recess.
- Do not substitute concentration activities for physical activity (e.g., do not assign reading instead of PE)



- Develop an emotional support plan (e.g., identify an adult with whom they can talk if feeling overwhelmed).
- C . Locate a quiet place students can go when feeling overwhelmed.
 - Students may benefit from continued involvement in certain extracurricular activities, such as organizational or academic clubs, as approved by their health care provider.
 - Arrange preferential seating, such as moving the student away from windows (e.g., bright light) or talkative peers, or closer to the teacher.

Provide atplicture and consistency: make sore all leavillars are using the same strategies.

Concussion Facts Youth Athletes



What is a concussion?

When an athlete gets their "bell rung" or gets "lit up" they have suffered a concussion. Concussions are a type of traumatic brain injury (TBI). Concussions are caused by a bump, blow, hit, or jolt to the head or body that moves the head and brain rapidly back and forth. Falling or being hit against or by another person or object are common causes of concussions. Your head doesn't have to be struck to cause a concussion; for example, a body-to-body hit has the potential to cause a concussion.



What does a concussion do to my brain?

When you experience a concussion, your brain may bounce or twist inside your skull, sometimes stretching or damaging brain cells and causing chemical changes within the brain. A concussion interrupts your brain's functioning. When your brain is injured by a concussion, the injury can affect you physically, emotionally, behaviorally, and/or cognitively (how you think).



Can the risk of concussion be reduced?

YES! There are ways to reduce your risk of a concussion. Practice good sportsmanship and follow your coach's instructions for safe game play. If you play contact sports, learn the fundamentals and appropriate techniques. Make sure bicycle, athletic, and ATV helmets fit properly and are worn consistently. While a helmet doesn't prevent a concussion, it does protect your head from more severe injuries.



Can I keep playing after a concussion?

Your brain needs time to heal after a concussion. If you continue to play or return to play too soon - before your brain has finished healing - you have a greater chance of getting another concussion. A repeat concussion that occurs while your brain is still healing can be very serious and can affect you for a lifetime. It can even be fatal. If you think you may have sustained a concussion during a practice or game, immediately talk to your coach, game official, athletic trainer, or parent/guardian and remove yourself from play. Do not return to play on the same day as the injury. You need to see a health care professional to be evaluated for a concussion and given written clearance to return to play.



SIGNS AND SYMPTOMS

There are many signs and symptoms of a concussion. Concussion symptoms may appear minutes, hours, or days after the initial injury. Symptoms may be physical, emotional, behavioral, or cognitive (affect thinking). You may notice these symptoms yourself or someone else may observe them. If you experience any of these symptoms after a blow to the head or body, tell someone immediately.

Physical

- Headache or pressure in the head
- Dizziness, balance problems
- · Nausea or vomiting
- Sensitivity to noise, ringing in ears
- Sensitivity to light, blurry or double vision
- Feel tired
- Tingling
- · Do not "feel right"
- Seem dazed, stunned

Emotional/Behavioral

- Recome irritable.
- Become sad or depressed
- More emotional than usual
- Anxious or nervous
- Personality or behavioral changes such as becoming impulsive

Cognitive

- · Trouble thinking clearly
- · Trouble concentrating
- Trouble remembering, can't recall events before or after the hit
- Feel sluggish, hazy, foggy, or groggy
- Feel "slowed down"
- Repeat questions or answer questions more slowly
- Confusion
- Forget routine things

DANGER SIGNS

If one or more of these symptoms emerges after a hit to the head or body, IMMEDIATELY call 911 or get someone to drive you to the nearest emergency room.

- One pupil larger than the other
- Drowsy or cannot wake up
- Headache that gets worse and does not go away
- Slurred speech, weakness, numbness
- Decreased coordination
- · Loss of consciousness

- Repeated vomiting or ongoing nausea
- Shaking or twitching (convulsions or seizures)
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RETURN TO PLAY:

BACK TO SPORTS AFTER A CONGUSSION



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RETURN TO PLAY PROTOGOL

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Goal: Complete normal activities and remain symptom-free for at least 24 hours



STEP 2: LIGHT AEROBIC ACTIVITY



Goal: Minimal increase in heart rate

Time: 5-10 minutes

Feels easy: walking s 2 mph, stretching exercises

NO weight lifting, resistance training, jumping, or hard running.



STEP 3: MODERATE ACTIVITY



Goal: Noticeable increase in heart and respiratory rates with limited body and head movement

Time: Less time than typical routine

Feels fairly easy to somewhat hard: brisk walking (15 min/mile) NO head impact activities. NO helmet or other equipment use.



STEP 4: HEAVY NON-CONTACT ACTIVITY



Goal: High-intensity activity without contact

Time: Close to typical routine

Non-contact training drills in full uniform, weight lifting, resistance training, running, high-intensity stationary cycling.



STEP 5: PRACTICE AND CONTACT



Goal: Return to practice, full contact as applicable to sport



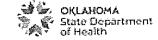
STEP 6: RETURN TO PLAY



Goal: Return to full game play, practice, and competition



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Sudden Cardiac Arrest Information Sheet for Student Athletes and Parents/Guardians

What is Sudden Cardiac Arrest?

Sudden Cardiac Arrest (SCA) is the sudden onset of an abnormal and lethal heart rhythm, causing the heart to stop pumping adequately. When this happens, blood stops flowing to the brain and other vital organs, and, if left untreated, can quickly result in death.

