

Lake Denoon MS and Aurora Sports Medicine Institute

What is a concussion and how does it occur?

A concussion is a brain injury which interferes with normal brain function. This affects the way an individual thinks, acts, behaves, and the physical skills needed to function on a daily basis. Each concussion is unique to each person, but there are some common signs and symptoms to be aware of to determine if an individual has a concussion.

A concussion can be caused by a bump, blot, jolt or fall to the head or body. When the head or body is bumped, hit, etc. the force of that movement causes the brain to hit the sides of the skull or move and/or twist while inside the skull. These movements change the way the physiology of the brain normally works. Even a mild blow to the head or body can cause the brain to shift or move in the skull, thus injuring the brain.

What are the signs and symptoms of a concussion?

Once a concussion is sustained, more signs and symptoms can develop in the next 24 hours, even in the next week. The severity and side effects of this brain injury will vary depending on the individual. Concussion symptoms may appear mild, but can lead to lifelong problems mentally, physically and psychologically if not managed correctly. A person can have signs and symptoms of a concussion without the loss of consciousness. Symptoms of a concussion can last for less than 1 day or up to 3 weeks or more.

Most of the time, images taken with a CT, MRI or CAT scan appear normal and do not show the physiologic changes that occur to the brain with a concussion. Image studies are done to rule out other head injuries, such as skull fractures.

Signs and Symptoms of a Concussion

Thinking/Remembering	Physical	Emotional/Mood	Sleep
Difficulty thinking clearly	Headache	Irritability	Sleeping more than usual
Feeling slowed down or foggy	Fuzzy or blurred vision	Sadness or more emotional	Sleeping less than usual
Difficulty concentrating or focusing	Nausea or vomiting	Nervousness	Trouble falling sleep
Amnesia	Dizziness	Anxiety	Can't stay asleep
Difficulty remembering new or old information	Sensitivity to light or noise	Slow to respond or easily confused	
	Feeling tired, having no energy	Dazed or stunned in appearance	
	Decreased balance and/or coordination		

What to do if someone has a concussion?

If the concussion occurs during an athletic activity, the individual should be immediately pulled out of play. Staying in the activity with a concussion will make it worse. The rule of thumb if a concussion is suspected is "When in doubt, sit them out". Staying in an activity with a concussion will prolong symptoms and recovery time and set the individual up for a more serious brain injury such as death, second impact syndrome or post-concussive syndrome.

If it is suspected that an individual has a concussion, he/she should be removed from any and all activity and evaluated by a medical professional trained in concussion management. Early evaluation and detection of a concussion can speed the recovery process by ensuring proper management of a concussion. ***WI State Law, Aurora Health Care and Lake Denoon Middle School require an immediate removal from activity and medical evaluation of an individual suspected of having a head injury.***

Return to play from concussions

WI State Law, Aurora Health Care and Lake Denoon Middle School require medical clearance by a physician, physician's assistant or nurse practitioner trained in concussion management before an individual can return to play. Aurora Health Care and Lake Denoon Middle School also require an individual complete a Gradual Return to Play Progression (as outlined below) before the individual may return to play. This is a standard of care for concussions and other head injuries in the medical field.

Once an individual is sign and symptom free for at least 24 hours and a medical professional trained in concussion management has evaluated and cleared the person, a stepwise return to play progression can be started. Similar to recovering from a bad ankle sprain, gradually introducing activity which increases heart rate to the brain ensures that the brain is able to tolerate the increased activity. If at any point in time during the stepwise progression the person has a return of symptoms, the person should stop the activity and contact a medical professional. It has been shown that by completing a stepwise, gradual return to play progression the likelihood of sustaining another concussion decreases. By performing a gradual return to play progression, the person is preventing further injury to his/her brain.

Below is the Return to Play Progression to be completed under the supervision of a medical professional.

- STEP 1. Sign and Symptom free for at least 24 hours.
- STEP 2. 15-30 minutes of light stationary biking, elliptical or treadmill jogging.
- STEP 3. 45-60 minutes of strenuous activity such as sport specific drills with cones or ladders.
- STEP 4. Non-Contact drills in uniform. Ok to try weight lifting if appropriate.
- STEP 5. Full practice with contact. (Before individual starts the practice educate him/her on proper technique, mechanics, concussion signs and symptoms, and what to do if signs and symptoms come back.)
- STEP 6. Full Game

Returning to play before an individual is sign and symptom free can result in Post-Concussive Syndrome, 2nd Impact Syndrome, or possibly Death. Returning too soon from a concussion can also leave an individual more susceptible to further concussions. Please make sure the return to play progression is performed under the direction of a medical provider trained in concussion management.

Wisconsin's Sidelined for Safety Act 172

Under this act, at the beginning of the season individuals and parents/guardians of individuals participating in a youth activity or organized athletic activity need to be provided with concussion and head injury information if they wish to participate in that youth athletic activity. "No person may participate in a youth athletic activity unless the person returns the information sheet signed by the person and, if he or she is under the age of 19, by his or her parent or guardian."

Also covered in this act; "An athletic coach, or official involved in a youth athletic activity, or health care provider shall remove a person from the youth athletic activity if the coach, official, or health care provider determines that the person exhibits signs, symptoms, or behavior consistent with a concussion or head injury or the coach, official, or health care provider suspects the person has sustained a concussion or head injury." If an individual is removed from the activity, he/she "may not participate in a youth athletic activity until he or she is evaluated by a health care provider and receives a written clearance to participate in the activity from the health care provider."

For the entire Act 172, please visit the Wisconsin Legislature site at <https://docs.legis.wisconsin.gov/2011/related/acts/172>

Information from this handout was taken from the following sites:

- Centers for Disease Control and Prevention (<http://www.cdc.gov/concussion/sports/index.html>)
- WI Sports Concussion Collaborative (<http://www.wisportsconcussion.org/>)
- WI Interscholastic Athletic Association (<http://wiaawi.org/index.php?id=430>)
- National Federation of State High School Associations (<http://www.nfhslearn.com/>)
- Milwaukee Journal Sentinel – Dr. Walters Interview (<http://www.jsonline.com/multimedia/video/?bctid=1465030068001>)



Lake Denoon Middle School

In accordance with Wisconsin's Sidelined for Safety Act 172, we the undersigned acknowledge having received education about the signs, symptoms, and risks of sport related concussion. We understand that students are prohibited from any participation until this form is completed and returned to the Activities Office.

I acknowledge my responsibility to report to my coaches, parent(s)/guardian(s) any signs or symptoms of a concussion and agree to abide by all MNSD concussion protocols.

Printed Name of Student/Athlete

Signature

Date

I, the parent/guardian of the student athlete named above, hereby acknowledge having received education about the signs, symptoms, and risks of sport related concussion and agree to abide by all MNSD concussion protocols.

Printed Name of Parent/Guardian

Signature

Date