

Name of Policy	Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions
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Responsible for Review	Director of Sports Medicine

I. Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions

A. Introduction and Overview

1. UNC has been recognized as a leading institution for the evaluation and treatment of Concussions. This is due in part to the long-standing collaborations between UNC Campus Health Services' Team Physicians, Certified Athletic Trainers, and Clinical Researchers at the Gfeller Center. This Policy and institutional Concussion Management Protocols have been developed over time by the Gfeller Center and the Department of Sports Medicine and are derived from the most recent literature on Concussions.
2. A Concussion occurs when there is a direct or indirect insult to the brain. As a result, transient impairment of mental functions such as memory, cognition, equilibrium, and vision may occur. It is important to recognize that many Concussions do not result in loss of consciousness and, therefore, all suspected head injuries should be taken seriously. Coaches and fellow teammates can be helpful in identifying student-athletes who may potentially have Concussions because concussed student-athletes may not be aware of their condition. Some student-athletes even try to hide such injuries.

Clinical research conducted at the Gfeller Center, which has been corroborated by others, has shown that a student-athlete's balance and/or cognitive functioning are often depressed following a Concussion, even in the absence of self-reported symptoms. It has been demonstrated that it typically takes anywhere from three to ten days for a student-athlete to return to their normal state following a Concussion. However, in some cases, student-athletes can experience Post-Concussion Syndrome, which results in the symptoms lasting longer than three weeks.

3. The Department of Sports Medicine utilizes a three-fold approach when assessing a student-athlete's condition and determining his or her readiness to return to sport-related activities following a Concussion. In the event of a suspected Concussion, the Concussion Management Protocol first requires the evaluation of the applicable student-athlete's symptoms, neurocognitive function, and balance, which provides the Sports Medicine staff with objective information necessary to determine when it is safe for the student-athlete to return to certain sport-related activities. Second, the findings of these post-injury assessments are compared to the preseason baseline assessments, which are conducted on all student-athletes participating in UNC varsity sports during their first year at the University and at appropriate times thereafter. Third, any student-athlete sustaining a Concussion while involved with a UNC varsity sport program will also be administered a subsequent baseline test prior to the start of the following competitive season of their respective sport at UNC (should such student-athlete continue to remain a varsity student-athlete at UNC). Additional measures may be taken as appropriate by the Department of Sports Medicine. The Team Physician for the applicable student-athlete's varsity program must provide appropriate clearance prior to such student-athlete's return to participation in sport-related activities after a Concussion.
4. This Policy has been adopted by the Department of Sports Medicine and Department of Athletics and is to be followed by all individuals affiliated with UNC who are involved with managing any student-athlete suspected of sustaining a Concussion. The clinical research team in the Gfeller Center will only evaluate student-athletes under the direct medical care of UNC Team Physicians.

B. Definitions

For purposes of this Policy, the definitions below shall apply.

1. “6 Stage Graduated RTS Strategy” shall mean a 6 Stage Graduated Return-to-Sport Strategy.
2. “ASPSA” shall mean the Academic Support Program for Student-Athletes.
3. “BESS” shall mean the Balance Error Scoring System.
4. “CNS Vital Signs Test” shall mean a computerized neuropsychological test.
5. “Concussion” shall mean a traumatic brain injury occurring directly or indirectly and resulting in transient impairment of neurologic function (memory, equilibrium, cognition, and/or vision, for example).
6. “Concussion Management Protocol” shall mean established measures taken to examine, diagnose, and treat an individual suspected of having a Concussion.
7. “Department of Athletics” shall mean the Department of Athletics of UNC.
8. “Department of Sports Medicine” or “Sports Medicine” shall mean the Department of Sports Medicine of UNC.
9. “Executive Team” shall mean the executive leadership of the Department of Athletics, as determined by the Director of Athletics.
10. “Gfeller Center” shall mean the Matthew A. Gfeller Sport-Related Traumatic Brain Injury Research Center on the campus of UNC.
11. “GSC” shall mean a Graded Symptom Checklist.
12. “NATA” shall mean the National Athletic Trainer’s Association.
13. “NeuroCom SOT” shall mean a computerized posturography and balance test of vestibular function.
14. “Policy” shall mean these Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions.
15. “SAC” shall mean a Standard Assessment of Concussion.
16. “UNC” or “University” shall mean the University of North Carolina at Chapel Hill.

