Concussions can occur in any sport, male or female sports, at any age.

An athlete does not always lose consciousness — "knocked-out" — when suffering a concussion.

Concussion symptoms may last from a few days to several months.

Concussions can cause symptoms that interfere with school, work and social life.

A concussion may cause multiple symptoms.

Many symptoms appear immediately after the injury. Other symptoms may develop over hours or days after the injury. Symptoms may be subtle and are often difficult to fully recognize.

You cannot see a concussion, but you might notice symptoms right away. Other symptoms can show up hours or days after the injury.

Signs observed by coaches, parents, teachers, teammates:
- Appears dazed or stunned
- Is confused about what to do
- Forgets plays
- Is unsure of game, score or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness
- Shows behavior or personality changes
- Can’t recall events before hit
- Can’t recall events after hit

Signs & Symptoms

Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Feeling sluggish
- Feeling foggy or groggy
- Concentration or memory problems
- Confusion

Concentration or memory problems
- Sensitivity to light or noise
- Feeling headaches
- Nausea
- Feeling upset

Our district’s goal is to be proactive instead of reactive in our management of concussions in our students. Since our district’s primary mission is to help our students develop their brain power and become more mature thinkers through academic and social settings, we believe we must do our best to protect and help our students’ ability to mature mentally.

The guidelines and procedures we have adopted for concussion management are not all inclusive. We recognize that each concussion case is individual. Some students will progress quickly and others may take more time.

These guidelines and procedures are our attempt to be prepared for all cases so that we may do what is right for our students.

Our district believes the best method for concussion management involves a multi-disciplinary team trained and equipped to put the best interest of the student first. That’s why our district is basing our concussion management guidelines and procedures on The REAP program.

The REAP program was written by Karen McAvoy, PsyD. of the Rocky Mountain Youth Sports Medicine Institute of Centennial, Colorado. The program is a multidisciplinary approach to concussion management of students by a concussion Assistance Team in each school. This team is composed of the sub teams that are explained in this guide.

The members of the teams and their responsibilities will vary at each school that uses the program because it fit our students’ needs and fulfill our capabilities as a district.

What is a concussion?

A concussion is any brain injury that results in a temporary disruption of normal brain function.

Causes of a concussion

A concussion occurs when the brain is violently rocked back and forth or twisted inside the skull as a result of a blow to the head or body. This type of rocking can occur in sports from:
- Contact with another player,
- Hitting a hard surface such as the ground, court, wall or goal post or
- Getting hit by a piece of equipment such as a bat, stick or ball.

More than 140,000 student athletes suffer concussions each year in the United States (Data from the NFHS Injury Surveillance System)

Concussion Facts

Concussion

Before a student with a concussion will be allowed to participate in an athletic program again, the student must present a written release from a licensed practitioner.

For specific return-to-play regulations and the types of licensed practitioners who can issue these releases, look inside.

On the web

This document is also available online on the Lancaster County School District website at www.lancasterscschools.org

Ours is the best method for concussion management involves a multi-disciplinary team trained and equipped to put the best interest of the student first. That’s why our district is basing our concussion management guidelines and procedures on The REAP program.

The REAP program was written by Karen McAvoy, PsyD. of the Rocky Mountain Youth Sports Medicine Institute of Centennial, Colorado.

The program is a multidisciplinary approach to concussion management of students by a Concussion Assistance Team in each school. This team is composed of the sub teams that are explained in this guide.

The members of the teams and their responsibilities will vary at each school that uses the program because it fit our students’ needs and fulfill our capabilities as a district.

What is a concussion?

A concussion is any brain injury that results in a temporary disruption of normal brain function.

Causes of a concussion

A concussion occurs when the brain is violently rocked back and forth or twisted inside the skull as a result of a blow to the head or body. This type of rocking can occur in sports from:
- Contact with another player,
- Hitting a hard surface such as the ground, court, wall or goal post or
- Getting hit by a piece of equipment such as a bat, stick or ball.

More than 140,000 student athletes suffer concussions each year in the United States (Data from the NFHS Injury Surveillance System)

Concussion Facts

Concussion

Before a student with a concussion will be allowed to participate in an athletic program again, the student must present a written release from a licensed practitioner.

For specific return-to-play regulations and the types of licensed practitioners who can issue these releases, look inside.

