Approximately 90 percent of concussions occur without loss of consciousness, so knowing the signs and symptoms of a concussion as an athlete, parent, or coach is crucial. Concussion is a subset of mild traumatic brain injury. This occurs with a direct blow to the head, face, neck, or elsewhere on the body with a force transmitted to the head. Although a collision may leave athletes thinking they are still able to play, it does not mean they have not suffered a concussion. All suspected concussions should be medically evaluated.

What is a concussion?
Concussion is defined as a traumatically induced transient disturbance in brain function that involves a complex pathophysiological process. In other words, a concussion is an energy problem in the brain where active areas of the brain are not getting the correct amounts of energy where and when they need it. It is caused by moving forces, such as a bump, blow, or jolt to the head or elsewhere on the body with a force transmitted to the head.

What are the symptoms of a concussion?
Although the classic markers of injury, including loss of consciousness, confusion, memory loss, disorientation, vomiting, and/or balance problems may be present in some athletes with a concussion, there may or may not be obvious signs that a concussion has occurred. Symptoms may not be present immediately after the hit or play. It is important to take the time to perform a full evaluation of the player to determine whether a concussion has occurred before allowing them to return to the game or practice. The majority of athletes who experience a concussion will be symptom-free in one to two weeks. However, it is important to know that, because every case is different, there is no simple timetable for recovery. Some people recover in days; others require weeks or months to fully recover.

What should I do if I think I have a concussion?
- Tell your coaches and parents/guardians: Never ignore a bump or blow to the head, even if you feel fine. Also, tell your coach if you suspect one of your teammates may have a concussion.
- Give yourself time to get better: If you have experienced a concussion, your brain needs time to heal. After a brief period of rest (approximately 24-48 hours), athletes are encouraged to become gradually more active, both physically and cognitively. It is important to refrain from contact sports until you get approval from a doctor or health care professional to return to play. Strict rest for a longer period of time than 24-48 hours may have detrimental effects and lead to increased change of prolonged symptoms.
What should I do if I suspect my son/daughter may have a concussion?

• Speak to your athlete’s coach and/or athletic trainer: “When in doubt, sit them out”
• Visit the Emergency Department if any of the following occur:
  > Severe headache that gets worse and does not go away
  > One pupil is larger than the other
  > Repeated vomiting
  > Convulsions/seizures (shaking or twitching)
  > Unusual behavior (confusion, agitation, restlessness)
• Contact the UPMC Sports Medicine Concussion Program: The team is available to assess, manage, and treat concussions in athletes and nonathletes of all ages
• Follow up: Visit your primary care physician (PCP)

What activities should an athlete avoid after a concussion?

• Do not participate in any contact physical activity until cleared by the UPMC Sports Medicine Concussion Program or another health care professional
  > Athletes are encouraged to engage in light non-risk and non-contact physical activity after a brief period of rest, such as walking or jogging
• Athletes may begin to notice that doing daily activities, such as texting and playing video games, may increase symptoms; however, these activities do not need to be restricted

Should an athlete stay home from school after a concussion?

Students who experience symptoms of a concussion may need extra help to perform school-related activities, as they may experience an increase in symptoms when attempting to complete school work; however, after an initial rest period (24-48 hours), returning to school is strongly encouraged. Emerging literature suggests the restriction of school may prolong recovery due to stress about maintaining grades and social isolation. It is not necessary for an athlete to feel 100% prior to returning to school.

When can an athlete return to play after a concussion?

An athlete should not participate in any contact physical activity when symptoms are present. This includes contact sports like football, basketball, and soccer, as well as physical education class activities like dodgeball. The athlete is permitted and encouraged to engage in physical activity every day, even if it is just a light walk. A concussed athlete should never return to contact sports with any symptoms unless directed by a health care professional.

How can I reduce the likelihood of a concussion?

While it’s impossible to eliminate all concussions, there are steps you can take to help protect yourself:

• Follow your coaches’ rules for safety and the rules of the sport
• Practice good sportsmanship at all times
• Use the proper sports equipment, including personal protective equipment like helmets, padding, shin guards, and eye and mouth guards. In order for equipment to help protect you, it must be:
  > The appropriate equipment for the game, position, or activity
  > Worn correctly and fit well
  > Used every time you play

For more information about HeadsUP Pittsburgh, please visit PittsburghPenguinsFoundation.org. For more concussion information, please visit ReThinkConcussions.com.