NCHSAA Student-Athlete Concussion Management Algorithm

Traumatic event or head injury occurs.

Athlete has signs, symptoms, or behaviors of a concussion or is suspected to have sustained a concussion. NCHSAA Concussion Injury History is completed.

Based on evaluation athlete is diagnosed with a concussion.

Physician or licensed medical care provider under physician's supervision evaluates athlete.

Medical Provider Concussion Evaluation Recommendations

1. Licensed physician provides care for the athlete and/or delegates aspects of care to a licensed medical provider who is working under the physician's supervision.
2. Recommendations are selected for SCHOOL, SPORTS, and PE based on the evaluation findings.

Concussion Return-To-Learn Recommendations

Educational accommodations are selected.

(Evaluation Recommendations and Return-to-Learn Recommendations are provided to appropriate school personnel who will monitor the student-athlete's Concussion Return-to-Play Protocol.)

NCHSAA Concussion Return to Play Protocol

A step-by-step progression of physical and cognitive exertion is widely accepted as the appropriate approach to ensure a concussion has been resolved, and that an athlete can safely return to full participation in athletics. It is with this in mind that the NCHSAA Concussion Return to Play Protocol has been designed. Please refer to the Concussion Gradual Return-to-Play Protocol FAQ for guidance when monitoring the student-athlete's RTP.

RETURN TO PLAY FORM

Licensed Physician: 1. Must sign the Return to Play Form if the physician did not sign the Medical Provider Concussion Evaluation Recommendation Form. 2. Must sign the Return to Play Form if the Return to Play Protocol was monitored by first responder.

Licensed Athletic Trainer: May sign the Return to Play Form when stage 5 is successfully completed with approval of the Licensed Physician who signed the Medical Provider Concussion Evaluation Recommendation Form.

First Responder: The Return to Play Form MUST be completed and signed by the Licensed Physician overseeing the student-athlete's care before stage 5 begins.

Parent/Legal Custodian: Must sign Return to Play Form giving consent for their child to return to full participation in athletics.

Athlete Resumes Full Participation in Athletics

Rev June 2017
Licensed Physician (MD/DO) overseeing student-athlete's care **must** sign Return to Play Form before stage 5 of the Return to Play Protocol is begun. Student-athlete **must** remain free of signs and symptoms after completion of stage 5.

**Athlete Resumes Full Participation in Athletics**
Health and Safety Personnel

Licensed Physician - Physician Licensed to Practice Medicine (MD or DO) under Article 1 of Chapter 90 of the General Statutes and has training in concussion management.

Licensed Athletic Trainer (LAT) - An individual who is licensed under Article 34 of Chapter 90 of the General Statutes entitling them to perform the functions and duties of an athletic trainer.

Licensed Physician Assistant (PA) - Any person who is licensed under the provisions of G.S. 90-9.3 to perform medical acts, tasks, and functions as an assistant to a physician.

Licensed Nurse Practitioner (NP) - Any nurse approved under the provisions of G.S. 90-18(14) to perform medical acts, tasks or functions.

First Responder (FR) - A first responder must meet the requirements set forth by the North Carolina State Board of Education Policy ATHL-000.

Key Tenets of Concussion Management

1. No athlete with a suspected concussion is allowed return to practice or play the same day that his or her head injury occurred.
2. Athletes should never return to play or practice if they still have ANY symptoms.
3. A concussion is a traumatic brain injury that can present in several ways and with a variety of signs, symptoms, and neurologic deficits that can present immediately or evolve over time.
4. Both academic and cognitive considerations should be addressed when managing a student-athlete with a concussion. The NC Dept. of Public Instruction now requires a “Return to Learn” plan for students with suspected head injury. Also, consider guidance on proper sleep hygiene, nutrition, and hydration.
5. More than one evaluation is typically necessary for medical clearance for concussion. Due to the need to monitor concussions for recurrence of signs and symptoms with cognitive or physical stress, Emergency Room and Urgent Care physicians typically should not make clearance decisions at the time of first visit.
6. In order to clear an athlete to return to sport without restriction, an athlete should be completely symptom-free both at rest AND with cognitive stress, then with full physical exertion (i.e. has completed Return to Play Protocol).
7. It is not feasible for a provider to diagnosis an acute concussion and provide clearance on the same day.