C. Completion and Retention of Acknowledgement Forms

1. Completion of Acknowledgement Forms
 - a. Student-Athlete Acknowledgement

Each UNC student-athlete shall read the NCAA Concussion Fact Sheet (attached to this Policy as Appendix A) and sign a copy of the Student-Athlete Concussion Statement (attached to this Policy as Appendix B) every academic year. A signed copy of the Student-Athlete Concussion Statement should be submitted by each student-athlete to the

Department of Sports Medicine. This form acknowledges that the signing student-athlete:

- i. Has read and understands the NCAA Concussion Fact Sheet; and
- ii. Accepts responsibility for reporting to Department of Sports Medicine staff all of their injuries and illnesses, including signs and symptoms of Concussions.

At the beginning of each year and as appropriate thereafter, the Head Athletic Trainer for each team will facilitate the provision of education about Concussions, distribute the NCAA Concussion Fact Sheet, and coordinate the signing and collection of the Student-Athlete Concussion Statement. The requirements of this Section may be fulfilled at the same time as each team's annual meeting with the Department of Athletics Compliance Office.

b. Acknowledgement by Head Coaches and Assistant Coaches

Each UNC Head Coach and Assistant Coach must read and sign the Coach's Concussion Statement (attached to this Policy as Appendix C) every academic year. A signed copy of the Coach's Concussion Statement should be submitted by each such individual to the Department of Sports Medicine. The Director of Sports Medicine shall be responsible for ensuring that each necessary Coach's Concussion Statement is completed and submitted on an annual basis. This form acknowledges that the signing individual:

- i. Has read and understands the NCAA Concussion Fact Sheet;
- ii. Will encourage student-athletes to report to Department of Sports Medicine staff any suspected injury or illness, including signs and symptoms of Concussions;
- iii. Accepts responsibility for referring to Department of Sports Medicine staff any student-athlete suspected of sustaining a Concussion; and
- iv. Has read and understands this Policy.

c. Primary and Secondary Sport Administrator Acknowledgement

Each Primary and Secondary Sport Administrator must read and sign the Administrator's Concussion Statement (attached to this Policy as Appendix D) every academic year. A signed copy of the Administrator's Concussion Statement should be submitted by each such individual to the Department of Sports Medicine. The Director of Sports Medicine shall be responsible for ensuring that each necessary Administrator's Concussion Statement is completed and submitted on an annual basis. This form acknowledges that the signing individual:

- i. Has read and understands the NCAA Concussion Fact Sheet;
- ii. Will encourage Head Coaches, Assistant Coaches, and student-athletes to report to Department of Sports Medicine staff any suspected injury or illness, including signs and symptoms of Concussions;
- iii. Accepts responsibility for referring to Department of Sports Medicine staff any student-athlete suspected of sustaining a Concussion; and
- iv. Has read and understands this Policy.

d. Department of Sports Medicine Staff Acknowledgement

Each UNC Primary Care Team Physician, Athletic Trainer, Graduate Assistant Athletic Trainer, and undergraduate Athletic Training student must read and sign the Medical Provider's Concussion Statement (attached to this Policy as Appendix E) every academic year. A signed copy of the Medical Provider's Concussion Statement should be submitted by each such individual to the Department of Sports Medicine. The Director of Sports Medicine shall be responsible for ensuring that each necessary Medical Provider's Concussion Statement is completed and submitted on an annual basis. This form acknowledges that the signing individual:

- i. Will encourage student-athletes to report to Department of Sports Medicine Staff any suspected injury or illness, including signs and symptoms of Concussions; and
- ii. Has read and understands this Policy.

