

STUDENTS WITH CONCUSSIONS

Most students who experience a concussion can recover completely as long as they do not return to play prematurely. The effects of repeated concussions can be cumulative, and after a concussion, there is a period in which the brain is particularly vulnerable to further injury. If a student sustains a second concussion during this period, the risk of complications and/or permanent brain injury increases significantly. The consequences of a seemingly mild second concussion can be very severe, and even result in death (i.e., Second Impact Syndrome). In an effort to ensure the proper diagnosis and care for concussions among students, Charlottesville City Schools (CCS) has developed the following comprehensive regulations and procedures.

Definitions

Concussion – a brain injury that is characterized by an onset of impairment of cognitive and/or physical functioning, and is caused by direct or indirect traumatic forces to the head. This brain injury is related to metabolic dysfunction, rather than structural injury, and is typically associated with normal neuroimaging findings (i.e., CT scan, MRI). A concussion can occur with or without a loss of consciousness, and proper management is essential to the immediate safety and long-term future of the injured individual.

Second Impact Syndrome – Is an extreme condition in which a second concussion occurs before a first concussion has properly healed, causing rapid and severe brain swelling and often catastrophic results. Second impact syndrome can result from even a very mild concussion that occurs days or weeks after the initial concussion. This injury is seen more often in adolescent athletes.

Appropriate Licensed Health Care Provider – Is a physician, physician assistant, osteopath, or certified athletic trainer licensed by the Virginia Board of Medicine; a neuropsychologist licensed by the Board of Psychology; or a nurse practitioner licensed by the Virginia State Board of Nursing.

Education

There is no such thing as “got your bell rung”; any brain trauma is a serious injury. Concussions are difficult to see with the untrained eye. Therefore it is necessary that coaches, parents, teachers, students, school medical personnel and administrators are educated about the injury and become familiar with the common signs and symptoms associated with a concussion.

1. Coaches and School Medical Personnel

All coaches and school medical staff will be required to complete the online training for concussions through the National Federation of High Schools. This training will be done on an annual basis with the coaches completing it within the first week of practice for their respective sport and medical personnel completing it within the first month of each academic school year.

Information including signs and symptoms associated with concussions, effects of a concussion on the student, CCS concussion management protocol and return to activity guidelines will be included on the athletic website www.gocville.org.

2. Administrators, Counselors and Faculty

All administrators, counselors and faculty will receive annually, information including signs and symptoms associated with concussions, effects of a concussion on the student's, cognitive (Appendix IV) and athletic performance, and CCS concussion management protocol. This information will be included on the Faculty Canvas Page.

3. **Parent/Guardian and Student-Athlete**

In order to participate in any athletic activity, the student-athlete and their parent/guardian must receive concussion training on an annual basis. The parent/guardian and student-athlete must acknowledge receipt and understanding of the information. `

Written information about concussion can be found online at www.gocville.org.

Each student-athlete will receive the same information in the athletic handbook.

During the parent meeting, the student-athlete and parent/guardian will also have the opportunity to hear a healthcare provider with expertise in concussion management speak about the risk involved with concussions.

If the parent/guardian is unable to be present at the seasonal meeting, the information may be found on the athletic website, www.gocville.org.

4. **General Student Population**

General concussion information including, but not limited to, signs/symptoms, care, and returning to learn will be presented to each freshman class during the fall in Physical Education classes.

Management of a Concussion Each person reacts differently to a brain injury, therefore each student and each concussion should be treated with individual care. The following situations indicate a medical emergency and require activation of the Emergency Medical System:

- Any athlete who has symptoms of a concussion, and who is not stable (condition is worsening)
- Any athlete who exhibits any of the following signs or symptoms:
 - Deterioration of neurological function
 - Decreasing level of consciousness
 - Decrease or irregularity in respirations
 - Unequal, dilated, or unreactive pupils
 - Cranial nerve deficits, such as dilated or unequal pupils, loss of consciousness, vomiting, slurred speech or any seizure activity
 - Any signs or symptoms of a spine injury, skull fracture, or bleeding of the brain
 - Deterioration of mental status; lethargy, difficulty staying awake, confusion or agitation
 - Any seizure activity

If, in the opinion of the school's healthcare provider, a student has sustained a concussion but does not present with the common signs and symptoms, the parent/guardian can obtain a second opinion from

another authorized health care provider with specialty in concussion diagnosis and treatment at their earliest convenience.

The student's own health care provider is appropriate if he/she can certify to be aware of the current medical guidance on concussion evaluation and management.

In the event that the student is seen by a health care provider that does not have specialty training in concussion management and/or the schools healthcare provider is not satisfied with the guidelines provided, it may be required that the student-athlete obtain a third opinion from a health care provider with specialty training in concussion diagnosis and management (i.e. neurologist or neuropsychologist).

