Lee County School District: Athletic Department Protocol and Procedures for Management of Sports-Related Concussion

Medical management of sports-related concussions are evolving. In recent years, there has been a significant amount of research into sports-related concussions in high school athletics. The Lee County School District has established this protocol to provide education about concussions for high school athletic department staff and other school personnel. This protocol outlines procedures for staff to follow in managing head injuries, and outlines school policy as it pertains to return to play issues after a concussion.

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

In addition to recent research, two (2) primary documents were consulted in developing this protocol. The "Summary and Agreement Statement of the 2nd International Conference on Concussion in Sport, Prague 2004" [i] (referred to in this document as the Prague Statement), and the "National Athletic Trainers' Association Position Statement: Management of Sport-Related Concussion" [ii] (referred to in this document as the NATA Statement).

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

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

Contents:

I. Recognition of concussion

A. Common signs and symptoms of sports-related concussions

1. Signs (observed by others):
    a. Student-athlete appears dazed or stunned
    b. Confusion (about assignment, plays, etc.)
    c. Forgets plays
    d. Unsure about game, score, opponent
    e. Moves clumsily (altered coordination)
    f. Balance problems
    g. Personality change
    h. Responds slowly to questions
    i. Forgets events prior to hit
    j. Forgets events after the hit
    k. Loss of consciousness (any duration)

2. Symptoms (reported by student-athlete):
    a. Headache
    b. Fatigue
    c. Nausea or vomiting
    d. Double vision, blurry vision
    e. Sensitive to light or noise
    f. Feels sluggish
    g. Feels "foggy"
    h. Problems concentrating
    i. 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)

1. General cognitive status can be determined by simple sideline cognitive testing.
    a. Athletic trainer will utilize the Sideline Concussion Evaluation Pocket Card which has been created using aspects of the SCAT3 (Sports Concussion Assessment Tool)[iii], SCAT2 and SAC. Athletic trainer may also utilize the Sideline ImPACT and/or King-Devick (if available), or other standard tools for sideline cognitive testing. See Appendix A.

II. Baseline/Post Concussion testing requirements (if available)

A. Neuropsychological testing is utilized to help determine recovery after concussion.

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 function; including memory, attention, brain processing speed, reaction time, and post-concussion symptoms.

2. The King-Devick Test is an objective, physical method of evaluating visual tracking and saccadic eye movements. King-Devick Test is based on the time to perform rapid number naming. It involves reading aloud a series of single digit numbers from left to right on three test cards.

3. If available at the high schools, all student-athletes participating in collision and contact sports (as defined by the American Academy of Pediatrics classifications) are required to take a baseline ImPACT and/or King-Devick test prior to participation in sports within the LCSD.

B. All student-athletes will view a video presentation entitled: "Concussion in Sports-What You Need to Know" at www.nfhslearn.com, prior to taking the baseline test.

C. If available, student-athletes in collision and contact sports (as defined by the American Academy of Pediatrics classifications) are required to take a "new" baseline test every two years (usually freshman and junior year).

III. Management and Referral Guidelines for All Staff

A. Suggested Guidelines for Management of Sports-Related Concussion[iv]

1. Any student-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 student-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. Any student-athlete who exhibits any of the following symptoms should be transported immediately to the nearest emergency department, via emergency vehicle.
    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. any signs or symptoms of associated injuries, spine or skull fracture, or bleeding
g. mental status changes: lethargy, difficulty maintaining arousal, confusion or agitation
h. seizure activity
i. cranial nerve deficits

4. A student-athlete who is symptomatic but stable, may be transported by his or her parents/legal guardian. The parents/legal guardian should be advised to contact the student-athlete's primary care physician, or seek care at the nearest emergency department, on the day of the injury.
    a. ALWAYS give parents/legal guardian the option of emergency transportation, even if you do not feel it is necessary.

IV. Procedures for the Certified Athletic Trainer (ATC)

A. The athletic trainer will assess the injury or provide guidance to the coach/first responder if unable to personally attend to the student-athlete.

1. Immediate referral to the student-athlete's primary care physician or to the hospital will be made when medically appropriate (see section I).

2. The athletic trainer will perform serial assessments following recommendations in the NATA Statement, and utilize the Sideline Concussion Evaluation Pocket Card which has been created using aspects of the SCAT3 (Sports Concussion Assessment Tool)[v], SCAT2 and SAC. Athletic trainer may also utilize the Sideline ImPACT and/or King-Devick (if available), or other standard tools for sideline cognitive testing. See Appendix A.

    a. The athletic trainer will notify the athlete's parents and give written and verbal home and follow-up care instructions. (Appendix B- Head Injury Information Sheet.docx)

B. The athletic trainer will notify the school nurse/clinic assistant of the injury prior to the next school day so that the school nurse can initiate appropriate follow-up in school immediately upon the athlete's return to school.