2. Retention of Acknowledgement Forms

- a. Each Head Athletic Trainer shall submit to the appropriate staff member(s) of the Department of Sports Medicine the completed Student-Athlete Concussion Statement forms signed by the student-athletes on the team(s) with which they work. Each of these signed documents shall then be maintained in the appropriate student-athlete's Campus Health Services medical file.
- b. The Department of Sports Medicine shall retain all signed Coach's Concussion Statement forms, Administrator's Concussion Statement forms, and Medical Provider's Concussion Statement forms.

D. Incorporation of Best Practices to Promote Student-Athlete Safety and Well-Being

While exposure to head trauma is an inherent risk in many sports, the Department of Athletics is committed to mitigating unnecessary risks when feasible. In conjunction with the Department of Sports Medicine, each Head Coach should evaluate current best practices and recommendations for mitigating risks of head trauma in their respective sport. Among other things, this may include implementation of:

1. Inter-Association Consensus: Year-Round Football Practice Contact Guidelines;
2. Inter-Association Consensus: Independent Medical Care Guidelines;
3. Measures which demonstrate a "safety first" approach to the sport;
4. A reduction of the number of full contact practices and gratuitous contact sessions;
5. Other measures to reduce contact to the head (when possible);
6. Analysis of injury data (collected by Sports Medicine staff) associated with different activities and types of equipment so that appropriate changes may be made to reduce the risk of injury when possible;
7. Proper coaching techniques to reduce the risk of head trauma; and
8. Other means of education regarding safe play and reduction of the risk of head trauma. Such means of education may include, but are not limited to:
 - a. Educational sessions held at the beginning of certain seasons;

- b. Periodic reminders at Head Coaches' meetings about the importance of safety measures;
- c. Messages delivered by means of videos and posters which reinforce the importance of safety measures; and
- d. Review of film, then subsequent discussions with student-athletes about means of reducing the risk of head trauma through improved technique.

E. Concussion Management Protocol

Concussions and other brain injuries can be serious and potentially life-threatening. Research indicates that these injuries can also have significant consequences later in life if not managed properly. In an effort to combat the risk of harm resulting from Concussions, the following measures will be taken.

1. Preseason Baseline Testing

- a. Concussion management for student-athletes shall begin with mandatory preseason baseline testing. This preseason baseline assessment shall include a pre-participation examination by the Team Physician for the student-athlete's varsity program and the student-athlete's disclosure of previous brain injuries and Concussions. This preseason baseline assessment may also include a GSC, SAC, BESS, CNS Vital Signs Test, NeuroCom SOT, and other tests. Collected data shall be kept on file at the Gfeller Center unless otherwise specified below in this Policy.

Baseline testing shall be conducted on each varsity student-athlete upon entering UNC as a first year student-athlete or transfer student-athlete. Any student-athlete who sustained a Concussion the previous year shall also undergo such baseline testing, as will any student-athlete for whom such testing is deemed appropriate by Department of Sports Medicine staff.

- i. The respective team's Athletic Trainers shall conduct GSC, SAC, and BESS assessments for all student-athletes who are new to the University.
- ii. The Gfeller Center staff shall conduct an additional GSC, CNS Vital Signs Test, and NeuroCom SOT assessment on each first year and transfer student-athlete, as well as other appropriate student-athletes.
- iii. In the event of a suspected Concussion, the applicable student-athlete shall be reassessed. The results shall then be compared to the student-athlete's preseason baseline measures.
- b. Each respective varsity program's Athletic Trainer shall maintain a copy of the baseline GSC, SAC, and BESS scores of the student-athletes on such team so they may have easy access to such information at away competitions and sport-related team activities away from UNC's campus. The Gfeller Center staff shall also retain all GSC, CNS Vital Signs Test, and NeuroCom SOT data of student-athletes within their facility.