Guideline for coaches and/or other related school personnel

If the AT is not available, the coach is responsible for recognizing and providing appropriate care for a suspected concussion. Any student-athlete suspected of sustaining a concussion while under the supervision of a CCS coach should be removed from activity and shall not return to play that day nor until,

- (i) evaluated by an appropriate licensed health care provider as determined by the CCS concussion management team and has been determined not to have sustained a concussion
- or
- (ii) written clearance has been received from such licensed health care provider.
- (iii) online neurocognitive exam scores are within normal limits of baseline
- (iv) graduated return to activity is complete

Appropriate guidelines for referral should be followed (see Management of a Concussion).

If the student-athlete requires immediate referral, EMS should be activated, the parent/guardian should be contacted, and the designated coach should accompany the athlete to the hospital.

If immediate referral is not suggested the coach is responsible for notifying the parent/guardian of the injury, and providing at home care instructions.

Athletes with a suspected concussion should not be allowed to drive themselves home. The parent/guardian should provide transportation home, either themselves or another responsible adult.

If the parent/guardian can not be reached, the coach should insure that the athlete will be in the care of a responsible adult, who is capable of monitoring the athlete and understanding home instructions. Efforts to reach the parent/guardian should continue.

If the injury occurs at an away event, the coach is encouraged to seek the assistance of the host AT.

In the absence of an AT, the coach will have access to the Sport Concussion Assessment Tool (SCAT) V (see Appendix III) for sideline evaluation of a suspected concussion. The coach should notify and report all signs and symptoms of the injury, as well as all knowledge of the mechanism of injury to the CCS AT.

If an athlete presents at practice or competition with signs or symptoms of concussion prior to participation, the coach should not allow the athlete to participate, and follow the previous guidelines.

Guidelines for the Athletic Trainer

The AT should assess the injury and follow appropriate guidelines for referral.

If no immediate referral is indicated the AT should perform serial assessments using the SCAT V(see Appendix III).

The AT will notify the student-athlete's parent/guardian and provide at home care instructions.

Athletes with a suspected concussion should not be allowed to drive themselves home.

The parent/guardian should provide transportation home, either themselves or another responsible adult.

If the parent/guardian can not be reached, the AT should insure that the athlete will be in the care of a responsible adult, who is capable of monitoring the athlete and understanding home instructions.

Efforts to reach the parent/guardian should continue.

The AT should notify the appropriate coach and/or other appropriate school personnel, including but not limited to the school nurse, the student-athlete's teachers, the student's counselor, the student's cohort administrator, and the registrar of the suspected concussion.

Appropriate documentation regarding assessment, management and progression of the injury will be maintained by the AT.

Upon receipt of appropriate written medical release the AT will determine when the student may return to full physical activity based on the completion of the return to play protocol..

Guidelines for the School Nurse

In the event that a student presents to the nurse with signs and/or symptoms of a concussion the nurse should assess the injury to determine if a medical emergency exists as described above in "Management of a Concussion." If an emergency referral is necessary the nurse should follow the appropriate guidelines for off campus referral.

If no immediate off-campus referral is indicated, and the student is not an athlete, the school nurse should contact the parent/guardian (or other designated responsible adult) and provide home care instructions as well as general concussion education. The school nurse will also inform the TBI Team, at which time all follow up care will transfer to the AT, including communicating with the student's teachers.

If the student is an athlete of any season, the school nurse should contact the AT. If the AT is available, they will evaluate the student, contact parent/guardian (or other designated responsible adult) with home care instructions and general concussion education, inform the TBI team and the student's teachers. If

the AT is not available, the nurse will continue care as a non-athlete, and the AT will take over follow-up care as soon as possible.

Return to Academics

The need for students with a suspected concussion to have physical rest has been well known for years. However, in the past several years it has become more evident that cognitive rest is also important. Just as physical exertion can exacerbate and prolong symptoms of a concussion, cognitive exercise can have the same effect.

Following a concussion, a student may have difficulty in school, which could last from days to months. If the AT suspects that the student has sustained a concussion, the student will be allowed excused absences without written notification from an off-campus healthcare provider, until the AT deems it necessary.

The AT will notify teachers of all known concussions that affect a student- in their class. With this notification, it is expected that the teachers will provide appropriate accommodations for the student according to Appendix IV.

In addition to providing appropriate accommodations, teachers will refrain from adding any “zeros” in the gradebook for assignments/tests due while the student has ongoing symptoms related to their concussion. Once the student is cleared by a healthcare professional, teachers should meet with the student to create a reasonable timeline for completing work. Teachers are encouraged to eliminate any repetitive work, and focus on the minimal work necessary to show mastery of content.

Because concussion symptoms usually worsen with the increased cognitive strain of school, returning to school is not recommended until the symptoms are mild or absent at rest.

Return to school should be done as a progression of gradually increasing periods of time. When necessary, accommodations should be made to assist the student in completing homework, test, and/or projects (see Appendix IV).

