Management of Sports-Related Concussions
Isidore Newman School

Introduction:
Medical management of sports-related concussions continues to evolve. Recently, there has been a significant amount of new research regarding sports-related concussions in high school athletes. Isidore Newman School has established this protocol to provide education about concussions for coaches, school personnel, parents, and athletes. This protocol outlines procedures for staff to follow in managing concussions, and outlines school policy as it pertains to return to play issues following a concussion.

Isidore Newman School seeks to provide a safe return to activity for all athletes following any injury, but particularly after a concussion. In order to effectively and consistently manage these injuries, procedures have been developed to aid in insuring that concussed athletes are identified, treated and referred appropriately, receive appropriate follow-up medical care during the school day (including academic accommodations) and are fully recovered prior to returning to an activity.

In addition to recent research, three primary documents were consulted in developing this protocol. The “Summary and Agreement Statement of the 3rd International Conference on Concussion in Sport, Zurich 2008” (referred to in this document as the Zurich Statement), The National Federation of High Schools’ “Suggested Guidelines for Management of Concussion” (revised April 2010), and the “National Athletic Trainers’ Association Position Statement: Management of Sport-Related Concussion” (referred to in this document as the NATA Statement).

This protocol shall be reviewed annually by the athletic department and health center staff at Isidore Newman School. Any changes or modifications will be reviewed and given to athletic department staff, including coaches and other appropriate school personnel in writing.

All athletic department staff shall attend a yearly in-service meeting in which procedures for managing sports-related concussions are discussed.

Definition of a Concussion:
A concussion is a complex physiological process induced by a bump, blow, or jolt to the head or body, transmitting a force that causes the brain to literally bounce around or twist within the skull. The damage done to the brain is at the microscopic level: cells and cell membranes are stretched and torn. This damage leads to an abnormal movement of calcium, potassium, glutamate, and other substances in and out of the injured cells. These changes disrupt the normal function of the cells in the injured part of the brain.

At the same time that these chemical changes are happening, the brain restricts blood flow to the damaged areas. Blood is the only source of fuel (glucose) for the brain. This is a problem, as the injured brain cells now have a limited supply of fuel, but an increased demand for fuel as they attempt to repair themselves. This mismatch of fuel supply and demand leads to further cell injury and dysfunction.
It is thought that the disruption in the supply and demand of fuel is the key reason why people who have had a concussion are so susceptible to having symptoms worsen after an injury if they continue to be active and why there is a greater risk for further injury in the hours and days after a concussion.

The National Athletic Trainers Association Position Statement on Management of Sport Concussion (2014) defines a concussion as a trauma-induced alteration in mental status that may or may not involve loss of consciousness. The position statement recommends that terms such as ding, getting one’s bell rung and clearing the cobwebs are all colloquial terms, antiquated, minimize the injury severity and should not be used to refer to concussion or mild traumatic brain injury.

**Recognition of Concussion**
Common signs and symptoms of sports-related concussion

**Signs** (observed by others):
- Athlete appears dazed or stunned
- Confusion
- Forgets plays
- Unsure about game, score, opponent
- Moves clumsily (altered coordination)
- Balance problems
- Personality change
- Responds slowly to questions
- Forgets events prior to hit
- Forgets events after the hit
- Loss of consciousness (any duration)

**Symptoms** (reported by athlete):
- Headache
- Fatigue
- Nausea or vomiting
- Double vision, blurry vision
- Sensitive to light or noise
- Feels sluggish
- Feels “foggy”
- Problems concentrating
- Problems remembering

These signs and symptoms following a witnessed or suspected blow to the head or body are indicative of probable concussion. Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion, or balance problems) shall be immediately removed from the contest or practice and shall not return to play until cleared by an appropriate health care professional.
Management and Referral Guidelines for All Staff