2. On-Site Evaluation

A Team Physician and/or Athletic Trainer who is trained in the diagnosis, treatment, and initial management of acute concussions is present at all NCAA varsity competitions and practices for collision/contact sports including basketball, field hockey, football, lacrosse, pole vault, soccer and wrestling. A student-athlete suspected of having a Concussion shall be evaluated by the

Team Physician or Athletic Trainer for such student-athlete's varsity program on the site of the occurrence so that such individual(s) can assess whether the student-athlete may have suffered more serious injuries(including, but not limited to: a cervical spine injury, a skull fracture, and/or intracranial bleeding). This initial evaluation will typically include an assessment of symptoms and a physical examination, with an emphasis placed on the neurological portion of such examination.

- a. During the initial on-site assessment, the presence of any of the following, alone or in combination, shall require the initiation of the spine injury management protocol: unconsciousness or an altered level of consciousness, bilateral neurologic findings or complaints, significant midline spine pain with or without palpation, and obvious spinal column deformity.
- b. The proper preparedness for on-site medical management of a serious head injury or cervical spine injury is of paramount importance when dealing with a quickly deteriorating condition. When a student-athlete presents with a Glasgow Coma Score less than 13, prolonged unconsciousness, focal neurologic deficit, repetitive emesis, a persistently diminishing mental status, a spine injury, or other indication(s) of more involved brain or brain stem impairment developing (including, but not limited to, posturing or altered breathing patterns), the Team Physician or Athletic Trainer for such student-athlete's varsity program should immediately activate the Emergency Action Plan for transportation of the student-athlete to a trauma center or emergency department.
 - i. Unless emergency circumstances require deviation therefrom, actions taken during activation of an Emergency Action Plan should follow the Emergency Action Plan for the applicable sport and/or facility on file as part of the policies and procedures of the Department of Sports Medicine.
 - ii. During activation of the Emergency Action Plan, involved individuals should continue monitoring the student-athlete's condition and prepare to perform manual ventilations through "bag-valve-mouth" resuscitation as needed. In accordance with the NATA's Position Statement: Preventing Sudden Death in Sport and Physical Activity, these procedures will be initiated if the student-athlete is not oxygenating well (which is evidenced by the student-athlete becoming dusky or blue in color, ventilations which are not full, or ventilation rates slower than the typical rate of 12 to 15 ventilations per minute).

3. Evaluation and Treatment Plan

- a. In the event of a suspected Concussion, the Team Physician or Athletic Trainer for the applicable student-athlete's varsity program will evaluate cognition and balance using the SAC, BESS, and GSC. In addition, the medical history of the applicable student-athlete shall be reviewed and a physical examination will be conducted.
- b. Should the Team Physician for the applicable student-athlete's varsity program not be present, the Athletic Trainer for the student-athlete's varsity program shall notify such Team Physician as soon as possible so that an Evaluation and Treatment Plan may be developed.
- c. Ideally, an assessment of symptoms will be performed at the time of the injury and then routinely at appropriate intervals for an appropriate period of time thereafter (several hours after the injury, 24 hours after the injury, and 48 hours

after the injury, for example). As a general rule, a student-athlete who demonstrates symptoms of a Concussion should be reassessed at least once each day until he or she is asymptomatic. A student-athlete may also receive a referral for additional evaluation and treatment.

- d. The presence or absence of certain symptoms will dictate the inclusion of additional neurocognitive and balance testing in the Evaluation and Treatment Plan. This Evaluation and Treatment Plan will then be discussed with the student-athlete and another adult affiliated with the student-athlete. The Evaluation and Treatment Plan, as well as the discussion thereof with the student-athlete and other adult affiliated with the student-athlete, should be well-documented in the applicable medical record.