On the web

This document is also available online on the Lancaster County School District website at www.lancasterscschools.org
Emotional symptoms
- The team list is not all

Signs & symptoms of a concussion
• Helps provide education to staff and coaches
• Notifies the school nurse and the school, • Helps with treatment and gradual return to play • Encourages the proper tracking of all injuries • Monitors the appropriate incident protocols • Helps keep teachers informed of the student’s progress

Please note – The team list is not all inclusive.
– Every school is unique in the resources it has, and our district wants to leave room for growth in our schools’ concussion management program.
– All members listed may not be available to join the Concussion Assistance Team.

Our district’s Best Practices beliefs
• the best method to concussion assistance should involve a multi-disciplinary team trained and equipped to put the best interest of the student first.
• four teams should be involved with a student’s care after a concussion:
  – The Family Team,
  – The School Physical Team, • The School Academic Team and • The Medical Team.

Please note – The team list is not all inclusive.
– Every school is unique in the resources it has, and our district wants to leave room for growth in our schools’ concussion management program.
– All members listed may not be available to join the Concussion Assistance Team.

Concussion Assistance Team responsibilities

Team roles in concussion management

Administration
• Helps with the change in culture of concussion management by putting in place concussion management policies
• Provides the necessary programs and training for all involved with concussion management to help students return fully and safely to athletics and academics

Athletic Director
• Promotes concussion awareness to students/athletes/coaches
• Helps with facilitation of training for all parties involved
• Monitors the appropriate incident protocols
• Encourages the proper tracking of all injuries

Certified Athletic Trainer
If the Certified Athletic Trainer is employed at the school,
• Helps with treatment and gradual return to play of the student athlete per physician’s orders
• Notifies the school nurse and the Concussion Assistance Team Coordinator that an athlete has sustained a concussion and provides information on the athlete and his/her condition
• Plays a vital part of School Physical Team
• Helps provide education to staff and coaches on concussion signs, symptoms and treatment protocols for head injuries and concussions

Coach
• Responsible for knowing and implementing the rules of his/her perspective sport

Physical symptoms
How a person’s body reacts
– Headache / pressure
– Blurred vision
– Dizziness
– Poor balance
– Ringing in ears
– Seeing “stars”
– Vacant stare
– Nausea
– Vomiting
– Numbness / tingling
– Sensitivity to light
– Sensitivity to noise
– Disorientation
– Neck pain

Cognitive symptoms
How a person thinks
– “In-a-fog” feeling
– “Slowed-down” feeling
– Difficulty remembering
– Difficulty concentrating / easily distracted
– Slowed speech
– Easily confused

Emotional symptoms
How a person feels emotionally
– Inappropriate emotions
– Personality change
– Nervousness / anxiety
– Feeling more “emotional”
– Irritability
– Sadness
– Lack of motivation

Maintenance symptoms
How a person experiences their energy level and/or sleep patterns
– Fatigue
– Excessive sleep
– Trouble falling asleep
– Drowsiness
– Sleeping less than usual

Remember
Not all signs or symptoms will be displayed.
Team medical provider (physician)
- Provides care for the student athlete
- Works with the Concussion Assistance Team to provide the proper care for the student athlete’s recovery
- Serves a vital part of the Concussion Assistance Team but must be willing to work with all parties involved

Hospital medical provider (emergency department)
- Has the parents of a Lancaster County School District student sign the Release of Information form
- Faxes the Suspected Concussion Notification form to the Concussion Assistance Team Coordinator so he/she can provide the necessary information to all parties involved and begin the process for accommodations when the student is able to return to school

Forms we use to communicate
- The REAP program is written by Kaas Mccoy, PysD of the Rocky Mountain Youth Sports Medicine Institute of Centennial, Colorado.
- The program is a multidisciplinary approach to concussion management of students by the Concussion Assistance Team, composed of the sub teams listed on Page 2.
- The team members and their responsibilities will vary at each school depending on personnel at each school.
- Here’s how our district plans to assure the REAP program is a living plan to fit our students’ needs and fulfill our capabilities as a district.

Reduce
- Reduce the chance for further injury to the brain by taking the injured student out of play or practice as soon as a school employee observes or receives a report of signs and symptoms of a possible concussion.
- Remember that only a medical professional such as a physician or physician assistant can make a medical diagnosis of a concussion, but if the possibility of a concussion is suspected or the signs and symptoms of a concussion are observed, every coach, trainer, player, parent or other school employee has the responsibility to pull the player out and recommend to the parent/guardian that the student needs to see an appropriate medical provider for a possible concussion.