1. The athletic trainer will continue to provide coordinated care with the school nurse for the duration of the injury.

2. If needed, the athletic trainer will communicate with the athlete's school counselor regarding the athlete's neurocognitive and recovery status.

C. The athletic trainer will notify the athletic director of the injury prior to the next school day so they can assist in appropriate follow up care upon the athlete's return to school.

1. The athletic trainer will continue to communicate with the athletic director regarding the athlete's status for the duration of the injury.

2. Corroborate proper medical documentation for student-athlete's return to play. (Appendix C- FHSAA AT18.pdf)

D. The athletic trainer and/or their designee are responsible for administering post-concussion ImPACT testing if available.

1. The initial post-concussion test will be administered within 48-72 hours post-injury whenever possible.
    a. Repeat post-concussion tests will be given at appropriate intervals dependent upon clinical presentation.

2. The athletic trainer will review post-concussion test data with the student-athlete and the student-athlete's parent.
    a. Baseline and Post Test data, if available, will be forwarded to the school medical advisor for review and consultation.

3. The athletic trainer will forward testing results to the student-athlete's treating physician with parental permission, and a signed Consent for Release of Medical Information form. (Appendix D- Consent for Release of Medical Information.docx)

4. The athletic trainer or the student-athlete's parent may request that a neuropsychological consultant review the test data. The student-athlete's parents will be responsible for charges associated with the consultation.

5. The athletic trainer will monitor the student-athlete, and keep the school nurse informed of the individual's symptomatology and neurocognitive status for the purposes of developing or modifying an appropriate health care plan for the student-athlete.

6. The athletic trainer is responsible for monitoring recovery and coordinating the appropriate return to play activity progression.

7. The athletic trainer will work with the coach, athletic director, and school nurse to maintain appropriate documentation regarding assessment and management of the injury.

V. Guidelines and procedures for coaches and first responders:

RECOGNIZE, REMOVE, REFER

A. **Recognize** concussion.

1. All coaches and first responders are required to complete a course on NFHSlearn.com called "Concussion in Sports" prior to their season.

2. All coaches and first responders should become familiar with the signs and symptoms of a concussion that are described in section I.

3. Very basic cognitive testing should be performed to determine cognitive deficits.
    a. See appendix E: CDC Fact Sheet for Coaches.(Appendix E- CDC Concussion fact Sheet for Coaches Clipboard.pdf)

B. **Remove** from activity.

1. If a coach or first responder suspects the student-athlete has sustained a concussion, the student-athlete should be removed from activity until evaluated medically.
    a. **Any student-athlete who exhibits signs or symptoms of a concussion should be removed immediately, assessed, and should not be allowed to return to activity that day.**

C. **Refer** the student-athlete for medical evaluation.

1. Coaches and first responders should report all possible head injuries to the athletic trainer or medical professional on staff and athletic director as soon as possible for medical assessment and management, and for coordination of home instructions and follow-up care.
    a. The athletic trainer will be responsible for contacting the student-athlete's parents and providing follow-up instructions. (Appendix B)

2. Coaches should seek assistance from the host site athletic trainer if available at an away contest.

3. If the athletic trainer is unavailable, or the athlete is injured at an away event, the coach or first responder is responsible for notifying the student-athlete's parents of the injury.
    a. Contact the parents to inform them of the injury and make arrangements for them to pick the student-athlete up at school.
    b. Contact the athletic trainer, with the athlete's name and home phone number, so that follow-up can be initiated.

c. Remind the student-athlete to report directly to the school nurse or clinic assistant before school starts on the day he or she returns to school after the injury.

4. In the event that an athlete's parents cannot be reached and the student-athlete is able to be sent home (rather than directly to MD):
    a. The coach, first responder or athletic trainer should insure that the student-athlete will be with a responsible individual, who is capable of monitoring the student-athlete and understanding the home care instructions before allowing the student-athlete to go home.
    b. If there is any question about the status of the student-athlete, or if the student-athlete is not able to be monitored appropriately, the student-athlete should be referred to the emergency department for evaluation.
        i. A coach, first responder or athletic trainer should accompany the student-athlete and remain with the student-athlete until the parents arrive.
    c. Student-athletes with suspected head injuries should not be permitted to drive home.

VI. FOLLOW-UP CARE OF THE ATHLETE DURING THE SCHOOL DAY AND RETURN TO EDUCATE PROCEDURES

A. Responsibilities of the school nurse or clinic assistant after notification of student-athlete's concussion.

1. The student-athlete will be instructed to report to the clinic upon his or her return to school. The clinic assistant will notify the school nurse. The school nurse will communicate with the student athlete's parents for further doctors' orders and/or restrictions if none received. (Appendix F- Return To Learn)

2. Notify the student-athlete's school counselor and teachers of the injury immediately via the Your Student has a Concussion form and the Return to Learn form. (Appendix G- Your Student Has A Concussion.pdf)

3. Notify the student-athlete's P.E. and ROTC teacher immediately that the student-athlete is restricted from all physical activity until further evaluation by an appropriate healthcare professional. In Florida, an appropriate health-care professional (AHCP) is defined as either a licensed physician (MD, as per Chapter 458, Florida Statutes), a licensed osteopathic physician (DO, as per Chapter 459, Florida Statutes), or a licensed physicians assistant under the direct supervision of a MD/DO (as per Chapters 458.347 and 459.022, Florida Statutes). (Appendix G)

4. Notify the athletic director of the student-athletes current condition and Return to Learn form if one has been submitted by the student-athlete's health care provider.