4. Home Care Plan Form

The Team Physician or Athletic Trainer for the applicable student-athlete's varsity program should give a Home Care Plan form to such student-athlete and other responsible adult(s) who will have direct contact with such student-athlete for the initial 24 hours following the injury. This form, which is attached to this Policy as Appendix F, was derived from the NATA's Position Statement: Proper Management of Concussion in Sport. The form is designed to help individuals understand the signs and symptoms for which they should monitor. It is also intended to provide other useful recommendations regarding follow-up care. When possible, these instructions should be provided directly to the student-athlete, as well as those who will be with them or nearby (for example, roommates, teammates, coaches, or parents, depending on the situation).

5. Notice to and Additional Testing by the Gfeller Center

- a. If a student-athlete is suspected of having a Concussion, the Athletic Trainer for such student-athlete's varsity program shall notify the Gfeller Center and other appropriate individuals within 24 hours of the injury. Such notification is usually provided through the concussion@listserv.unc.edu email account.
- b. Appointments with the Gfeller Center should then be scheduled as appropriate so that additional tests and analyses may be performed.
 - i. The applicable student-athlete should be tested by the Gfeller Center once he or she is asymptomatic.
 - (a) Notwithstanding the foregoing, if requested by the applicable Team Physician or Athletic Trainer (typically for the purpose of evaluating whether a student-athlete should return to class, reschedule an exam, or otherwise change or resume certain educational activities), testing may be conducted while a student-athlete is still symptomatic. All involved individuals should understand, however, that performing such testing while a student-athlete is symptomatic may worsen and/or prolong such student-athlete's symptoms.
 - (b) If a student-athlete has not returned to his or her normal level of functioning (as determined by his or her baseline scores) at the time of testing by the Gfeller Center, another appointment will be scheduled at a time deemed appropriate by the Gfeller Center staff and the Team Physician and Athletic Trainer for the applicable student-athlete's varsity program.
 - ii. In the rare event that a student-athlete does not have baseline scores, normative percentile scores based on such student-athlete's age and

sport shall be used for comparison to the student-athlete's post-injury scores.

iii. Testing by the Gfeller Center usually lasts approximately one hour. Student-athletes undergoing testing should expect to be present for the duration of such time.

c. The Team Physician and Athletic Trainer of the applicable student-athlete's varsity program shall be notified verbally by the Gfeller Center staff as soon as possible regarding test results. A written report of the evaluation shall typically be provided within 48 hours and shall also be retained in the applicable patient's files.

6. Further Evaluation by the Team Physician

If a student-athlete is not recovering from a Concussion after the procedures set forth above are followed, the Team Physician for such student-athlete's varsity program shall further evaluate the student-athlete. Such Team Physician shall also evaluate possible ways to help manage various conditions which may be present including, but not limited to: ocular dysfunction, vestibular dysfunction, depression, anxiety, and sleep dysfunction.

7. Return to Participation in Educational Activities

The management of all Concussions will typically include a plan to return to both educational and sport-related activities.

- a. When a student-athlete is diagnosed with a Concussion, the Team Physician or Athletic Trainer for such student-athlete's varsity program shall notify the student-athlete's ASPSA Academic Counselor so appropriate accommodations may be discussed by proper academic staff of the University.
- b. If appropriate after a student-athlete sustains a Concussion, the Team Physician for such student-athlete's varsity program shall also contact the Dean of Students Office to inform their staff that such student-athlete should be excused from participation in educational activities until the student-athlete's symptoms have improved and he or she has been reevaluated by the Team Physician for his or her varsity program.
- c. After sustaining a Concussion, a student-athlete's return to participation in educational activities should be managed with caution.
 - i. The first step in a student-athlete's return to participation in educational activities following a Concussion is a period of cognitive rest. Among other things, cognitive rest includes avoiding mental stressors such as attending class, reading, studying, looking at a computer, playing video games, and sending text messages. After a brief period of rest during the acute phase (24-48 hours) after injury, student-athletes can be encouraged to reintegrate into academic activities while staying below their cognitive symptom-exacerbation thresholds (i.e., cognitive activity level should not bring on or worsen their symptoms). The exact amount and duration of rest is not yet well defined in the literature and requires further study.
 - ii. After an appropriate period of cognitive rest, a student-athlete should then begin his or her return to participation in educational activities at a proper pace based on his or her individual symptoms. Among other things, a student-athlete returning to participation in educational

activities after a Concussion should ensure:

- (a) Appropriate accommodations are discussed with the University's Office of Accessibility Resources & Service;
 - (b) He or she does not participate in classroom activities on the same day a Concussion was sustained;
 - (c) He or she remains in a safe place for an appropriate period of time in case light and/or cognitive activity cannot be tolerated;
 - (d) His or her return to a classroom setting and participation in normal educational activities occurs at a gradual pace; and
 - (e) He or she takes other appropriate precautions based on his or her individual symptoms.
- iii. A student-athlete's process of returning to participation in educational activities may require specific adjustments to be made within such student-athlete's academic schedule. Notwithstanding the aforementioned information, a graduated return-to-school strategy should consider the following 4-stage process:
 - (a) Stage 1 should include daily activities at home that do not give the student-athlete symptoms. The goal should be a gradual return to typical academic activities.
 - (b) Stage 2 should include school activities. The goal of this stage is to increase tolerance to cognitive work.
 - (c) Stage 3 is return to school part-time. The goal of this stage is to increase academic activities.
 - (d) Stage 4 is return to school full time. The goal of this stage is a full return to academic activities and catch up on missed work.
- d. Reevaluation by the Team Physician for the applicable student-athlete's varsity team shall occur if Concussion symptoms worsen after the student-athlete resumes participation in educational activities. If the student-athlete remains symptomatic, a multi-disciplinary team will typically meet to assess the student-athlete's conditions and options for prolonged care. This team may include, but may not be limited to, some or more of the following individuals:
 - i. The Team Physician for the applicable student-athlete's varsity team;
 - ii. The Athletic Trainer for the applicable student-athlete's varsity team;
 - iii. A Psychologist or Counselor;
 - iv. A Neuropsychologist;
 - v. UNC's Faculty Athletics Representative;
 - vi. The ASPSA Academic Counselor for the applicable student-athlete's varsity team;
 - vii. Course instructor(s);
 - viii. At least one member of the student-athlete's coaching staff;
 - ix. Other Department of Athletics staff members;
 - x. Representatives from UNC's Office of Accessibility Resources and Service; and/or
 - xi. Other appropriate University administrators outside of the Department

of Athletics.

- e. If a student-athlete's symptoms are prolonged and last over two weeks, academic modifications may be continued to help accommodate the student-athlete's management of his or her coursework. In such situations, it may also be necessary to contact appropriate campus resources available for students who require more specialized services. Such campus resources can provide accommodations consistent with applicable legislation. Appropriate resources often include Learning Specialists and members of the Office of Accessibility Resources and Service, among others.

