



# Crandall ISD Protocol and Procedures for the Management of the Sports-Related Concussion

Medical management of sports-related concussion is evolving. Recently, there has been a significant amount of research focused on the sports-related concussion in youth athletes and subsequently management standards are evolving. Crandall ISD has established this document to provide education about concussions for athletic department staff and other school personnel. This document outlines procedures for staff to follow in managing head injuries. It also outlines school policy as it pertains to academic accommodations and return to play after a concussion.

Crandall ISD desires to return concussed athletes to academics and athletics in a safe and methodological way. In order to effectively and consistently manage these injuries, procedures have been developed. The goal is to ensure that the concussed athletes are identified, treated and referred appropriately. Then receive appropriate follow-up medical care as it pertains to academic accommodation and return to athletics. A Concussion Oversight Team (COT) has been established and will include the following members: Dr. James Sterling, Mary Lynn Miller, ATC, LAT, Coordinator of Sports Medicine, Lexi Johnson, ATC, LAT, Jessie Velazquez, ATC, LAT & Joe Velazquez, ATC, LAT.

In addition to recent research, two (2) primary documents were consulted in developing this protocol. The “Consensus Statement on Concussion in Sport: The 4<sup>th</sup> International Conference on Concussion in Sport, Zurich, November 2012” (referred to in this document as the Zurich Statement), and the “National Athletic Trainers’ Association Position Statement: Management of Sport-Related Concussion” 2(referred to in this document as the NATA Statement).

This protocol will be reviewed on a yearly basis, by the CISD medical staff. Any changes or modifications will be reviewed and given to athletic department staff and appropriate school personnel in writing.

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## I. Recognition of Concussion

### A. Common signs and symptoms of sports-related concussion

#### 1. Signs:

- Athlete appears dazed or stunned
- Is confused about what to do (about assignment, plays, etc.)
- 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)

## 2. Symptoms:

- Headache
- Fatigue
- Confusion
- Nausea or vomiting
- Double vision, blurry vision
- Sensitive to light or noise
- Feels sluggish □ Feels “foggy”
- Problems concentrating
- Problems remembering

3. These signs and symptoms are indicative of a probable concussion. Other causes for symptoms should also be considered.

## B. Cognitive impairment (altered or diminished cognitive function)

i. General cognitive status can be determined by sideline cognitive testing. Athletic Trainer (AT) may utilize sideline concussion card.

## II. ImPACT neuropsychological testing requirements

1. ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) is a research-based software tool utilized to evaluate recovery after concussion. It was developed at the University of Pittsburgh Medical Center (UPMC). ImPACT evaluates multiple aspects of neurocognitive functions, including memory, attention, brain processing speed, reaction time, and postconcussion symptoms.
2. All high school athletes at CISD are required to take a baseline ImPACT test prior to participation in sports that have a significant or moderate risk of concussion. (Football, Volleyball, Basketball, Soccer, Baseball, Softball).
3. Baseline ImPACT tests will be reviewed to ensure that they are valid. Athletes may be required to take more than one baseline test.

## III. Management and Referral Guidelines for Staff

### A. Suggested Guidelines for Management of Sports-Related Concussions

1. 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.
2. Any athlete who has symptoms of a concussion, and who is not stable (i.e., condition is changing or deteriorating), is to be transported immediately to the nearest emergency department via emergency vehicle.
3. An athlete who exhibits any of the following symptoms should be transported immediately to the nearest emergency department:
  - a. deterioration of neurological function
  - b. decreasing level of consciousness
  - c. decrease or irregularity in respirations
  - d. decrease or irregularity in pulse

- e. unequal, dilated, or unreactive pupils
  - f. vomiting
  - g. any signs or symptoms of associated injuries, spine or skull fracture, or bleeding
  - h. mental status changes: lethargy, difficulty maintaining arousal, confusion or agitation
  - i. seizure activity
  - j. cranial nerve deficits
4. An athlete who is symptomatic but stable, may be transported by his parent's home or to the hospital
    - a. Give parents the option of emergency transportation, even if you do not feel it is necessary.
  5. If school medical staff is not in attendance of game or practice the head coach is to notify both the school nurse and athletic trainers of the suspected injury

#### IV. Procedures for the Athletic Trainer

- A. The Athletic Trainer will assess the injury, or provide guidance to the coach if unable to personally attend to the athlete.
  1. Immediate referral to the athlete's primary care physician, ImPACT physician or to the hospital will be made when medically appropriate.
  2. The Athletic Trainer will perform serial assessments following recommendations in the NATA Statement, and utilize sideline card.
    - a. The Athletic Trainer will notify the athlete's parents and give written and/or verbal home and follow-up care instructions.
    - b. Follow up instructions may include; reprieve from the night's homework, and absence from school the next day
- B. The Athletic Trainer will notify the Athletic Director of a suspected head injury.
- C. The Athletic Trainer will notify the school nurse of the injury as soon as possible so that the school nurse can initiate appropriate follow-up care.
- D. Administer the post-concussion ImPACT test
  - a. The initial post-concussion test will be administered within 48-72 hours' post-injury, or whenever possible.
  - b. Repeat post-concussion tests will be given at appropriate intervals, usually 7 days unless specified by the physician

#### V. Follow-up Care During the School Day

- A. Responsibilities of the school nurse or Athletic Trainer after notification of student's concussion
  1. The athlete will be instructed to report to the school nurse or the Athletic Trainer upon his or her return to school. At that point, the school nurse or Athletic Trainer will notify:
    - a. The school counselor
    - b. The principal
    - c. The athlete's teachers
    - d. Other school personnel as determined by the policy
  2. If the school nurse receives notification of a student-athlete who has sustained a concussion from someone other than the Athletic Trainer (athlete's parent, athlete, physician note), the Athletic Trainer, and school administration should be notified as soon as possible.
  3. Athlete will be instructed to seek medical care from school nurse or Athletic Trainer if symptoms return during the school day.