NCHSAA specific requirements regarding the Gfeller-Waller Concussion Awareness Law as defined by NCHSAA Sports Medicine Advisory Committee (SMAC)

1. All member school student-athletes must have a Licensed Physician’s (MD/DO) signature on the RETURN TO PLAY FORM and/or Medical Provider Concussion Evaluation Form. If the physician has signed the Medical Provider Concussion Evaluation Form both the Return to Play Protocol and decision to release of the student athlete to full participation in athletics may be delegated to the Licensed Athletic Trainer.
2. The physician signing the RETURN TO PLAY FORM and/or the Medical Provider Concussion Evaluation Medical Recommendation Form is licensed under Article 1 of Chapter 90 of the General Statutes and has training in concussion management.
3. Physicians may choose to delegate aspects of the student-athlete’s care to a licensed athletic trainer, licensed nurse practitioner or licensed physician assistant who is working under that physician’s supervision, and may work in collaboration with a licensed neuropsychologist in compliance with the Gfeller-Waller Concussion Law for RTP clearance.
NCHSAA Concussion Injury History

Student-Athlete's Name: ____________________________  Sport: ____________________________  Male/Female

Date of Birth: ______________  Date of Injury: ______________  School: ____________________________

<table>
<thead>
<tr>
<th>Following the injury, did the athlete experience:</th>
<th>Circle one</th>
<th>Duration (write number/circle appropriate)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of consciousness or unresponsiveness?</td>
<td>YES</td>
<td>_____ seconds / minutes / hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seizure or convulsive activity?</td>
<td>YES</td>
<td>_____ seconds / minutes / hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance problems/unsteadiness?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dizziness?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Instability (abnormal laughing, crying, anger?)</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks/ continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confusion?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty concentrating?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vision problems?</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>YES</td>
<td>_____ minutes / hrs / days / weeks /continues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
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</tr>
</tbody>
</table>

Describe how the injury occurred:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Additional details:

________________________________________________________________________

________________________________________________________________________

********************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************************

Name of person completing Injury History: ________________________________________________________________

Contact Information: Phone Number: ____________________________  Email: ____________________________

Injury History Section completed by: Licensed Athletic Trainer, First Responder, Coach, Parent, Other (Please Circle)

Rev June 2017
Medical Provider Concussion Evaluation Recommendations
(To be completed by Licensed Physician (MD/DO) or an LAT, PA, or NP under treating physician’s supervision)

Name of Athlete: __________________________ DOB: __________________________ Date of Evaluation: __________________________

All NC public high school and middle school student-athletes must have a Licensed Physician’s (MD/DO) signature prior to resuming full participation in athletics. Due to the need to monitor concussions for recurrence of signs & symptoms with cognitive or physical stress, Emergency Room and Urgent Care physicians should not make clearance decisions at the time of first visit. All medical providers are encouraged to review the CDC site if they have questions regarding the latest information on the evaluation and care of the scholastic athlete following a concussion injury. Providers should refer to NC Session Law 2012-147, House Bill 792 Gfeller-Waller Concussion Awareness Act for requirements for clearance, and please initial any recommendations you select. (Adapted from the Acute Concussion Evaluation (ACE) care plan [http://www.cdc.gov/concussion/index.html] and the NCHSAA concussion Return to Play Protocol.) The recommendations indicated below are based on today’s evaluation.

RETURN TO SCHOOL:

1. The North Carolina State Board of Education approved “Return-To-Learn after Concussion” policy effective beginning 2016-2017 school year to address learning and educational needs for students following a concussion.

2. A sample of accommodations is found on the Concussion Return to Learn Recommendations page.

RETURN TO SPORTS:

☐ Out of school until __________.

☐ May return to school on __________ with accommodations as selected on the Concussion Return to Learn Recommendations page.

☐ May return to school now with no accommodations needed.