8. Return to Participation in Sport-Related Activities

- a. The Team Physician for the applicable student-athlete's varsity program shall have the authority to provide medical clearance for such student-athlete's return to participation in sport-related activities.
 - i. No student-athlete who is suspected of having a Concussion or who is symptomatic following a Concussion shall be permitted to return to participation in sport-related activities on the same day as such suspected Concussion or symptoms occur.
 - ii. Notwithstanding the foregoing, a student-athlete may return to participation in sport-related activities on the same day such student-athlete was originally suspected of sustaining a Concussion if an appropriate Department of Sports Medicine staff member determines that such student-athlete did not, in fact, sustain a Concussion.
- b. Once a student-athlete has been asymptomatic for at least 24 hours after sustaining a Concussion, the Team Physician or Athletic Trainer for such student-athlete's varsity program shall determine such student-athlete's condition relative to his or her baseline testing of various measures. Such measures may include, but may not be limited to a: GSC, SAC, CNS Vital Signs Test, BESS, and NeuroCOM SOT.
- c. If the student-athlete's score demonstrate an acceptable approximation of such student-athlete's corresponding baseline test score and the student-athlete has been asymptomatic for one day following such tests, the Team Physician for the student-athlete's varsity program may instruct the Athletic Trainer for such varsity program to begin a 6 Stage Graduated Return-to-Sport (RTS) Strategy.
 - i. In some situations, adjustments to this timeline may be warranted. For example, if a student-athlete has already been asymptomatic for 24 hours following a Concussion and remains asymptomatic even after a full return to participation in educational activities, the Team Physician for such student-athlete's varsity program may begin the 6 Stage Graduated RTS Strategy on the same day the student-athlete demonstrates acceptable clinical recovery relative to his or her respective baseline test scores.
- d. The 6 Stage Graduated RTS Strategy facilitates a gradual increase in volume and intensity during the process of returning to participation in sport-related activities. This process shall also incorporate monitoring for increases in Concussion-related signs and symptoms. Specifically, a student-athlete recovering from a Concussion shall be monitored for any Concussion-related signs and symptoms during and after each exertional activity. If a student-

athlete demonstrates symptoms of a Concussion at any time, such student-athlete will be reassessed each day until he or she is asymptomatic. Once such student-athlete is asymptomatic, he or she may resume participation in the 6 Stage Graduated RTS Strategy.

- i. All six stages of the 6 Stage Graduated RTS Strategy should typically not be performed on the same day. In some cases, multiple stages may be completed on the same day, but such stages will usually occur over multiple days. If the applicable student-athlete remains asymptomatic on the day(s) following the first stage(s) of the 6 Stage Graduated RTS Strategy, such student-athlete will be reassessed and continue with the next stage(s) of the 6 Stage Graduated RTS Strategy.
- ii. The fifth and sixth steps of the 6 Stage Graduated RTS Strategy should be performed on separate and subsequent days. The stages of the 6 Stage Graduated RTS Strategy and their respective goals are provided below:
 - (a) Stage 1 of the 6 Stage Graduated RTS Strategy should include symptom-limited activity. The goal of this stage is to gradually reintroduce the student-athlete to sport/school activities. Note there is currently insufficient evidence supporting the prescription of complete rest. After a brief period of rest during the acute phase (24-48 hours) after injury, student-athletes can be encouraged to become gradually and progressively more active while staying below their cognitive and physical symptom-exacerbation thresholds (i.e., activity level should not bring on or worsen their symptoms). It is reasonable for athletes to avoid vigorous exertion while they are recovering. The exact amount and duration of rest is not yet well defined in the literature and requires further study.
 - (b) Stage 2 of the 6 Stage Graduated RTS Strategy should include light aerobic exercise with the goal of increasing the student-athlete's heart rate. This can be accomplished by walking or stationary cycling at a slow to medium pace. Resistance training should be avoided at this stage.
 - (c) Stage 3 of the 6 Stage Graduated RTS Strategy should include sport-specific exercise with the goal of adding movement. This can be accomplished by incorporating movement drills (e.g., running or skating). No head impact activities should be included at this stage.
 - (d) Stage 4 of the 6 Stage Graduated RTS Strategy should include non-contact training drills. The goal of this stage is to foster exercise, improve coordination, and increase thinking. This can be accomplished by harder training drills (e.g., passing drills), and may start progressive resistance training.
 - (e) Stage 5 of the 6 Stage Graduated RTS Strategy should include full contact practice with the goal of restoring confidence and assessing functional skills by the coaching and medical staff. This can be accomplished by

participating in normal training activities *following medical clearance*.

