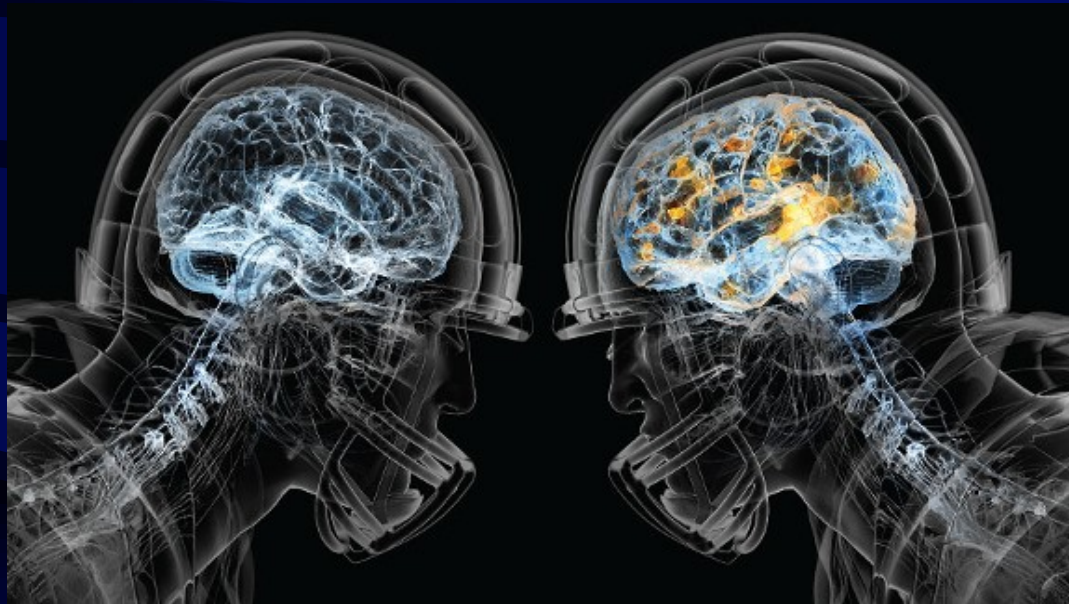


Concussions Education for Parents & Athletes: Recognition, Evaluation and Management



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Concussion in sports



- During the last decade, ED visits for sports and recreation-related TBIs among children & adolescents increased by 60%
- Estimated 1.6 – 3.8 million sports and recreation related TBI's in US each year, most not treated
- Activities associated with greatest # of TBI-related ED visits: football, wrestling, playground activities, basketball, soccer & biking

<http://www.cdc.gov/traumaticbraininjury>

Sport Concussion Statistics

- 3,800,000 concussions “reported” in 2012, double 2002
- 1,700,000 – 3,000,000 annually since
- 33% of all concussions happen at practice
- 90% of all concussions have no LOC!
- 16.8% are repeated concussions, many times due to not reporting initial injury
- 2 in 10 HS FB/So will suffer a TBI yearly
- 50% RTP 9 days or less



Underreporting of concussions: The importance of honesty.

Even though concussions are very serious and potentially life threatening to the young athlete, studies show that **less than 50%** of high school athletes will report their concussions. **Even after being diagnosed, many athletes feel pressured to say they do not have symptoms when they still do.** This is dangerous and should always be avoided. **Almost all athletes who have died or suffered serious complications from repeated concussions did not report their continued concussion symptoms to their parents, athletic trainer, or doctor.** Therefore, it is vitally important that parents, coaches, and athletes recognize the signs and symptoms of concussions and encourage honesty in reporting them.

Acute signs of concussion

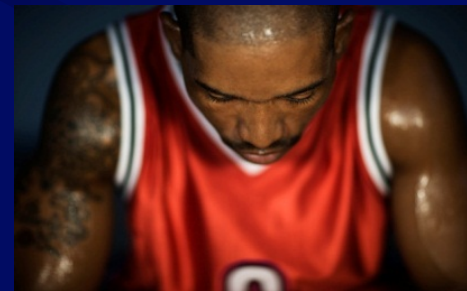
- Loss of consciousness
- Post traumatic amnesia (short vs long term memory)
- Seem dazed or out of it
- Glazed look
- Slowed speech or movements

Often hear from athlete:

- “I have a headache”
- “I feel foggy, I can’t think clearly”
- “I am dizzy and feel light-headed”
- “I am tired and just want to sleep”
- “Lights and noises are really bothering me”

Common physical symptoms

- Headaches (most common 40.1%)
- Dizziness, vertigo (2nd 15.3%)
- Physical fatigue
- Reduced stamina
- Sleep problems (too much, too little)
- Reduced balance
- Sensory changes – ringing in ears, reduced hearing, blurry vision, reduced visual processing
- Sensitive to noise and light



Common emotional behavioral symptoms



- Reduced tolerance for frustration
- More moody, irritable
- More impulsive
- Sad, depressed
- Nervous, anxious
- Disinterested
- Reduced initiation, "unmotivated"
- Less effective social & communication skills
- Isolated due to restrictions



Common cognitive-communication symptoms

- Short term memory, new learning
- Attention, divided & sustained
- Slowed processing, mental fatigue
- Planning, organization
- Follow through
- Mental flexibility
- Decision making
- Problem solving
- Multi-tasking
- Word finding
- “Inefficient”, “slow”, “foggy”, “can’t keep up”



Updated Mayo Sports Medicine Concussion Program



- Baseline Testing:
 - King-Devick Test (I Pad)
 - Brief Physical exam testing (MCT)

Mayo Sports Medicine Concussion Program



- Post-injury management from the field:
 - Initial Sideline Evaluation by athletic trainer (includes physical exam, symptoms checklist, SCAT3 or modified MCT, King-Devick Test - **rule out any emergency/red flags** – is athlete neurologically declining, i.e. slurred speech, off-balance, heavy eyed, increasingly confused
 - ER if declining mental status
 - **Refer to approved provider within 48hrs of injury (Primary care provider, Sports Medicine)**

Minnesota State Law

Sec. 2. [121A.38] CONCUSSION PROCEDURES.