5. If the school nurse or clinic assistant receives notification of a student-athlete who has sustained a concussion from someone other than the athletic trainer (athlete's parent, athlete, and physician note), the athletic trainer and athletic director should be notified as soon as possible, so follow up care and ImPACT testing can be initiated.

6. Instruct the student-athlete to report to the clinic during the school day as symptoms persist or diminish.

7. Per Return to Learn, the school nurse will notify the equity coordinator, in order to facilitate a 504 plan to provide appropriate accommodations.

B. Responsibilities of the student-athlete's school counselor and/or equity coordinator

1. Work closely with the student-athlete's school nurse, athletic director and teachers in order to monitor the student-athlete and ensure the appropriate academic accommodations per the Return to Learn are being implemented.

2. Communicate with the school health office on a regular basis, to provide the most effective care for the student.

3. If prolonged symptoms exist, equity coordinator and school nurse will facilitate a 504 plan with the schools management team in order to provide accommodation.

C. Responsibilities of the student-athlete's Athletic Director

1. Monitor the status of the student-athlete throughout the duration of the injury.

2. Regular communication between the school nurse, school counselor, clinic assistant, coach and athletic trainer regarding the progress of the student-athlete.

3. Corroborate proper medical documentation for student-athlete's return to play (FHSAA AT18). A student-athlete CANNOT begin the athletic RTP process until all classroom activity has returned to normal with medical clearance by AHCP.

VII. RETURN TO PLAY (RTP) PROCEDURES AFTER CONCUSSION

A. Returning to participate on the same day of injury is a - NO

1. 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 on the day of the injury. Any student-athlete who

denies symptoms, but has abnormal sideline cognitive testing should be held out of activity.

2. "When in doubt, hold them out."

B. Return to play after concussion

1. The student-athlete must meet ALL of the following criteria in order to progress to activity:
    a. Asymptomatic at rest and with exertion (including mental exertion in school) AND:
    b. Returned to normal classroom activity AND:
    c. Within normal range of baseline on post-concussion ImPACT testing (if available) AND:
    d. Have written clearance from primary care physician or appropriate health care professional as defined by the FHSAA (athlete must be cleared for progression to activity by a physician other than an Emergency Room physician) on page 1 of the FHSAA AT18 form.

2. Once the above criteria are met, the athlete will be progressed back to full activity following the FHSAA AT18 stepwise process, (as recommended by both the Prague and NATA Statements), under the administration of the athletic trainer, with supervision of a coach and/or first responder.

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 student-athlete, and sport/activity in which the athlete participates. A student-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 should be progressed more slowly.

4. Stepwise progression as described in the Prague Statement and on the FHSAA AT18 form:
    a. Stage 1: No activity – do not progress to step 2 until asymptomatic
    b. Stage 2: Light aerobic exercise – walking, stationary bike
    c. Stage 3: Sport-specific training (e.g., skating in hockey, running in soccer)
    d. Stage 4: Non-contact training drills
    e. Stage 5: Full-contact training after medical clearance
    f. Stage 6: Game play

    Note: If the student-athlete experiences post-concussion symptoms during any phase, the athlete should drop back to the previous asymptomatic level and resume the progression after asymptomatic for 24 hours.

5. The athletic trainer and student-athlete will discuss appropriate sport specific return to play activities for the day. The athlete will be given verbal and written instructions regarding permitted activities. The athletic trainer, coach,

and student-athlete will each sign these instructions. (Appendix H- AT 18 Sport Specific RTP.xlsx)

6. The student-athlete should see the athletic trainer daily for re-assessment and instructions until he or she has progressed to unrestricted activity, and been given a written report to that effect from the athletic trainer.

7. Once the RTP progression has been completed, the athlete must have signed permission from the treating physician on page 2 of the FHSAA AT18 form in order to return to full game participation.

8. Completed FHSAA AT18 forms must remain in the file in the Athletics Office.

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[i] McCrory P, et al. Summary and Agreement Statement of the 2nd International Conference on Concussion in Sport, Prague 2004. *Clin J Sports Med.* 2005; 15(2):48-55.
[ii] Guskiewicz KM, et al. National Athletic Trainers' Association Position Statement: Management of Sport-Related Concussion. *J Athl Train*. 2004;39(3):280-297.
[iii] McCrory P, et al
[iv] Guskiewicz KM, et al
[v] McCrory P, et al