



The 5 Rs of concussion management

Mercyhealth Sports Medicine and Rehabilitation Centers

What to know about concussions

A concussion is an injury that affects the function (but not structure) of the brain. The sudden movement of the brain causes stretching and tearing of brain cells, damaging the cells and creating chemical changes in the brain. Once this injury occurs, the brain is vulnerable to further injury and very sensitive to any increased stress until it fully recovers.

Common sports injuries such as sprains and fractures are structural injuries that can be seen on MRIs or x-rays, or detected during an exam. A concussion, however, is primarily an injury that interferes with how the brain works. While there is damage to brain cells, the damage is at a microscopic level and cannot be seen on MRI or CT scans. Therefore, the brain looks normal on these tests, even though it has been seriously injured. In fact, an adolescent brain is more vulnerable to concussions, and takes more time to heal.

1

RECOGNIZE

- Know the signs/symptoms of a concussion
- Be aware of the athlete's status
- Be alert for any changes

Parents and coaches are not expected to be able to "diagnose" a concussion. That is the role of an appropriate health care professional. However, you must be aware of the signs, symptoms and behaviors of a possible concussion, and if you suspect that an athlete may have a concussion, then he or she must be immediately removed from all physical activity.

Signs observed by parents, friends, teachers or coaches:

- Appears dazed or stunned
- Seems 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 prior to hit or after a hit

Symptoms reported by an athlete:

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light and or noise
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion
- Just not "feeling right" or is "feeling down"

2

REMOVE

- Immediately remove the athlete from activity if suspected of having a concussion

Following removal from activity, the athlete should be checked for any signs and/or symptoms that may require immediate care. If the athlete stays at the athletic event, the coach or parent should check them frequently to assure their status is not deteriorating. It is recommended the concussed athlete leave the event. Riding home with a parent rather than on a bus would allow for closer observation and would allow greater brain rest. Do not let the athlete drive home alone or leave the athlete alone in the locker room.

If an athlete returns to activity before being fully healed from an initial concussion, the athlete is at risk for a repeat concussion. A repeat concussion that occurs before the brain has a chance to recover from the first can slow recovery or increase the chance for long-term problems. In rare cases, a repeat concussion can result in severe swelling and bleeding in the brain that can be fatal.

What to do in an emergency

Although rare, there are some situations where you will need to call 911 and activate the emergency medical system (EMS). The following circumstances are medical emergencies:

1. Any time an athlete has a loss of consciousness of any duration. While loss of consciousness is not required for a concussion to occur, it may indicate more serious brain injury.
2. If an athlete exhibits any of the following:
 - Decreasing level of consciousness
 - Looks very drowsy or cannot be awakened
 - Difficulty getting his/her attention
 - Irregular breathing
 - Severe or worsening headaches
 - Persistent vomiting
 - Seizures

3

REPORT

- *Parents and coaches must be notified of a suspected concussion.*
- *Communication between everyone is important. (athletes to coach; coaches to parents; parents to coach)*

If an athlete thinks he/she may have a concussion, they should tell their coach immediately. If an athlete believes a teammate may have a concussion, they should tell their coach.

Athletes must know that they should never try to “tough out” a suspected concussion. Teammates, parents and coaches should never encourage an athlete to “play through” the symptoms of a concussion. In addition, there should never be an attribution of bravery to athletes who do play despite having concussion signs or symptoms. The risks of such behavior must be emphasized to all members of the team, as well as coaches and parents.

4

REFER

- *Athletes suspected of having a concussion must be cleared by a qualified health care provider*

After suffering a concussion, no athlete should return to play or practice on that same day. Previously, athletes were allowed to return to play if their symptoms resolved within 15 minutes of the injury. Newer studies have shown us that the young brain does not recover quickly enough for an athlete to return to activity in such a short time.

An athlete should never be allowed to resume physical activity following a concussion until he or she is symptom-free and is given written clearance to resume physical activity by an appropriate health care professional.

5

REST & REHABILITATION

- *Encourage concussed athlete to practice TOTAL BRAIN REST. Once cleared to return to activity, a gradual return to activity is recommended.*

The first step in recovering from a concussion is rest. Rest is essential to help the brain heal. Students with a concussion need rest from physical and mental activities that require concentration and attention as these activities may worsen symptoms and delay recovery. Exposure to loud noises, bright lights, computers, video games, television and phones (including texting) all may worsen the symptoms of concussion. As the symptoms lessen, increased use of computers, phone, video games, etc., may be allowed.