1. The following situations indicate a medical emergency and require activation of the Emergency Medical System:
   - Any athlete with a witnessed loss of consciousness (LOC) of any duration should be spine boarded and transported immediately to nearest emergency department via emergency vehicle.
   - Any athlete who has symptoms of a concussion, and who is not stable (i.e., condition is worsening), is to be transported immediately to the nearest emergency department via emergency vehicle.
   - An athlete who exhibits any of the following symptoms should be transported immediately to the nearest emergency department, via emergency vehicle.
     - Deterioration of neurological function
     - Decreasing level of consciousness
     - Decrease or irregularity in respirations
     - Any signs or symptoms of associated injuries, spine or skull fracture, or bleeding
     - Mental status changes: lethargy, difficulty maintaining arousal, confusion or agitation
     - Seizure activity

2. An athlete who is symptomatic but stable, may be transported by his or her parents. The parents should be advised to contact the athlete’s primary care provider, physician of choice or to seek care at the nearest emergency department on the day of the injury.

Guidelines and Procedures for Coaches:

Recognize concussion
1. All coaches should become familiar with the signs and symptoms of a concussion that are described above.
2. Training will occur for coaches of every sport as part of first aid recertification
3. Annual Completion of CDC Heads Up in Concussions Workbook

Remove from activity
Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion, or balance problems) shall be immediately removed from the contest and shall not return to play until cleared by an appropriate health care professional.

When in doubt, sit ‘em out
Refer the athlete for medical evaluation
1. The Certified Athletic Trainer is responsible for notifying the athlete’s parents of the injury if he or she is present at the time of injury. If a certified athletic trainer is not present at the athletic event then the coach is responsible for notifying the parent/guardian.
   A. Contact the parents to inform them of the injury. Depending on the injury, either an emergency vehicle will transport or parents will pick the athlete up at the event for transport.
   B. A medical evaluation is required to begin the process of “Return to Play”.
2. In the event that an athlete’s parents cannot be reached, and the athlete is able to be sent home (rather than directly to MD):
A. The coach should insure that the athlete will be with a responsible individual, who is capable of monitoring the athlete and understanding the home care instructions, before allowing the athlete to go home.
B. The coach should continue efforts to reach a parent.
C. If there is any question about the status of the athlete, or if the athlete is not able to be monitored appropriately, the athlete should be referred to an emergency department for evaluation. A coach should accompany the athlete and remain with the athlete until a parent arrives.
D. Athletes with suspected head injuries should not be permitted to drive home.

3. Coaches should seek assistance from the host-site certified athletic trainer (ATC) or team physician, if available at an away contest.

Guidelines and Procedures for Certified Athletic Trainers
Pre-Season Care:
1. Review of concussion signs and symptoms with all participating athletes in contact and collision sports, grades 6-12.
2. Annual review of concussion policy with parents attending pre-season coaches meetings.
3. Annual Baseline Neuro-Cognitive testing using the IMPACT Test data on all contact and collision athletes grades 9-12, and all football players grade 7-12

On-site Evaluation Care:
1. Removal from activity
2. Appropriate concussion evaluation using SCAT5 or Child SCAT 5.
3. MD referral as needed.
4. Home Instruction sheet given to parent/guardian

Follow-Up Care of the Athlete During The School Day
Responsibilities of the athletic trainer after notification of student’s concussion:
1. The athlete will be instructed to report to the school athletic trainer upon his or her return to school. At that point, the athletic trainer will:
   A. Re-evaluate the athlete with complete documentation.
   B. Provide an individualized health care plan based on both the athlete’s current condition, and initial injury information provided by the parent.

2. Notify the student’s advisor and teachers of the injury immediately.

3. Notify the student’s P.E. teacher immediately that the athlete is restricted from all physical activity until cleared by his or her treating physician.

4. Monitor the athlete as needed during the school day.
Return to Play (RTP) Procedures after Concussion

1. Return to activity and play is a medical decision. The athlete must meet all of the following criteria in order to progress to activity: Asymptomatic at rest (one week) and with exertion (including mental exertion in school) AND have written clearance from their primary care provider or concussion specialist (athlete must be cleared for progression to activity by a physician other than an Emergency Room physician, if diagnosed with a concussion).

2. Once the above criteria are met, the athlete will be progressed back to full activity following the step-wise process detailed below. (This progression must be closely supervised by a Certified Athletic Trainer).

3. Progression is individualized, and will be determined on a case-by-case basis. Factors that may affect the rate of progression include: previous history of concussion, duration and type of symptoms, age of the athlete, and sport/activity in which the athlete participates. An athlete with a prior history of concussion, one who has had an extended duration of symptoms, or one who is participating in a collision or contact sport may be progressed more slowly.

4. 24-48 hours of mandatory rest following the cessation of subjective signs and symptoms before stepwise progression begins.

5. Successful completion of post-injury IMPACt Test

6. Stepwise progression as described below:

   **Step 1.** Complete cognitive rest. This may include staying home from school or limiting school hours (and studying) for several days. Activities requiring concentration and attention may worsen symptoms and delay recovery.

   **Step 2.** Return to school full-time.

   **Step 3.** Light exercise. This step cannot begin until the athlete is no longer having concussion symptoms and is cleared by a physician for further activity. At this point the athlete may begin walking or riding an exercise bike. No weight-lifting.

   **Step 4.** Running in the gym or on the field. No helmet or other equipment.

   **Step 5.** Non-contact training drills in full equipment. Weight-training can begin.

   **Step 6.** Full contact practice or training.

   **Step 7.** Play in game. Must be cleared by physician before returning to play.

   - The athlete should spend 1 to 2 days at each step before advancing to the next. If post concussion symptoms occur at any step, the athlete must stop the activity and the treating physician must be contacted. Depending upon the specific type and severity of the symptoms, the athlete may be told to rest for 24 hours and then resume activity at a level one step below where he or she was at when the symptoms occurred.

Guidelines and Procedures for Teachers and Advisors:

**Responsibilities of the Student’s Advisor**

It is normal for the athlete to feel frustrated, sad, and even angry because they cannot return to recreation or sports right away. A student may also feel isolated from peers and social networks. An advisor may want to offer support and encouragement or seek the advice of the school counselor and health care professional when dealing with the student. It is recommended that the advisor:
1. Monitor the student closely and recommend appropriate academic accommodations for students who are exhibiting symptoms of post-concussion syndrome.
2. Communicate with athletic trainer on a regular basis, to provide the most effective care for the student.

Responsibilities of the Student’s Teachers and Administration
Some individuals may be able to attend school without increasing their symptoms. Some students may require some modification depending on the nature of their symptoms. Trial and error may be needed in order to discover what they can and cannot do. The following is a list of suggested modifications that may be appropriate for a student-athlete recovering from a concussion:

1. Half day of classes depending on the severity of symptoms.
2. Frequent rests or breaks in the health center during the school day.
3. Alternating a class with rest period.
4. Some students may need to be driven to school and avoid walking to school.
5. Elevator pass and avoidance of stairs.
6. Not attending Physical Education Class or workout classes.
7. Workload and homework reduction.
8. Extra time or postponement of tests and quizzes.
9. Reduction of time spent on computer, reading, or writing.
10. Be aware of the following signs and symptoms that are often reported from teachers whom have worked with students recovering from concussions:
   A. Increased problems paying attention or concentrating
   B. Increased problems remembering or learning new information
   C. Difficulty organizing tasks
   D. Inappropriate or impulsive behavior during class
   E. Greater irritability.
   F. Ability to cope with stress is reduced or more emotional than usual.
   G. Answers questions slowly
   H. Forgets class schedule or work assignments

Guidelines and Procedures for athletes and parents.

1. Athletes and parents are to report any signs and symptoms of a concussion to the health center staff at Isidore Newman School.
2. In compliance with the Louisiana Youth Concussion Act (ACT 314) each student athlete and parent/legal guardian must sign a concussion and head injury information sheet and return it to the Athletics Department at Isidore Newman School.
3. Completion of Helmet Use Acknowledgement Form prior to first day of contact practice.
Additional information:


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