Subdivision 1. Definitions. (a) For purposes of this section and section 121A.37, the following terms have the meanings given them.

(b) "Concussion" means a complex pathophysiological process affecting the brain, induced by traumatic biokinetic forces caused by a direct blow to either the head, face, or neck, or elsewhere on the body with an impulsive force transmitted to the head that may involve the rapid onset of short-lived impairment of neurological function and clinical symptoms, loss of consciousness, or prolonged postconcussive symptoms.

(c) "Provider" means a health care provider who is:

(1) registered, licensed, certified, or otherwise statutorily authorized by the state to provide medical treatment;

(2) Trained and experienced in evaluating and managing pediatric concussions

(3) Practicing within the person's medical training and scope of practice.

MSHSL Rules

- **Only an Appropriate Health Care Professional can decide if an athlete has been concussed (has had a concussion)**
- An Appropriate Health Care Professional is empowered to make on site determination that an athlete has received concussion.
- An Appropriate Health Care Professional (AHCP) is **defined** as a medical professional functioning within the levels of their medical education, medical training, and medical licensure.
- If the Appropriate Health Care Professional has determined that an athlete has been concussed, that decision is final and the athlete must be removed from all competition for the remainder of that day.
- If the event continues over multiple days, the designated event AHCP has ultimate authority regarding any return to play decision during the event

What can you do to help?

Restrictions from the following should be considered, because these activities increase brain function, and therefore may worsen symptoms and delay recovery:

- Tylenol only! No Ibuprofen (Advil) or Aspirin!
- Computer work/Internet use
- Video games
- Television- Action shows especially!
- Excessive text messaging/cell phone use
- Bright lights, such as strobe lights at school dances
- Listening to loud music or music through headphones
- Loud noises
- Parties, concerts, pep rallies, etc.
- Driving
- Work



Return to activity

- Return to physical activity must follow at least a gradual, graded increase in activity per below guidelines:

The final return to competition decision is based on **clinical judgment and the athlete may return **only** with written permission from a health care provider who is registered, licensed, certified, or otherwise statutorily authorized by the state to provide medical treatment; **is trained and experienced in evaluating and managing concussions; and is practicing within the person's medical training and scope of practice.**

Return to Play (RTP) Protocol

- Day 1.** No activity, complete rest until all symptoms have resolved. Once asymptomatic, proceed to level 2
- Unless instructed otherwise by physician!
- 2.** Light aerobic exercise such as walking or stationary cycling, no resistance training
 - 3.** Sport specific exercise—for example, skating in hockey, running in soccer; progressive addition of resistance training at steps 3 or 4
 - 4.** Non-contact training drills
 - 5.** Full contact training after medical clearance
 - 6.** Game play

Recovery, outcomes

- Majority recover in days to weeks
- Majority will not have prolonged or lifelong symptoms or impact
- Variable symptom onset and duration of recovery
- Risk factors for more prolonged, complex recovery
 - Pre-existing emotional, learning, behavioral problems
 - Pre-morbid headaches
 - Pre-morbid sleep problems
 - Previous concussion(s)
 - Chemical use/abuse



Mayo Clinic Concussion Policy and Coaches Head Injury Packet

- New Policy regarding suspected head injuries
 - Can still go to any medical provider you choose or insurance dictates for treatment/clearance
 - Your school's athletic trainer/Mayo Clinic Sports Medicine will have FINAL determination of return to competition.
 - WHY?
 - » We have daily communication with athlete/parent/coaches as to steps completing in assuring state law and MSHSL guidelines are met!

Coaches Packet

- Provides a step by step sequence on what to do if/when a suspected head injury takes place
 - Communication
 - To parents, to athletic trainer, etc.
 - PCSS form, contact info, etc.
 - Provides a sports specific return to play protocol to get through each step sufficiently
 - Follow up is key for success:
 - Coach to parent
 - Coach to Athletic Trainer
 - Athlete/Parents to ATC/Coach and vice versa

Resources

- Center for Disease Control
(cdc.gov/traumaticbraininjury)
- Brainline.org
- Brain Injury Alliance (usbia.org)
- MN Brain Injury Alliance (braininjurymn.org)
- Brain Injury Association (biausa.org)
- Mayo Clinic TBI Model System (mayo.edu/tbims)
- MN Department of Education
(education.state.mn.us/MDE/EdExc/SpecEdClass/DisabCateg/TraumBrainInj)
- Knowledge Translation Center (msktc.org)
- <http://www.mshsl.org/mshsl/showConcussion.asp>
- Youtube.com

Contact information

Mayo Sports Medicine Center
507-266-9100

Mayo Brain Rehabilitation Clinic
507-538-1576