Facts:
• A concussion is a traumatic brain injury (TBI)
• All concussions are serious
• Concussions can occur without loss of consciousness or memory
• Recognition and proper management of concussions when they first occur can prevent further injury or even death
• Most athletes can safely return to play after recovery, but everyone recovers at their own rate
• In general, the younger the athlete is, the longer the recovery
• Both cognitive and physical rest are the key to recovery
• U.S. annual rate of sports/recreation-related concussions: 3.8 million

A concussion is caused by a bump or blow (usually to the head) that is hard enough to disrupt the metabolic functioning of the brain.

It is important for athletes to report concussions because the cumulative effects of repeated concussions can result in permanent intellectual and cognitive changes.

Youth athletes are more vulnerable to the effects of concussion, and their amount of time needed to recover is often longer than full-grown adults.

Rest is the best treatment after a concussion as it helps the brain heal faster. If the athlete is still symptomatic, forcing him or her to exert either physically or mentally will likely lengthen the recovery period.

This means abstaining from sports, as well as any other activities that require sustained mental exertion, from test-taking to playing video games.

Once an athlete is 100% symptom free at rest, a gradual return-to-play protocol should be implemented to be sure that symptoms do not resurface with exertion. No athlete should ever return to play if concussion symptoms recur.

Management of concussion in youth is very important to prevent a rare but often fatal brain injury called Second Impact Syndrome. This syndrome may occur when an athlete suffers even a mild concussion and then, within a short period of time, receives a second blow to the head before he or she has fully recovered. Rapid brain swelling can occur as the brain has not yet healed from the first hit. Increased intracranial pressure, if uncontrolled, can lead to death or severe neurological damage.

WHAT SHOULD I BE LOOKING FOR?
To recognize a possible concussion, coaches should watch for any change in their athlete's behavior, thinking and/or physical functioning associated with a forceful blow to the head of an athlete that results in a rapid head movement.

SIGNS AND SYMPTOMS

Signs Observed by Coaches & Teammates:
• Appears dazed or stunned
• Is confused about their position or the play
• Wincs when heading the ball
• Is unsure of game, score or opponent
• Moves clumsily
• Answers questions slowly
• Loses consciousness, even briefly
• Shows behavior or personality changes
• Can’t recall events before or after hit or fall

Symptoms Reported by Athletes:
• Headache or pressure in head
• Nausea or vomiting
• Double or blurry vision
• Sensitive to lights or noises
• Dizziness, clumsiness, sleepiness
• Feels sluggish, hazy, foggy, groggy
• Attention or concentration problems
• Confusion or memory loss
• Just doesn’t feel right
WHAT’S MY ROLE?

As a coach, you can play a key role in preventing concussions by teaching safe playing techniques and encouraging your players to follow the rules of play. Educate athletes and parents regarding the signs, symptoms, dangers and potential long-term consequences of concussions. Explain your concerns about concussion and your expectations of safe play and symptom-reporting to athletes, parents and assistant coaches. Encourage athletes to look out for teammates and to report suspected symptoms. **Be sure players understand that it’s better to miss one game than the whole season!**

Baseline pre-season testing and post-concussion neurocognitive testing are also recommended to facilitate concussion management and return-to-play decisions in the event that an athlete sustains a concussion. By obtaining pre-injury measures of skills that are sensitive to a concussion (such as verbal and non-verbal memory, reaction time and processing speed), concussion specialists are able to determine more precisely when an athlete has recovered from the concussion and may be ready to return to play. Ongoing post-injury neurocognitive testing helps guide school-related planning and accommodations, in addition to general recovery management.

WHAT SHOULD I DO IF I SUSPECT A CONCUSSION?

1. **Remove the athlete from play immediately.** If athletes show signs of a concussion after a bump or blow to the head, they should not be allowed to return to play that day. When in doubt, keep the athlete out of play, even if symptoms resolve while the game in ongoing.

2. **Ensure that the athlete is evaluated right away by an appropriate healthcare professional.** Neurocognitive testing by a neuropsychologist can evaluate the severity of the symptoms and facilitate management of daily activities (particularly school) while the athlete is recovering.

3. **Inform the athlete’s parents or guardians about the possible concussion.** Make sure they know that the athlete should be seen by healthcare professionals experienced in evaluating concussions, and that both cognitive and physical rest will facilitate recovery.

4. **Allow the athlete to return to play only with permission from a healthcare professional with experience in evaluating concussions.** Recovery times vary across individuals, so you should be wary when permission is based on the amount of time spent “resting,” rather than measures of the athlete’s current symptoms and neurocognitive status. A repeat concussion that occurs before the brain recovers from the first can slow recovery or increase the likelihood of having long-term problems. Prevent common long-term problems and the rare Second Impact Syndrome by delaying the athlete’s return to activity until the player receives appropriate medical evaluation and approval for return to play.

5. **Once cleared – when 100% symptom free - be sure that the athlete follows a gradual return-to-play protocol,** with activity level gradually increased over a minimum of 5-7 days to be sure that symptoms do not recur or worsen.

6. **The Concussion Institute at GMC-Duluth will develop a sport-specific return-to-play protocol that can be implemented at the Concussion Institute or in collaboration with other GMC certified athletic trainers.**

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Information in this handout was adapted from *Heads Up: Concussion in Youth Sports*, published by the CDC.