How common is Sudden Cardiac Arrest?

While SCA in student athletes is rare, it is the leading medical cause of death in young athletes. The chance of SCA occurring to any individual student athlete is estimated to be about one in 80,000 to 100,000 per year.

What causes Sudden Cardiac Arrest in student athletes?

SCA is caused by several structural and electrical conditions of the heart. These conditions predispose an individual to have an abnormal heart rhythm. SCA is more likely during exercise or physical activity, placing student athletes with undiagnosed heart conditions at greater risk. Some of these conditions are listed below.

- > Inherited conditions present at birth of the heart muscle (passed on from family): Hypertrophic Cardiomyopathy (HCM), Arrhymogenic Right Ventricular Cardiomyopathy (ARVC), and Marfan Syndrome
- > Inherited conditions present at birth of the electrical system: Long QT Syndrome (LQTS), Catecholaminergic Polymorphic Ventricular Tachycardia, and Brugada Syndrome (BrS)
- Noninherited conditions (not passed on from the family, but still present at birth): Coronary artery abnormalities, Aortic valve abnormalities, Non-compaction Cardiomyopathy, and Wolff-Parkinson-White Syndrome (occurs from an extra conducting fiber in the heart's electrical system)
- Conditions not present at birth but acquired later in life: Commotio Cordis (occurs from a direct blow to the chest), Myocarditis (infection or inflammation of the heart), and Recreational/Performance Drug Use
- > Idiopathic: Sometimes the underlying cause of Sudden Cardiac Arrest is unknown, even after autopsy.

What are the warning signs that Sudden Cardiac Arrest may occur?

- > Fainting, passing out, or seizure especially during or right after exercise
- > Chest pain or discomfort especially with exercise
- > Excessive Shortness of breath with exercise
- > Racing heart or irregular heartbeat with no apparent reason
- > Dizziness or lightheadedness especially with exercise
- > Unusual Fatigue/Weakness with exercise
- Fainting from emotional excitement, emotional distress, or being startled
- > Family history of sudden cardiac arrest prior to the age of 50

While a heart condition may have no warning signs, in more than a third of sudden cardiac deaths, there were warning signs that were not reported to an adult or taken seriously. If any of the above warning signs are present, a cardiac evaluation by a qualified health care provider such as a physician, physician assistant, or advanced practice nurse is recommended. If the health care provider has concerns, a referral to a pediatric cardiologist is recommended.

What are the risks of practicing or playing after experiencing SCA warning signs?

Ignoring such signs and continuing to play could be catastrophic and result in sudden cardiac death. Taking these warning symptoms seriously and seeking timely appropriate medical care can prevent serious and possibly fatal consequences.

OK State Department of Health and OK State Department of Education: Sudden Cardiac Arrest Information Sheet and Acknowledgement Statement Revised 7/20/2017

When is a student athlete required to be removed from play?

Any student who collapses or faints while participating in an athletic activity is required by law to be removed by the coach from participation at that time.

What is required for a student athlete to return to play?

Any student who is removed or prevented from participating in an athletic activity is not allowed to return to participation until evaluated and cleared for return to participation in writing by a qualified health care provider such as a physician, physician assistant, or advanced practice nurse is recommended. If the health care provider has concerns, a referral to a pediatric cardiologist is recommended.

What are the current recommendations for screening student athletes?

A complete annual sports preparticipation examination based on recommendations from the American Heart Association (AHA), American Academy of Pediatrics (AAP) and American College of Cardiology (ACC) is the cornerstone of screening for preventable causes of SCA. Each year student athletes in Oklahoma are required to have a Sports Preparticipation Physical Examination based on these recommendations completed by a health care provider such as a physician, physician's assistant, or advanced nurse practitioner and filed with the student athlete's school prior to beginning practice. The Sports Preparticipation Examination includes a personal and family health history to screen for risk factors or warning signs of SCA and measurement of blood pressure and a careful listening to the heart, especially for murmurs and rhythm abnormalities.

Noninvasive testing such as an electrocardiogram (ECG) or echocardiogram (ECHO) may be utilized by your health care provider if the sports preparticipation examination reveals an indication for these tests. Screening using an ECG and/or and ECHO is available to student athletes as an option from their personal health care provider, but is not mandatory, and is generally not routinely recommended by either the AHA, AAP or ACC.

What is the treatment for Sudden Cardiac Arrest?

> RECOGNIZE Sudden Cardiac Arrest

- · Collapsed and unresponsive
- Abnormal breathing
- Seizure-like activity

➤ CALL 9-1-1

Call for help and for an AED

> CPR

- · Begin chest compressions
- Push hard/fast (100/min)

➢ AED

Use an AED as soon as possible

> CONTINUE CARE

Continue CPR and AED until EMS arrives

All schools and teams should be prepared to respond to a cardiac emergency. Young athletes who suffer SCA are collapsed and unresponsive and may appear to have brief seizure-like activity or abnormal breathing (gasping). Time is critical and an immediate response is vital. An AED should be placed in a location that is readily accessible. AEDs are safe, portable devices that read and analyze the heart rhythm and provide an electric shock (if necessary) to restart a normal heart rhythm.

Remember, to save a life: recognize SCA, call 9-1-1, begin CPR, and use an AED as soon as possible!