A step-by-step progression of physical and cognitive exertion is widely accepted as the appropriate approach to ensure a concussion has resolved, and an athlete can return to sport safely. The NCHSAA Concussion Return to Play Protocol has been designed using a step-by-step progression.

☐ Not cleared for sports at this time.

☐ Not cleared for physical education at this time.

☐ May do light physical education that poses no risk of head trauma such (i.e. walking laps).

☐ May start RTP Protocol under appropriate monitoring and may return to PE activities after completion.

☐ Must return to examining physician for clearance before returning to sports/physical education.

☐ May start the RTP Protocol under monitoring of Licensed Athletic Trainer (LAT) and progress through all five stages with no office contact required. If student-athlete remains free of signs/symptoms the LAT may sign the RETURN TO PLAY FORM releasing the student-athlete to full participation in athletics. (MD or DO only may make this recommendation.)

Comment: __________________________

Physicians may choose to delegate aspects of the student-athlete’s care to a licensed athletic trainer, licensed nurse practitioner or licensed physician assistant who is working under that physician’s supervision, and may work in collaboration with a licensed neuropsychologist in compliance with the Gfeller-Waller Concussion Law for RTP clearance. *If this option is chosen, that individual should be designated by completing the requested information at the bottom of this page.*

Signature of Physician Licensed to Practice Medicine  MD / DO

______________________________

Please Print Name

Office Address __________________________ Phone Number __________________________

Physician signing this form is licensed under Article 1 of Chapter 90 of the General Statutes and has training in concussion management.

* The physician above has delegated aspects of the student-athlete’s care to the individual designated below.*

Signature of LAT, NP, PA-C, Neuropsychologist (Please Circle)

______________________________

Please Print Name

Office Address __________________________ Phone Number __________________________

Rev June 2017
Concussion Return-To-Learn Recommendations
(To be completed by licensed Physician (MD/DO) or an LAT, PA, or NP under treating physician's supervision)

Name of Athlete: ___________________________ DOB: _____________ Date: ________________

Following a concussion, most individuals typically need some degree of cognitive and physical rest to facilitate and expedite recovery. Activities such as reading, watching TV or movies, playing video games, working/playing on the computer and/or texting require cognitive effort and can worsen symptoms during the acute period after concussion. Navigating academic requirements and a school setting present a challenge to a recently concussed student-athlete. A Return-To-Learn policy facilitates a gradual progression of cognitive demand for student-athletes in a learning environment. Healthcare providers should consider whether academic and school modifications may help expedite recovery and lower symptom burden. It is important to the review academic/school situation for each student athlete and identify educational accommodations that may be beneficial.

Educational accommodations that may be helpful are listed below.

Return to school with the following supports:

Length of Day

___ Shortened day. Recommended ____ hours per day until re-evaluated or (date) _________________.
___ __≤ 4 hours per day in class (consider alternating days of morning/afternoon classes to maximize class participation)
___ Shortened classes (i.e. rest breaks during classes). Maximum class length of ______ minutes.
___ Use __________________________ class as a study hall in a quiet environment.
___ Check for the return of symptoms when doing activities that require a lot of attention or concentration.

Extra Time

___ Allow extra time to complete coursework/assignments and tests.
___ Take rest breaks during the day as needed (particularly if symptoms recur).

Homework

___ Lessen homework by ____ % per class, or ______ minutes/class; or to a maximum of ______ minutes nightly, no more than ______ minutes continuous.

Testing

___ No significant classroom or standardized testing at this time, as this does not reflect the patient's true abilities.
___ Limited classroom testing allowed. No more than _____ questions and/or _____ total time.
___ Student is able to take quizzes or tests but no bubble sheets.
___ Student able to take tests but should be allowed extra time to complete.
___ Limit test and quiz taking to no more than one per day.
___ May resume regular test taking.

Vision

___ Lessen screen time (SMART board, computer, videos, etc.) to a maximum _____ minutes per class AND no more than ______ continuous minutes (with 5-10 minute break in between). This includes reading notes off screens.
___ Print class notes and online assignments (14 font or larger recommended) to allow to keep up with online work.
___ Allow student to wear sunglasses or hat with bill worn forward to reduce light exposure.

