A concussion is the immediate and transient alteration of neurological function in the brain caused by mechanical acceleration and deceleration forces.

Part I – SIGNS AND SYMPTOMS OF A CONCUSSION
- A concussion should be suspected if any one or more of the following signs or symptoms are present, OR if the coach/evaluator is unsure.

1. Signs of a concussion may include (what the athlete looks like):
   - Confusion/disorientation/irritability
   - Trouble resting/getting comfortable
   - Lack of concentration
   - Slow response/drowsiness
   - Incoherent/slurred speech
   - Slow/clumsy movements
   - Loss of consciousness
   - Amnesia/memory problems
   - Act silly/combative/aggressive
   - Repeatedly ask same questions
   - Dazed appearance
   - Restless/irritable
   - Constant attempts to return to play
   - Constant motion
   - Disproportionate/inappropriate reactions
   - Balance problems

2. Symptoms of a concussion may include (what the athlete reports):
   - Headache or dizziness
   - Nausea or vomiting
   - Blurred or double vision
   - Oversensitivity to sound/light/touch
   - Ringing in ears
   - Feeling foggy or groggy

Note: Public Act No. 14-66 requires that a coach MUST immediately remove a student-athlete from participating in any intramural or interscholastic athletic activity who (A) is observed to exhibit signs, symptoms or behaviors consistent with a concussion following a suspected blow to the head or body, or (B) is diagnosed with a concussion, regardless of when such concussion or head injury may have occurred. Upon removal of the athlete a qualified school employee must notify the parent or legal guardian within 24 hours that the student athletes has exhibited the signs and symptoms of a concussion.

Part II – RETURN TO PARTICIPATION (RTP)
Currently, it is impossible to accurately predict how long concussions will last. There must be full recovery before someone is allowed to return to participation. Connecticut Law now requires that no athlete may resume participation until they have received written medical clearance from a licensed health care professional (Physician, Physician Assistant, Advanced Practice Registered Nurse, Athletic Trainer) trained in the evaluation and management of concussions.

Concussion management requirements:
1. No athlete SHALL return to participation (RTP) on the same day of concussion.
2. Any loss of consciousness, vomiting or seizures the athlete MUST be immediately transported to the hospital.
3. Close observation of an athlete MUST continue following a concussion. This should be monitored for an appropriate amount of time following the injury to ensure that there is no escalation of symptoms.
4. Any athlete with signs or symptoms related to a concussion MUST be evaluated from a licensed health care professional (Physician, Physicians Assistant, Advanced Practice Registered Nurse, Athletic Trainer) trained in the evaluation and management of concussions.
5. The athlete MUST obtain an initial written clearance from one of the licensed health care professionals mentioned above directing them into a well defined RTP stepped protocol similar to one outlined below. If at any time signs or symptoms should return during the RTP progression the athlete should cease activity.*
6. After the RTP protocol has been successfully administered (no longer exhibits any signs or symptoms or behaviors consistent with concussions), final written medical clearance is required by one of the licensed health care professionals mentioned above for them to fully return to unrestricted participation in practices and competitions.
**Medical Clearance RTP protocol (Recommended one full day between steps)**

<table>
<thead>
<tr>
<th>Rehabilitation stage</th>
<th>Functional exercise at each stage of rehabilitation</th>
<th>Objective of each stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No activity</td>
<td>Complete physical and cognitive rest until asymptomatic. School may need to be modified.</td>
<td>Recovery</td>
</tr>
<tr>
<td>2. Light aerobic activity</td>
<td>Walking, swimming or stationary cycling keeping intensity &lt;70% of maximal exertion; no resistance training</td>
<td>Increase Heart Rate</td>
</tr>
<tr>
<td>3. Sport Specific Exercise</td>
<td>Skating drills in ice hockey, running drills in soccer; no head impact activities</td>
<td>Add Movement</td>
</tr>
<tr>
<td>4. Non-contact Training drills</td>
<td>Progression to more complex training drills, ie. passing drills in football and ice hockey; may start progressive resistance training</td>
<td>Exercise, coordination and cognitive load</td>
</tr>
<tr>
<td>5. Full Contact Practice</td>
<td>Following final medical clearance, participate in normal training activities</td>
<td>Restore confidence and assess functional skills by coaching staff</td>
</tr>
</tbody>
</table>

If at any time signs or symptoms should worsen during the RTP progression the athlete should stop activity that day. If the athlete’s symptoms are gone the next day, s/he may resume the RTP progression at the last step completed in which no symptoms were present. If symptoms return and don’t resolve, the athlete should be referred back to their medical provider.

**Part III - HEAD INJURIES**

- Injuries to the head includes:
  - Concussions: (See above information). There are several head injuries associated with concussions which can be severe in nature including:
    a) Second impact Syndrome - Athletes who sustain a concussion, and return to play prior to being recovered from the concussion, are also at risk for Second Impact Syndrome (SIS), a rare but life-altering condition that can result in rapid brain swelling, permanent brain damage or death; and
    b) Post Concussion Syndrome - A group of physical, cognitive, and emotional problems that can persist for weeks, months, or indefinitely after a concussion.
  - Scalp Injury: Most head injuries only damage the scalp (a cut, scrape, bruise or swelling)... Big lumps (bruises) can occur with minor injuries because there is a large blood supply to the scalp. For the same reason, small cuts on the head may bleed a lot. Bruises on the forehead sometimes cause black eyes 1 to 3 days later because the blood spreads downward by gravity;
  - Skull Fracture: Only 1% to 2% of children with head injuries will get a skull fracture. Usually there are no other symptoms except for a headache at the site where the head was hit. Most skull fractures occur without any injury to the brain and they heal easily;
  - Brain Injuries are rare but are recognized by the presence of the following symptoms: (1) difficult to awaken, or keep awake or (2) confused thinking and talking, or (3) slurred speech, or (4) weakness of arms or legs or (5) unsteady walking” (American Academy of Pediatrics – Healthychildren, 2010).

I have read and understand this document the “Student/Parent - Concussion Education Plan & Consent Form” and understand the severities associated with concussions and the need for immediate treatment of such injuries.

Student name: ___________________________ Date ______ Signature ____________________________
(Print Name)

Parent name: ___________________________ Date ______ Signature ____________________________
(Print Name)

References:
2. McCrory, Paul MBBS, PhD; Meeuwisse, Willem MD, PhD; Johnston, Karen MD, PhD; Dvorak, Jiri MD; Aubry, Mark MD; Molloy, Mick MB; Cantu, Robert MA, MD. Consensus Statement on Concussion in Sport 3rd International Conference on Concussion in Sport Held in Zurich, November 2008. Clinical Journal of Sport Medicine: May 2009 - Volume 19 - Issue 3 - pp 185-200

Resources: