NCHSAA Student-Athlete Concussion Management Algorithm

Licensed healthcare providers (LHCP) are STRONGLY ENCOURAGED by the NCHSAA to have expertise and training in concussion management. LHCPs include the following individuals: Licensed Physician (MD or DO), Licensed Athletic Trainer (LAT), Licensed Physician Assistant (PA), Licensed Nurse Practitioner (NP), or Licensed Neuropsychologist.

Traumatic event or head injury occurs.

→ Student-athlete (S-A) has signs, symptoms, or behaviors of a concussion or is suspected to have sustained a concussion. Student-athlete is removed from play. **NCHSAA Concussion Injury History Form** is completed.

On-site LHCP evaluates student-athlete.

← Based on evaluation, student-athlete is assessed as having a concussion.

LHCP Concussion Evaluation Recommendations

1. After a neurologic and health evaluation, the LHCP cares for the student-athlete and / or delegates aspects of care to another individual.
2. Recommendations are selected for SCHOOL, SPORTS, and PE based on the evaluation findings and documented on the **Concussion Evaluation Recommendations form**.
3. Using the **Concussion Return to Learn form**, LHCP selects educational accommodations for the student-athlete.
4. The **Concussion Evaluation Recommendations form,** the **Concussion Return to Learn Recommendations form,** and when indicated, the Concussion **Return to Play Protocol form** are returned to appropriate school-based personnel and to the individual who will monitor the student-athlete's return to play protocol.

NCHSAA Concussion Return to Play Protocol

The NCHSAA Concussion Return to Play (RTP) Protocol is **REQUIRED** to be completed in its entirety for any concussed student-athlete before they are released to resume full participation in athletics.

Contact with LHCP may be made electronically, by phone, or in person to review the student-athlete's progress.

If Monitored by the **Licensed Athletic Trainer (LAT) or other LHCP**

- Unless required by the supervising LHCP, no office contact is necessary through stage 5.
- If required, LAT or other LHCP contacts supervising LHCP confirming S-A has remained asymptomatic after stage 4.
- LHCP signs RTP Protocol Form attesting that they monitored RTP.

If Monitored by a **First Responder (FR)**

- FR must sign attesting that they reviewed the progress of the student-athlete through stage 3 and contacted the supervising LHCP before the athlete starts stage 4.
- The LHCP supervising the S-A's care is also contacted when the S-A has completed stage 5 and remained asymptomatic.
- FR signs RTP Protocol Form attesting that they monitored RTP.

LHCP and Parent / Legal Guardian must sign RTP Protocol Form attesting that student-athlete has completed protocol under appropriate supervision and are giving consent to resume full participation in athletics.

If signs or symptoms occur during stage 5 the S-A MUST return to the supervising LHCP.

Please refer to the concussion gradual RTP Protocol FAQ for additional guidance.

Athlete resumes unrestricted participation in athletics.

Revised July 2024

Gfeller-Waller/NCHSAA Concussion Management Principles

Health and Safety Personnel

The NCHSAA STRONGLY RECOMMENDS that each individual listed below has both expertise and training in concussion management and that LATs, PAs, and NPs consult with their supervising physician before signing the Return To Play Form, as per their respective state statutes.

Licensed Physician**- An individual who has training in concussion management licensed to practice medicine (MD or DO) under Article 1 of Chapter 90 of the General Statutes.

Licensed Athletic Trainer (LAT)** - An individual who has 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)** – An individual who has 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 who has is licensed under the provisions of G.S. 90-18(14) to perform medical acts, tasks or functions.

Licensed Neuropsychologist**– An individual who has training in concussion management licensed under Article 18A of Chapter 90 of the General Statutes.

First Responder (FR) – An individual who has meets the requirements set forth by the North Carolina State Board of Education Policy ATHL-000.

