

## CONCUSSION PROTOCOL

The purpose of this protocol is to educate and minimize the risks and potential injury that can be sustained during athletic activities. *The health and welfare of the student-athlete will be the primary consideration throughout this protocol.*

### Definition of Sports Concussion

“Sports concussion is defined as a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces.” (Concussion in Sports Group, Vienna 2001, *Clic J Sports Med*, 12:6-11, 2002).

1. Concussions may be caused by a direct blow to the head, face, neck or elsewhere on the body with an “impulsive” force transmitted to the head.
2. Concussions typically result in the rapid onset of short-lived impairment of neurological function that resolves spontaneously.
3. Concussions may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than structural injury.
4. Concussions result in a graded set of clinical syndromes that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course.

### Signs and Symptoms

If a student-athlete has received head trauma, the next step is recognizing whether a concussion is present. A concussion will be suspected if any student-athlete presents with one or more of the below signs or systems after sustained direct or indirect contact with the head. In accordance with the Safety in Youth Sports Act (effective July 2012), a student-athlete that “exhibits signs or symptoms of a concussion or traumatic brain injury while participating in an athletic activity shall be removed by the coach from participation at that time.” These signs or symptoms may be noticed by a game official, coach from the student-athlete’s team, the Certified Athletic Trainer or a licensed physician and the athlete *must* be removed from participation. The Act also states, “The coach shall not return a student to participation until the student is evaluated and cleared for return to participation by an appropriate medical professional.” If a concussion is suspected, the student-athlete will not return to participation the same day of injury.

The following is a list of possible signs or symptoms of a concussion or traumatic head injury. This list is not an all-inclusive list, other signs or symptoms may occur that are not listed below.

- Headache
- Nervous or anxiety
- "Pressure" in the head
- Trouble falling asleep
- Neck pain
- Sleeping more than usual
- Balance problems/dizzy
- Drowsiness
- Nausea or vomiting
- Fatigue
- Vision problems
- More emotional than usual
- Feeling like in a "fog"
- Slurred speech
- Convulsions or seizures
- Irritability
- Feeling dazed
- Hearing problems/ringing in ear(s)
- Sadness
- Confusion
- Sensitivity to light
- Sensitivity to noise
- Feeling slowed down
- Don't feel right
- Difficulty concentrating

A student-athlete that presents with any of the aforementioned signs or symptoms will be removed from play and monitored. They will be referred to the emergency room immediately if their condition drastically worsens or if they present with any of the following signs or symptoms:

- Deterioration of neurological function
- Decreasing level of consciousness
- Irregularity in respirations
- Irregularity in pulse
- Unequal, dilated, or unreactive pupils
- Any signs or symptoms of associated injury; i.e., spine or skull fracture
- Mental status change: lethargy, difficulty maintaining arousal, confusion or agitation
- Seizure activity
- Loss of consciousness
- Cranial deficits
- Vomiting

If a student-athlete is not referred to the emergency room, the parent/guardian will be notified of the injury and the student-athlete will be given take-home instructions to follow. The student-athlete must see the Certified Athletic Trainer the following day and every day thereafter until cleared to return-to-play by an appropriate medical professional.

### **Return to Play Guidelines**

Once a student-athlete has displayed any of the signs or symptoms stated above resulting from direct or indirect contact to the head, the student-athlete will not return-to-play until they have been cleared by an appropriate medical professional. During this process, the student-athlete will be retested on ImPACT 48-72 hours post-injury. The student will not begin any physical exertion until their ImPACT test results have returned to their baseline and they have been

symptom free for 24 hours. Once ImPACT test results have returned to baseline and the student-athlete has remained symptom-free for 24 hours after the last ImPACT test, they may begin Physical Exertional Testing. The student-athlete must remain symptom free during the entire Physical Exertional Testing period. If they experience any signs or symptoms at any step, they must stop activity and cannot begin again until symptom-free for 24 hours once again. When they do start the testing, they will begin at the previous step they left off on.

- Step 1:** Aerobic exercise
- Step 2:** Sport-specific exercise
- Step 3:** Non-contact drills
- Step 4:** Controlled contact drill
- Step 5:** Full-contact
- Step 6:** Competition

Please note that some the above steps may be combined depending upon the severity of the student-athlete's concussion. There will, however, be a minimum of three days of Physical Exertional Testing before the athlete will be cleared for full return-to-play without any restrictions.