Once an athlete no longer has signs, symptoms, or behaviors of a concussion and is given written clearance to return to activity by a health care professional, he or she will be directed to proceed in a step-wise fashion to allow the brain to re-adjust to exercise. In most cases, the athlete will progress one step each day. The return to activity program schedule may proceed as below following medical clearance:

Progressive physical activity program

- | | |
|--------|--|
| STEP 1 | Light aerobic exercise; 5 to 10 minutes on an exercise bike or light jog; no weight lifting, resistance training, or any other exercises. |
| STEP 2 | Moderate aerobic exercise; 15 to 20 minutes of running at moderate intensity in the gym or on the field without a helmet or other equipment. |
| STEP 3 | Non-contact training drills in full uniform. May begin weight lifting, resistance training, and other exercises. |
| STEP 4 | Full contact practice or training. |
| STEP 5 | Full game play. |

If symptoms of a concussion re-occur, or if concussion signs and/or behaviors are observed at any time during the return to activity program, the athlete must discontinue all activity and be re-evaluated by their health care provider.

REST & REHABILITATION

{continued}

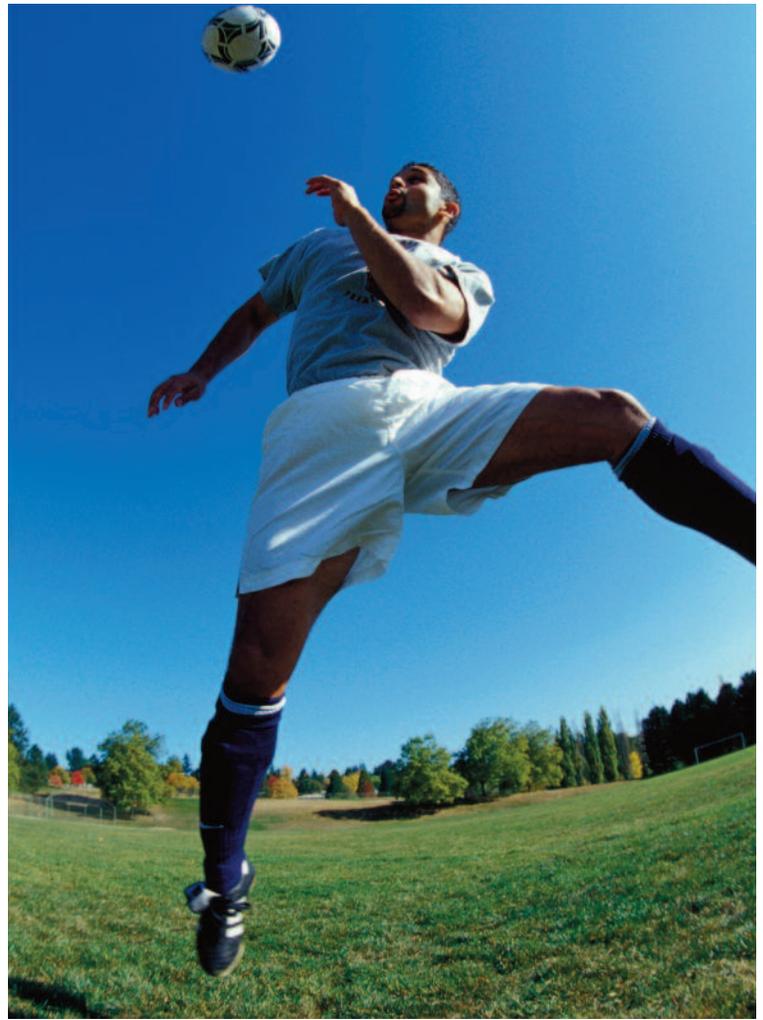
Cognitive rest

A concussion can interfere with school, work, sleep and social interactions. Many athletes who have a concussion will have difficulty in school with short- and long-term memory, concentration and organization. These problems typically last no longer than a week or two, but for some these difficulties may last for months. It is best to lessen the student's class load early on after the injury. Most students with concussion recover fully. However, returning to sports and other regular activities too quickly can prolong the recovery.

Concussion in the classroom

Following a concussion, many athletes will have difficulty in school. These problems may last from days to months and often involve difficulties with short- and long-term memory, concentration, and organization. In many cases, it is best to lessen the student's class load early on after the injury. This may include staying home from school for a few days, followed by a lightened schedule for a few days, or longer, if necessary. Decreasing the stress on the brain early on after a concussion may lessen symptoms and shorten the recovery time.

Text excerpted from 2011 Suggested Guidelines for Management of Concussion in Sports by the National Federation of State High School Associations (NFHS), Sports Medicine Advisory Committee (SMAC) and Centers for Disease Control (CDC).



For more information

For more information about concussions or concussion management, please contact one of these Mercy sports medicine facilities.

Mercyhealth East Sports Medicine

and Rehabilitation Center
3524 E. Milwaukee St., Janesville
(608) 756-7107

Mercyhealth Sports Medicine and Rehabilitation Center

557 N. Washington St., Janesville
(608) 754-6000

Mercyhealth Walworth Sports Medicine and Rehabilitation Center

Hwys. 50 and 67, Lake Geneva
(262) 245-4990

Mercyhealth Whitewater Sports Medicine and Rehabilitation Center

519 W. Main St., Whitewater
(262) 473-0410

Other resources

<http://www.wiaawi.org/>
<http://dpi.wi.gov/>