**** Licensed Health Care Provider as defined by the Gfeller-Waller Concussion Awareness Act.**

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. It is not feasible for a Licensed Health Care Provider (LHCP) to both diagnose an acute concussion and provide clearance on the same day.
3. Athletes should never return to play or practice if they still have **ANY symptoms.**
4. 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.
5. 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.
6. 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.
7. The NCHSAA **STRONGLY RECOMMENDS** that all member school student-athletes have a Licensed Physician's (MD/DO) signature on the Return to Play Form and/or the Licensed Health Care Provider Concussion Evaluation Recommendations Form. Remember that the Licensed Physician (MD/DO) signing the RETURN TO PLAY FORM and/or the Licensed Health Care Provider Concussion Evaluation Medical Recommendation Form is required to be licensed under Article 1 of Chapter 90 of the General Statutes and have had training in concussion management.
8. The student-athlete must be completely symptom-free both at rest AND with cognitive stress, then with full physical exertion before being cleared to resume full participation in athletics (The NCHSAA Concussion Return to Play Protocol has been designed with this in mind).
9. A step-by-step progression of physical and cognitive exertion is widely accepted as the appropriate approach to ensure a concussion has resolved, and that a student-athlete can return to athletics safely. The NCHSAA Concussion Return to Play Protocol, therefore, has been designed using a step-by-step progression and is **REQUIRED** to be completed in its entirety for any concussed student-athlete before they are released to full participation in athletics.

Gfeller-Waller/NCHSAA Concussion Injury History Form

Name of Athlete: _____ Sport: _____

DOB: _____ Date of Injury: _____ School: _____

Following the injury, did the athlete experience:	Circle one	Duration (write number/ circle appropriate)
Lying motionless on the playing surface?	YES | NO | UNSURE	
Falling unprotected to the surface?	YES | NO | UNSURE	
Actual or suspected loss of consciousness or unresponsiveness?	YES | NO | UNSURE	_____ min / hrs
Seizure, tonic posture (sudden tension or stiffness), or convulsive activity?	YES | NO | UNSURE	_____ min / hrs
Ataxia (poor voluntary muscle control i.e. stumbling, off-balance, speech difficulty)	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Vomiting?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
The above signs strongly suggest concussion, but could indicate a more serious condition or injury. If there is concern about a more serious injury, consider seeking rapid evaluation by a licensed healthcare provider.		
Disorientation or confusion, inability to respond appropriately to questions?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Gait unsteadiness?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Dizziness?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Headache?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Nausea?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Emotional lability (inappropriate laughing, crying, anger, etc?)	YES | NO | UNSURE	_____ hrs / days / weeks / continues
Amnesia?	YES | NO | UNSURE	_____ min / hrs / days / weeks /continues
Difficulty focusing, concentrating, or remembering?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Vision problems?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Light Sensitivity?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Noise Sensitivity?	YES | NO | UNSURE	_____ hrs / days / weeks /continues
Other :_____	YES | NO | UNSURE	_____ hrs / days / weeks /continues

Describe how the injury occurred: _____

_____

_____

Additional details: _____

_____

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

Name of person completing Injury History: _____

Phone Number: _____ Email: _____

Revised July 2024

Licensed Health Care Provider Concussion Evaluation Recommendations Form

Licensed Health Care Providers (LHCP) are STRONGLY ENCOURAGED by the NCHSAA to have expertise and training in concussion management. LHCP's include the following: Licensed Physician (MD/DO), Licensed Athletic Trainer (LAT), Licensed Physician's Assistant (PA), Licensed Nurse Practitioner (NP), or Licensed Neuropsychologist.

Name of Athlete: _____ DOB: _____ Date of Evaluation: _____

All NCHSAA member school student-athletes diagnosed with a concussion are STRONGLY RECOMMENDED to have input and signature from a physician (MD/DO who is licensed under Article 1 of Chapter 90 of the General Statutes and has expertise and training in concussion management) before being cleared to resume full participation in athletics. Due to the need to monitor concussions for recurrence of signs and 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 2011-147, 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.

The recommendations indicated below are based on today's evaluation.

RETURN TO SCHOOL / ACADEMICS:

PLEASE NOTE

1. The North Carolina State Board of Education approved "Return-To- Learn after Concussion" policy to address learning and educational needs for students following a concussion.
2. A sample of accommodations is found on the **LHCP Concussion Return to Learn Recommendations form**.

LHCP identified below should check all recommendations that apply.

□ Out of school until _____/_____/20___ (date).
□ Return for further evaluation on _____/_____/20___ (date).
□ May return to school on _____/_____/20___ (date) with accommodations selected on the **LHCP Concussion Return to Learn Recommendations form**.
□ May return to school now with no accommodations needed.

RETURN TO SPORTS & PHYSICAL EDUCATION:

PLEASE NOTE

A step-by-step progression of physical and cognitive exertion is widely accepted as the appropriate approach to ensure a concussion has resolved, and that a student-athlete can return to athletics safely. The **NCHSAA Concussion Return to Play (RTP) Protocol** has been designed using a step-by-step progression and is REQUIRED to be completed in its entirety by any concussed student-athlete before they are released to full participation in athletics.

LHCP identified below should check all recommendations that apply.

□ Not cleared for sports at this time.
□ Not cleared for physical education at this time.
□ May do light physical activity that poses no risk of head trauma such (i.e. walking laps).
□ Must return to the examining LHCP for clearance before returning to sports / physical education.
□ May start RTP Protocol under appropriate monitoring and may return to PE activities after completion.
□ May start the RTP Protocol under monitoring of First Responder. The supervising LHCP must review progress of student-athlete through stage 3 BEFORE beginning stage 4, AND after Stage 5 is complete either electronically, by phone, or in person. An additional office visit is not required unless otherwise indicated by the LHCP.
□ May start the RTP Protocol under monitoring of a LHCP and progress through all 5 stages with no office contact necessary unless required by examining LHCP. REMINDER: Athlete ***must*** be asymptomatic with physical and cognitive activity before Stage 4 can begin.

Comment: _____

_____ _____
Signature of MD, DO, LAT, PA, NP, Neuropsychologist (please circle) Date

_____ _____
Please Print Name Phone Number

**** The LHCP above has delegated aspects of the student-athlete's care to the individual designated below: ****

_____ _____
Signature of LAT, NP, PA-C, Neuropsychologist, First Responder (please circle) Date

_____ _____
Please Print Name Phone Number

Licensed Health Care Provider Concussion Return-To-Learn Recommendations

Licensed Health Care Providers (LHCP) are **STRONGLY ENCOURAGED** by the NCHSAA to have expertise and training in concussion management. LHCPs include the following individuals: Licensed Physician (MD/DO), Licensed Athletic Trainer (LAT), Licensed Physician Assistant (PA), Licensed Nurse Practitioner (NP), or Licensed Neuropsychologist.

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. Licensed Health Care 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:

_____

_____

_____

NCHSAA Concussion Return to Play (RTP) Protocol Form

Name of Athlete: _____ DOB: _____ Sport: _____

*The NCHSAA Concussion Return to Play (RTP) Protocol is REQUIRED to be completed in its entirety for any concussed student-athlete before they are released to resume full participation in athletics. A step-by-step progression of cognitive and physical exertion is widely accepted as the appropriate approach to ensure a concussion has resolved, allowing a student-athlete to return to athletics safely. The NCHSAA Concussion RTP Protocol has been designed using this step-by-step progression.
*The NCHSAA Concussion RTP Protocol can be monitored by any of the following Licensed Health Care Providers (LHCP): Licensed Physician (MD/DO), Licensed Athletic Trainer, Licensed Physician Assistant, Licensed Nurse Practitioner, or a Licensed Neuropsychologist. A First Responder may monitor the RTP Protocol under the direction of a LHCP if a LHCP is unavailable directly.

*Current evidence shows that exercise can be safely started quickly (typically within 24-48 hours following concussion) with careful monitoring. The Return to Play Protocol outlined below demonstrates the program approved by the NCHSAA which will allow student-athletes to return to activity safely. This early physical activity ("prescribed exercise") is to be clinically directed and can include prescribed aerobic and light resistance exercise (all without any risk of head trauma).
*Student-athletes should be evaluated daily as they proceed through the protocol and MUST BE SYMPTOM FREE DURING AND AFTER ACADEMIC AND PHYSICAL EXERTION BEFORE BEING ALLOWED TO PROCEED TO STAGE 4.