Educate
- The Educate part of REAP consists of two segments – Education and Collaboration.
- Education – knowing the signs and symptoms of a concussion
  - As mentioned above, signs and symptoms occur in four categories, and it is important that all parties involved in recovery and management of the student’s concussion know these signs and symptoms and are able to recognize them.
  - As stated before, concussion management is a team approach with many stakeholders, including the Concussion Assistance Team.
- Collaboration – all stakeholders on the same page and communicating effectively with one another.
  - According to the REAP program, it is a “Multi-Disciplinary Team” approach in which team members provide multiple perspectives of the student/athlete and share multiple sources of data to assist in the student/athlete’s recovery (Mccoy, 2011).
  - REAP supports the idea that each case is unique and may have different people on the Concussion Assistance Team.

Step 1 Suspected head injury occurs
Option 1 – If injury is reported to coach
  » Coach will sit the player out.
  » Coach will contact parent/guardian and fill out Suspected Head Injury Notification form and give appropriate copy to parent/guardian.

Step 2 Medical attention provided to injured student
Option 1 – If deemed an emergency situation, the player will be transported by EMS to appropriate medical facility and parents/guardian will be notified.

Option 2 – If non-emergency, the student may be transported by parent/guardian to appropriate medical facility.
  » Once Emergency Department/Primary Care Physician makes diagnosis, appropriate medical facility will
    - fill out School Notification form (signed by parent/giving consent of information) and
    - fax to the Concussion Assistance Team Coordinator.
  » Medical Team will evaluate concussion and make recommendations for rest and recovery.
  » Emergency Department/Primary Care Physician may make recommendation to Concussion Specialist.
  » Family Team will follow medical team’s orders for rest and recovery and notify the school of the student’s diagnosed concussion.
  » Medical Team Coordinator will contact school Concussion Assistance Team coordinator to begin dialogue for student care and possible academic adjustments.

Step 3 Concussion Assistance Team notified student has concussion
- Concussion Assistance Team coordinator receives notification of student’s concussion diagnosis from health care provider and parents/guardian.

Assuring REAP in our schools

Option 2
- If non-emergency, the student may be transported by parent/guardian to appropriate medical facility.
  - Once Emergency Department/Primary Care Physician makes diagnosis, appropriate medical facility will
    - fill out School Notification form (signed by parent/giving consent of information) and
    - fax to the Concussion Assistance Team Coordinator.
  - Medical Team will evaluate concussion and make recommendations for rest and recovery.
  - Emergency Department/Primary Care Physician may make recommendation to Concussion Specialist.
  - Family Team will follow medical team’s orders for rest and recovery and notify the school of the student’s diagnosed concussion.
  - Medical Team Coordinator will contact school Concussion Assistance Team coordinator to begin dialogue for student care and possible academic adjustments.

Continue on next page
Assuring REAP in our schools

• Concussion Assistance Team coordinator puts into action REAP program and notifies sub teams.
  • School Academic Team and School Physical Team about diagnosis and recommendations for treatment and academic adjustments.
  • Medical Team to coordinate care for the student.
  • Family Team to communicate progress of student.
  • Keep open communication between all four teams to provide the best care and assistance for the student.

• School Physical Team and School Academic Team work to make adjustments to the student’s school day as deemed appropriate by the Medical Team.

• School Physical Team makes sure student is taken out of physical education/JROTC activities until further notice by Medical Team.

◆ Accommodate

• The Concussion Assistance Team members must all communicate with each other about the progress of the student and any adjustments needed for the recovery process.

• It has been documented that most symptoms of a concussion last up to 3 months, but anywhere from 1 to 3 weeks (McAvoy, 2011).

• It is also documented that a CT Scan or MRI cannot diagnose or show a concussion. A CT Scan and MRI can only show if there is a bleed or a structural abnormality of the brain or skull.

• Concussions are not structural – they are functional, meaning the brain can appear perfectly normal on scans, but functionally the brain is suffering from signs and symptoms.

• For this reason, it is recommended that the student be treated for a concussion and the necessary adjustments be made to help in recovery as long as the student is symptomatic.

• It is important that while the student is symptomatic, the Concussion Assistance Team members communicate well with each other, noting any signs or symptoms shown by the student.

• The physician will see the student only for an hour or less at a time, once or twice a week.

• Parents will be with the student at home and the School Academic Team will see the student when he/she returns to school.

• The factors above mean it is essential that all parties communicate with each other regularly to provide the best treatment and data possible so the best decisions can be made collaboratively on the student’s behalf.