Environment

___ Provide alternative setting during band or music class (outside of that room).
___ Provide alternative setting during PE and/or recess to avoid noise exposure and risk of injury (out of gym).
___ Allow early class release for class transitions to reduce exposure to hallway noise/activity.
___ Provide alternative location to eat lunch outside of cafeteria.
___ Allow the use of earplugs when in noisy environment.
___ Patient should not attend athletic practice
___ Patient is allowed to be present but not participate in practice, limited to ___ hours

Additional Recommendations:

__________________________________________

__________________________________________

Rev June 2017
# NCHSAA Concussion Return to Play Protocol

Name of Student-Athlete: ___________________________ Sport: ___________________________ Male/Female

DOB: _______________ Date of Injury: _______________ Date Concussion Diagnosed: _______________

**Licensed Athletic Trainers:** All 5 stages listed below must be completed under the observation of a Licensed Athletic Trainer. The Return to Play Form can then be signed by the Licensed Athletic Trainer, with approval of the Licensed Physician overseeing the student-athlete’s care, thereby releasing the student-athlete to full participation in athletics.

**First Responders:** If the return to play protocol is being monitored by a First Responder, the Licensed Physician overseeing the student-athlete’s care should be kept apprised of his/her progress. This progress may be reviewed electronically or by phone and does not require an additional office visit, unless otherwise indicated by the Licensed Physician. However, the Return to Play Form **MUST** be completed and signed by the Licensed Physician overseeing the student-athlete’s care before Stage 5 is begun.

<table>
<thead>
<tr>
<th>STAGE</th>
<th>EXERCISE</th>
<th>GOAL</th>
<th>DATE SUCCESSFULLY COMPLETED</th>
<th>COMMENTS</th>
<th>MONITORED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20-30 min of cardio activity: walking, stationary bike.</td>
<td>Perceived intensity/exertion: Light Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>30 min of cardio activity: jogging at medium pace. Body weight resistance exercise (e.g. push-ups, lunge walks) with minimal head rotation x 25 each.</td>
<td>Perceived intensity/exertion: Moderate Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>30 minutes of cardio activity: running at fast pace, incorporate intervals. Increase repetitions of body weight resistance exercise (e.g. sit-ups, push-ups, lunge walks) x 50 each. Sport-specific agility drills in three planes of movement.</td>
<td>Perceived intensity/exertion: Hard Activity, changes of direction with increased head and eye movement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Participate in non-contact practice drills. Warm-up and stretch x 10 minutes. Intense, non-contact, sport-specific agility drills x 30-60 minutes.</td>
<td>Perceived intensity/exertion: High/Maximum Effort Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Participate in full practice. If in a contact sport, controlled contact practice allowed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If First Responder is monitoring progress, The RETURN TO PLAY FORM MUST be signed by the Licensed Physician overseeing student-athlete’s care before stage 5 is begun.

If signs or symptoms occur after stage 5 the student-athlete MUST return to Licensed Physician overseeing student-athlete’s care.

Individual who monitored the student-athlete’s Return-to-Play Protocol should sign and date below when stage 5 is successfully completed.

By signing below, I attest that I have monitored the above named student-athlete’s return to play protocol.

Signature of Licensed Physician, Licensed Athletic Trainer, Licensed Physician Assistant, Licensed Nurse Practitioner, Licensed Neuropsychologist, or First Responder (Please Circle)

Date

Please Print Name

Rev June 2017
RETURN TO PLAY FORM:
CONCUSSION MEDICAL CLEARANCE RELEASING THE STUDENT-ATHLETE TO RETURN TO ATHLETIC PARTICIPATION

Name of Athlete: ___________________________ Sport: ___________________________ Male/Female

DOB: ______________ Date of Injury: __________ Date Concussion Diagnosed: __________

This is to certify that the above-named student-athlete has been evaluated and treated for a concussion. I attest that the above-named student-athlete is now reporting to be completely free of all clinical signs and reports he/she is entirely symptom-free at rest and with both full cognitive and full exertional/physical stress.