PRESCRIBED EXERCISE FOR CONCUSSION TREATMENT

STAGE	EXERCISE STRATEGY	GOAL	DATE(S) COMPLETED	COMMENTS	MONITORED BY
This section indicates an appropriate example of a prescribed exercise program as part of an athlete's treatment plan. It is expected that it may take greater than 24 hours to complete each of stages 1-3. *Stages 1-3 may be completed while an athlete is experiencing symptoms, however, symptoms should not increase more than 2 points on a scale of 1-10 during or after activity and should not last more than one hour.*					
1	Symptom-limited activity (such as walking or stationary bike) as prescribed by LHCP. Daily activities that do not exacerbate symptoms.	Perceived intensity/exertion: daily activity			
2A	Light aerobic exercise (Up to approx. 55% of max HR). May include light resistance training that does not result in more than mild and brief exacerbation of concussion symtoms.*	Perceived intensity/exertion: easy / light; increase HR			
2B	Moderate aerobic exercise. (Up to approx. 70% of max HR) May include light resistance training that does not result in more than mild and brief exacerbation of concussion symtoms.*	Perceived intensity/exertion: moderate / medium; increase HR			
3	Sport-specific agility drills in three planes of movement. These activities should pose no risk of head trauma (SUCH AS ballhandling, dribbling a soccer ball, etc).	Perceived intensity/exertion: moderate; change of direction and multiplane movement; increase head and eye movement			

Before advancing to STAGE 4, is the athlete now symptom-free at rest and with prescribed exercise? With cognitive exertion?
ATTN FIRST RESPONDERS: If the RTP has been monitored by a First Responder (FR) then the FR must sign below attesting that they have reviewed the progress of the SA through stage 3 electronically, by phone, or in person with the LHCP and that the SA was cleared to progress to stage 4. The supervising LHCP should then be contacted electronically, by phone, or in person when SA completes Stage 5.

FR Signature: _____ Date: _____

Revised July 2024

NCHSAA Concussion Return to Play (RTP) Protocol Form

STAGE	EXERCISE STRATEGY	GOAL	DATE COMPLETED	COMMENTS	MONITORED BY
4	Participate in non-contact training drills. Warm-up and stretch x 10 minutes. Intense sport-specific activity/non-contact practice and agility drills x 30-60 minutes.	Perceived intensity/exertion: high/game speed; multiplane movement with coordination of multitasking and cognitive strain			
5	Participate in full practice. If in a contact sport, controlled contact practice allowed.				
6	Resume full, unrestricted participation in competition.				

RETURN TO PLAY (RTP) PROTOCOL MONITORING

The individual who monitored the student-athlete's Return to Play Protocol must 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 through Stage 5.

_____ _____

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

_____

Please Print Name

RETURN TO PLAY

As the examining LHCP, 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 and that the above-named student-athlete has successfully completed the required NCHSAA Concussion Return to Play Protocol through stage 5. By signing below, I give the above-named student-athlete consent to resume full participation in athletics without restriction.

_____ _____

Signature of Licensed Physician, Licensed Athletic Trainer, Licensed Physician-Assistant, Licensed Nurse Practitioner, or Licensed Neuropsychologist (Please Circle) — Date

_____

Please Print Name

Parent / Legal Guardian Consent for Their Child to Resume Full Participation in Athletics

I am aware that the NCHSAA REQUIRES the consent of a child's parent or legal guardian prior to them resuming full participation in athletics after having been evaluated and treated for a concussion. I acknowledge that the licensed Health Care Provider above has overseen the treatment of my child's concussion and has given their consent for my child to resume full participation in athletics. By signing below, I hereby give my consent for my child to resume full participation in athletics.

_____ _____

Signature of Parent/Legal Guardian — Date

_____

Please print name and relationship to student-athlete