The student may require rest periods if symptoms become worse throughout the day.

Avoidance of areas or times of extreme noise or overstimulation should be encouraged, including noisy hallways or cafeterias as well as group socializing.

Because the concussed individual appears normal, it is important that all school faculty and staff understand the effects of a concussion as well as the management concerns. Teachers are often the first to notice behavioral changes, therefore are a vital part of the progression back to normal daily activity (see Appendix IV).

If any of the indications are evident, the teacher should notify the AT and/or school nurse and the student’s parent/guardian. Information on concussions will be distributed to all faculty members each academic year. This information will be contained within the faculty handbook.

Final return to learn decisions should be made as a combined effort between the students healthcare provider, counseling, the school nurse and the TBI Team.

Computerized Neurocognitive Exam for Student-Athletes

It has been known for some time that the neurocognitive effects of a concussion last much longer than the subjectively reported symptoms. Computerized neurocognitive tests allows a more accurate determination

of how the brain is healing, rather than relying solely on reported symptoms. This testing is typically administered when the athlete reports being symptom free after a suspected concussion to assess for lingering, and/or subtle cognitive deficits, although it may be given prior to that time to track recovery.

1. Initial baseline testing will involve all athletes in the contact and collision sports listed below.
2. After the first year of testing is complete subsequent years will test only 8th, 9th and 11th grade athletes, as well as any athlete that has not obtained an initial baseline, or any athlete that has sustained a concussion since their most recent baseline.
3. In the pre-season, the student-athlete will take a 30-minute baseline neurocognitive test on an internet-connected computer. The test measures reaction time, memory, and other neurocognitive functions.
4. If the student-athlete sustains a concussion or suspected concussion at a later date, the student-athlete takes a post-trauma test, and the results of that test are statistically compared with the athlete's own baseline.
5. Results of the comparison are immediately available with details regarding the trauma, and evidence of lingering neurologic and neurocognitive symptoms of a concussion. Follow-up tests and reports are available to monitor resolution of neurocognitive and other post-concussive symptoms.

TEAMS TESTED

Football	Volleyball	Field Hockey
Cheerleading	Basketball	Wrestling
Diving	Lacrosse	Soccer
Softball	Baseball	

Return to Activity

In order to return to full participation the student athlete must complete the following requirements.

1. The student-athlete must be asymptomatic
2. The student-athlete must present to the AT a medical clearance note from a licensed healthcare provider outside the division, with some specialty training in concussion
3. The student-athlete must complete the online neurocognitive trauma exam, and scores must be within normal variance of their baseline.
4. The student-athlete must obtain clearance from the AT, after completing the graduated progression back to participation as listed below.

A signed Against Medical Advice form will not be accepted to allow an athlete with signs and/or symptoms of a concussion to return to play before the following protocol is achieved.

Prior to beginning the graduated progression back to play the student-athlete will return successfully to the classroom and will report no symptoms. Athletes must be off any medications that are specifically being used to treat acute symptoms to be considered symptom free.

Progression to the next stage should begin with successful completion of the previous stage.

Each stage should take 24 hours to complete.

If a new stage provokes symptoms, the student-athlete should return to the previous stage for at least 24 hours.

At minimum the student athlete will not return to full participation for 6 days.

1. No activity. Complete physical rest until asymptomatic.
2. Low levels of physical exertion as tolerated (symptoms do not get worse or return during or after activity). This can include walking, light jogging, or light stationary bike.
3. Moderate levels of physical exertion as tolerated. This involves increasing the intensity of aforementioned aerobic activities.
4. Noncontact sport specific drills including full-court drills in basketball, or passing drills in football. May also begin progressive weight training.
5. Full contact practice.
6. Normal game play.

Attachments: Appendix I – Concussion Information for Parent/Guardian and Student

Appendix II – Home Care Instruction for Concussion

Appendix III – Sport Concussion Assessment Tool 2

Appendix IV – Academic Accommodations and Classroom Behavioral Changes

Resources

<http://www.nata.org/statements/position/concussion.pdf>

http://www.cdc.gov/concussion/headsup/high_school.html

<http://www.sportconcussions.com/html/Zurich%20Statement.pdf>

<http://www.sportsmedicineconcepts.com/index.asp>

<https://www.csms.org/upload/files/sportsmed/smsprg2008.pdf>

http://www.atsnj.org/documents/pdf/2010_concussion_in_the_adolescent_athlete.pdf

A Parent's Guide to Concussion in Sports, <http://www.nfhs.org/>

http://bjsm.bmj.com/content/43/Suppl_1/i76.full

Issued: August 5, 2011

Revised: January 9, 2013

Revised: November 30, 2016

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File: JJAC-R

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Revised: August 1, 2019

Revised: August 6, 2020

Legal Reference: Code of Virginia, 1950, as amended Section 22.1-271.5