• Types of adjustments that may be made for each Team – These are not all inclusive

  Family Team
  • Keep the student home from school for the first day or two as recommended by the doctor
  • Make sure the student gets cognitive and physical rest
  • Limited pressure use/testing
  • No video games, computers, ipads or other electronic devices
  • Limit television

  Medical Team
  • Recommend cognitive and physical rest
  • May remove from school for first few days
  • May recommend 1/2 days of school concussion symptoms & improvements
  • Make additional accommodations based on information from Concussion Assistance Team members

  School Academic Team
  • Modify and adjust student’s schedule
  • Set up periods of rest for student
  • Limit testing & evaluations
  • Implement gradual return to academics

  School Physical Team
  • Neophysical education/JROTC until cleared by physician
  • No practice/play until cleared for gradual return to play by physician
  • Monitor gradual return to play when approved by physician.

◆ Pace

• Pace ensures gradual and appropriate return to activity for the student.

  • The 2008 Zurich Consensus Statement on Concussions in Sports recommends a “Graduated Return-to-Play,” set up in stages.

  Based on this recommendation, the REAP program also sets up as part of the gradual return to play a gradual return-to-sports as deemed necessary by the medical provider and the Concussion Assistance Team.

  • The format used in our district Best Practices is adopted from the Oregon Concussion and Management Program and Slocomb Sports Concussion Program.

  • Below are charts explaining gradual return to activity – a Return-to-Academics Progression chart and a Return-to-Play Progression chart.

Acknowledgements

We would like to especially thank Karen McAvoy and organizations for helping us get to this point. We also plan to be a living document upon for revision and change as deemed necessary.

• Karen McAvoy, PsyD – Karen is the director of the concussion program at the Rocky Mountain Health Care Center, Denver, CO. She is the author of the REAP Project, which has been a driving force behind it. Karen has also been involved with the Concussion Management Program at the University of Colorado and is the creator of the “Return to School Assessment Tools” which will continue to be a resource for us as we progress through this ongoing process. Karen is very helpful and will be looking for directions.

• The Concussion Assistance Team of South Carolina – We would like to thank Joyce Dauch of the BCA of SC. She has been very receptive to our policy and very helpful in helping us begin this program. She has been a great resource as we progress through our policy into place.

• Oregon Concussion and Management Program – The guide from the Oregon Concussion and Management Program, a guide for schools to enhance your concussion policy and return to play by student, including guidelines for treatment and questions. We were able to meet Karen McAvoy there as the last one of the speeches. It was a great conference and will be a great resource for our policy and return to play policy.

• The Brain Injury Association of South Carolina – We would like to thank the Brain Injury Association of South Carolina for helping us with this body of work. We plan to continue to be a resource for us as we progress through this ongoing process. We have numerous resources to help us begin this program. She has been an invaluable resource to us. Karen has also been a great resource for us.

• The Oregon Concussion and Management Program – The guide from the Oregon Concussion and Management Program, a guide for schools to enhance your concussion policy and return to play by student, including guidelines for treatment and questions. We were able to meet Karen McAvoy there as the last one of the speeches. It was a great conference and will be a great resource for our policy and return to play policy.

• Oregon Concussion and Management Program – The guide from the Oregon Concussion and Management Program, a guide for schools to enhance your concussion policy and return to play by student, including guidelines for treatment and questions. We were able to meet Karen McAvoy there as the last one of the speeches. It was a great conference and will be a great resource for our policy and return to play policy.

Bibliography


• Grunert, H., Nienaber, E., and organizations for helping us with this body of work. We plan to continue to be a resource for us as we progress through this ongoing process. We have numerous resources to help us begin this program. She has been an invaluable resource to us. Karen has also been a great resource for us.

• The Oregon Concussion and Management Program – The guide from the Oregon Concussion and Management Program, a guide for schools to enhance your concussion policy and return to play by student, including guidelines for treatment and questions. We were able to meet Karen McAvoy there as the last one of the speeches. It was a great conference and will be a great resource for our policy and return to play policy.

• Oregon Concussion and Management Program – The guide from the Oregon Concussion and Management Program, a guide for schools to enhance your concussion policy and return to play by student, including guidelines for treatment and questions. We were able to meet Karen McAvoy there as the last one of the speeches. It was a great conference and will be a great resource for our policy and return to play policy.

• Oregon Concussion and Management Program – The guide from the Oregon Concussion and Management Program, a guide for schools to enhance your concussion policy and return to play by student, including guidelines for treatment and questions. We were able to meet Karen McAvoy there as the last one of the speeches. It was a great conference and will be a great resource for our policy and return to play policy.


• Grunert, H., Nienaber, E., and organizations for helping us with this body of work. We plan to continue to be a resource for us as we progress through this ongoing process. We have numerous resources to help us begin this program. She has been an invaluable resource to us. Karen has also been a great resource for us.