Hunterdon Central Regional High School
Sport-Related Concussion and Head Injury Fact Sheet

A concussion is a brain injury that can be caused by a blow to the head or body that disrupts normal functioning of the brain. Concussions are a type of Traumatic Brain Injury (TBI), which can range from mild to severe and can disrupt the way the brain normally functions. Concussions can cause significant and sustained neuropsychological impairment affecting problem solving, planning, memory, attention, concentration, and behavior.

The Centers for Disease Control and Prevention estimates that 300,000 concussions are sustained during sports related activities nationwide, and more than 62,000 concussions are sustained each year in high school contact sports. Second-Impact syndrome occurs when a person sustains a second concussion while still experiencing symptoms of a previous concussion. It can lead to severe impairment and even death of the victim.

Legislation (P.L. 2010, Chapter 94) signed on December 7, 2010, mandated measures to be taken in order to ensure the safety of K-12 student-athletes involved in interscholastic sports in New Jersey. It is imperative that athletes, coaches, and parent/guardians are educated about the nature and treatment of sports related concussions and other head injuries. The legislation states that:

- All Coaches, Athletic Trainers, School Nurses, and School/Team Physicians shall complete an interscholastic Head Injury Safety Training Program by the 2011-2012 school year.
- All school districts, charter, and non-public schools that participate in interscholastic sports will distribute annually this educational fact to all student athletes and obtain a signed acknowledgement from each parent/guardian and student-athlete.
- Each school district, charter, and non-public school shall develop a written policy describing the prevention and treatment of sports-related concussion and other head injuries sustained by interscholastic student-athletes.
- Any student-athlete who participates in an interscholastic sports program and is suspected of sustaining a concussion will be immediately removed from competition or practice. The student-athlete will not be allowed to return to competition or practice until he/she has written clearance from a physician trained in concussion treatment and has completed his/her district's graduated return-to-play protocol.

Quick Facts

- A concussion is a trauma-induced alteration in mental status that may or may not involve loss of consciousness, most concussions do not involve loss of consciousness
- A concussion causes the disruption of normal brain function due to either a direct blow to the head, face and neck, or an indirect blow or jolt to another part of the body that transmits an "impulsive" force to the brain.
- It is imperative that the brain has enough time to heal in order to prevent any further trauma or permanent damage. Rest must always come in the form of ceasing all physical activity, but may also involve a break from challenging cognitive activity as well.
- Research suggests that a concussion produces metabolic, rather than anatomic, injury to the brain, making CT scanning and MRI insensitive to the physiological changes in the concussed brain.
- Post-concussion syndrome can involve decreased processing speed, short term memory impairment, concentration deficit, depression/irritability, fatigue/sleep disturbance, and academic difficulties.

Signs of Concussions (Observed by Coach, Athletic Trainer, Parent/Guardian)

- Appears dazed or stunned
- Forgets plays or demonstrates short term memory difficulties (e.g. unsure of game, opponent)
- Exhibits difficulties with balance, coordination, concentration, and attention
- Answers questions slowly or inaccurately
- Demonstrates behavior or personality changes
- Is unable to recall events prior to or after the hit or fall

Symptoms of Concussion (Reported by Student-Athlete)

- Headache
- Balance Problems or dizziness
- Sensitivity to light/sound
- Difficulty with concentration, short term memory, and/or confusion
- Nausea/Vomiting
- Double vision or changes in vision
- Feeling of sluggishness or fogginess

What Should a Student-Athlete do if they think they have a concussion?

- Don't hide it. Tell your Athletic Trainer, Coach, School Nurse, or Parent/Guardian.
- Report it. Don't return to competition or practice with symptoms of a concussion or head injury. The sooner you report it, the sooner you may return-to-play.
- Take time to recover. If you have a concussion your brain needs time to heal. While your brain is healing you are much more likely to sustain a second concussion. Repeat concussions can cause permanent brain injury.

What can happen if a student-athlete continues to play with a concussion or returns to play to soon?

- Continuing to play with the signs and symptoms of a concussion leaves the student-athlete vulnerable to second impact syndrome.
- Second impact syndrome is when a student-athlete sustains a second concussion while still having symptoms from a previous concussion or head injury.
- Second impact syndrome can lead to severe impairment and even death in extreme cases.

Should there be any academic accommodations made for Student-Athletes who have suffered a concussion?

- To recover cognitive rest is just as important as physical rest. Reading, texting, testing-even watching movies can slow down a student-athletes recovery.
- Stay home from school with minimal mental and social stimulation until all symptoms have resolved.
- Students may need to take rest breaks, spend fewer hours at school, be given extra time to complete assignments, as well as being offered other instructional strategies and classroom accommodations as prescribed by their physician.

Student-Athletes who have sustained a concussion should complete a graduated return-to-play before they may resume competition or practice, according to the following protocol:

- Any student-athlete with a suspected concussion are removed from practice/competition.
- No students with concussion are allowed to return to play in the current game.
- All concussions are referred for medical evaluation following the injury.
- Stepwise return to play
    - Step 1: Completion of a full day of normal cognitive activities (school day, studying for tests, watching practice, interacting with peers) without reemergence of any signs or symptoms. If no return of symptoms, next day advance.
    - Step 2: Light Aerobic exercise, which includes walking, swimming, and stationary cycling, keeping the intensity below 70% maximum heart rate. No resistance training. The objective of this step is increased heart rate.
    - Step 3: Moderate activity, which includes sport-specific exercise including skating, and/or running: no head impact activities. The objective of this step is to add movement.
    - Step 4: Heavy, non-contact training drills (e.g. passing drills). Student-athlete may initiate resistance training.
    - Step 5: Following medical clearance (consultation between school health care personnel and student athlete's physician) and a return to baseline neurocognitive scores, participation in normal full contact practice. The objective of this step is to restore confidence and assess functional skills by coaching and medical staff.
    - Step 6: Return to play involving normal exertion or game activity.