**\*\*\* This area of concussion management will vary from school to school**

## VI. Academic Modification Guidelines

1. Because of the high academic demands placed on student athletes at CISD academic modification will take place in two forms. The objective is to allow for adequate healing time prior to return to mental activity. This will encourage healing and result in less school time missed.
  - a. Following a suspected head injury, the Athletic Trainer or Registered Nurse can allow for modification of the night's homework and school attendance as long as symptoms are present
  - b. Under recommendation by the ImpACT credentialed physician i. Full Rest ii. Home school iii. Half school days iv. Full return to school

## VII. Return to Play (RTP)

- A. Returning to participate on the same day of injury
  - a. As previously discussed in this document, an athlete who exhibits signs or symptoms of concussion, or has abnormal cognitive testing, should not be permitted to return to play. Any athlete who denies symptoms but has abnormal sideline cognitive testing should be held out of activity. b. "When in doubt, hold them out."
- B. Return to play after concussion
  1. The athlete must meet the following criteria in order to progress to activity:
    - a. Asymptomatic at rest and with exertion (including mental exertion in school) AND:
    - b. Within normal range of baseline on post-concussion ImpACT testing AND:
    - c. Have written clearance from an ImpACT credentialed physician OR:
    - d. If the athlete chooses not to visit an ImpACT credentialed physician the athlete must wait 2 weeks, be symptom free, have written physician clearance and follow the stepwise progression prior to return to play
  2. Once the above criteria are met, the athlete will be progressed back to full activity following a stepwise process, (as recommended by both the Prague and NATA Statements) under the supervision of the Athletic Trainer. 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
  3. Stepwise progression as described in the Zurich Statement along with guidelines set forth by the Texas Health: Ben Hogan Sports Medicine Concussion Center:

**Step 1:** Light aerobic exercise: 5 – 10 minutes on an exercise bike or light jog; no weight lifting, resistance training, or any other exercises.

**Step 2:** Moderate aerobic exercise: 15 – 20 minutes of running at moderate intensity in the gym or on the field without a helmet or other equipment.

**Step 3:** Non-contact training drills in full uniform. May begin weight lifting, resistance training, and other exercises.

**Step 4:** Full contact practice or training.

**Step 5:** Full game play.

Note: With this stepwise progression, the athlete should continue to proceed to the next level if asymptomatic at the current level. Generally, each step should take 24 hours, so that an athlete would take approximately 1 week to proceed through the full rehabilitation protocol once asymptomatic at rest and with provocative exercise. If any post-concussion symptoms occur while in the stepwise program, then the patient should drop back to the previous asymptomatic level and try to progress again after a further 24hour period of rest has passed.

<b>STAGE 1</b>	
Recommendations:	Exercise in Quiet Area (ATR, PT Clinic) No Impact Activities Balance & Vestibular Treatment (PRN) Limit Head Movements & Position Changes Limit Concentration Activities
Activity:	Light Aerobic Conditioning (Stationary/Recumbent Bike) Balance Activities (BAPS Board, Foam Pad, Mini Trampoline, etc.) Exercises that Limit Head Movements (weight machines, squats/lunges, etc.) Core Exercises With No Head Movements (Planks, Leg Lifts, Stability Work, etc.)
<b>STAGE 2</b>	
Recommendations:	Exercise in Gym Area (Weight Room, Gym) Use Various Equipment Allow Positional Changes & Head Movement Low Level Concentration Activities (Counting, Repetitions, Recall Plays/Formations/Game Plan, etc.)
Activity:	Light to Moderate Aerobic Conditioning (Bike, Elliptical, increased time & intensity) Balance Activities With Head Movements (Add Ball Toss, weight pickups, etc) Resistance Exercises with Head Movements (Rotating Lunges, Medicine Ball Work, etc) Low Intensity Sport Specific Activities Core Exercises with Head Movements
<b>STAGE 3</b>	
Recommendations:	Exercise in Any Environment Strength Conditioning Increased Balance & Proprioceptive Work Concentration Challenges
Activity:	Moderately Aggressive Aerobic Exercises (Running, Plyometrics, Stair Running, etc) All Forms of Strength Exercises (Normal Lifting) Dynamic Warm Ups Impact Activities (Running, Jumping, Plyometrics) Challenge Positional Changes (Burpees, Mountain Climbers, etc) More Aggressive Sport Specific Activities
<b>**STAGE 4 (NO CONTACT PRACTICE)**</b>	
Recommendations:	Avoid Contact Activity Resume Aggressive Training in All Environments
Activity:	Max-Exertion Sport Specific Activities No Contact
<b>**STAGE 5 (FULL PRACTICE WITH CONTACT)**</b>	
Recommendations:	Initiate Contact and Full Exertion Activities as Sport Indicates
Activity:	Full Physical Training Activities with Contact

1. Troutman-Enseki, C. (2013). Post Concussion Management: Exertion Therapy. Pittsburgh, PA. University of Pittsburgh Center for Sports Medicine

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