(If previously designated by the Licensed Physician overseeing the student-athletes care, this form may be completed by a Licensed Athletic Trainer.)

By signing below, I attest that the above-named student-athlete has successfully completed the Return to Play Protocol through stage 4. The student-athlete is released to progress through stage 5 and if remains symptom-free, may resume full participation in athletics.

__________________
Signature of Licensed Athletic Trainer

__________________
Signature of Licensed Athletic Trainer

Physician Office Stamp:

MD or DO (Please Circle)

Date: __________

Physician Office Stamp:

By signing below, I attest that the above-named student-athlete has successfully completed the Return to Play Protocol and is now released to full participation in athletics.

__________________
Signature of Parent/Legal Custodian

__________________
Signature of Parent/Legal Custodian

Date

Date

Please Print Name

Please Print Name

Rev June 2017
Concussion Gradual Return-to-Play (RTP) Protocol FAQ

How will I know if the student-athlete is symptom free and ready to begin the RTP Protocol?

Once a student-athlete is completely free of both documented clinical signs and symptoms at rest and classroom induced signs and symptoms (caused by cognitive stimulation such as reading, computer work, and schoolwork) a gradual Return-to-Play (RTP) progression can be started.

Who can monitor the RTP Protocol?

The Licensed Physician who has examined the student-athlete (or their designee), Licensed Athletic Trainer, Licensed Physician Assistant, Licensed Nurse Practitioner, Licensed Neuropsychologist may monitor the athlete. If one of these licensed medical providers is not accessible, the school’s first responder can monitor the RTP.

Who must go through the RTP Protocol?

All student-athletes diagnosed with a concussion are required to complete a Return-to-Play Protocol that proceeds in a step-by-step fashion with gradual, progressive stages.

Can a student-athlete engage in physical activity/exercise prior to starting Stage 1?

A qualified yes; keeping in mind that the physical activity/exercise should involve NO risk of head trauma and should occur only under direct orders of the treating licensed physician who has evaluated the student-athlete. This light exertion can be started before a student-athlete is entirely asymptomatic. There is evidence that “sub-symptom threshold exercise” (i.e. light exertion that does not cause new or worsen existing symptoms) is safe and may be helpful in concussion recovery.

What activities are included in the RTP Protocol stages?

The RTP Protocol begins with light aerobic exercise designed only to increase your heart rate (e.g. stationary bicycle), then progresses to increasing heart rate with movement (e.g. running), then adds increased intensity and sport-specific movements requiring more levels of neuromuscular coordination and balance including non-contact drills and finally, full practice with controlled contact prior to final clearance to competition.

How does the student-athlete know if he/she is ready to advance to the next stage?

After monitored completion of each stage without provocation/recurrence of signs and/or symptoms, a student-athlete is allowed to advance to the next stage of activity.

How long is a stage?

The length of time of a stage is at least 24 hours.

What should the student-athlete do if signs and/or symptoms return?

If signs/symptoms occur with exercise, the student-athlete should stop and rest. Once free of signs/symptoms for 24 hours, the student-athlete returns to the previously completed stage of the protocol that was completed without recurrence of signs/symptoms and progresses forward in the protocol. During this process, it is important that student-athletes pay careful attention to note any return of concussion signs/symptoms (headache, dizziness, vision problems, lack of coordination, etc.) both during and/or in the minutes to hours after each stage. In the event that signs/symptoms are experienced, they should be reported to the individual monitoring the student-athlete’s RTP Protocol.

What should be done if the student-athlete is unable to complete a stage successfully after two attempts?

If a student-athlete is unable to complete a stage twice without return of signs/symptoms, consultation with the licensed physician who has examined the student-athlete is advised. A student-athlete should be progressed to the next stage only if he/she does NOT experience any signs/symptoms.

How long should the completed RTP Protocol form be kept on file?

The completed RTP Protocol form should remain on file at least until the student-athlete graduates from high school.

Rev June 2017