- (f) Stage 6 of the 6 Stage Graduated RTS Strategy involves full participation (i.e., normal game play) of the applicable student-athlete's varsity program.

- e. No student-athlete who has sustained a Concussion may return to full participation in sport-related activities or competition until he or she has been asymptomatic in limited, controlled, full-contact sport-related activities. Any such student-athlete must also be cleared by the Team Physician for their respective varsity program before returning to full participation in sport-related activities or competition following a Concussion.

9. Records

All scores on the assessments described herein and material observations related to a student-athlete's exertional activities following a Concussion shall be recorded in the applicable student-athlete's medical record by the Team Physician or Athletic Trainer for the student-athlete's varsity program.

F. Review of this Policy

The Director of Sports Medicine shall coordinate an annual meeting to review and, as necessary, update this Policy. Such meeting shall include, at a minimum:

1. The Director of Sports Medicine;
2. A representative of the Athletic Training clinical staff;
3. A representative of the Matthew Gfeller Center;
4. The Department of Athletics Executive Team member who serves as a liaison to the Department of Sports Medicine;
5. The University's Faculty Athletics Representative; and
6. A representative from the Office of University Counsel.

Appendix A

CONCUSSION

A FACT SHEET FOR STUDENT-ATHLETES

WHAT IS A CONCUSSION?

A concussion is a brain injury that:

- Is caused by a blow to the head or body.
 - From contact with another player, hitting a hard surface such as the ground, ice or floor, or being hit by a piece of equipment such as a bat, lacrosse stick or field hockey ball.
- Can change the way your brain normally works.
- Can range from mild to severe.
- Presents itself differently for each athlete.
- Can occur during practice or competition in ANY sport.
- Can happen even if you do not lose consciousness.

HOW CAN I PREVENT A CONCUSSION?

Basic steps you can take to protect yourself from concussion:

- Do not initiate contact with your head or helmet. You can still get a concussion if you are wearing a helmet.
- Avoid striking an opponent in the head. Undercutting, flying elbows, stepping on a head, checking an unprotected opponent, and sticks to the head all cause concussions.
- Follow your athletics department's rules for safety and the rules of the sport.
- Practice good sportsmanship at all times.
- Practice and perfect the skills of the sport.

WHAT ARE THE SYMPTOMS OF A CONCUSSION?

You can't see a concussion, but you might notice some of the symptoms right away. Other symptoms can show up hours or days after the injury. Concussion symptoms include:

- Amnesia.
- Confusion.
- Headache.
- Loss of consciousness.
- Balance problems or dizziness.
- Double or fuzzy vision.
- Sensitivity to light or noise.
- Nausea (feeling that you might vomit).
- Feeling sluggish, foggy or groggy.
- Feeling unusually irritable.
- Concentration or memory problems (forgetting game plays, facts, meeting times).
- Slowed reaction time.

Exercise or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games may cause concussion symptoms (such as headache or tiredness) to reappear or get worse.

WHAT SHOULD I DO IF I THINK I HAVE A CONCUSSION?

Don't hide it. Tell your athletic trainer and coach. Never ignore a blow to the head. Also, tell your athletic trainer and coach if one of your teammates might have a concussion. Sports have injury timeouts and player substitutions so that you can get checked out.

Report it. Do not return to participation in a game, practice or other activity with symptoms. The sooner you get checked out, the sooner you may be able to return to play.

Get checked out. Your team physician, athletic trainer, or health care professional can tell you if you have had a concussion and when you are cleared to return to play. A concussion can affect your ability to perform everyday activities, your reaction time, balance, sleep and classroom performance.

Take time to recover. If you have had a concussion, your brain needs time to heal. While your brain is still healing, you are much more likely to have a repeat concussion. In rare cases, repeat concussions can cause permanent brain damage, and even death. Severe brain injury can change your whole life.



IT'S BETTER TO MISS ONE GAME THAN THE WHOLE SEASON. WHEN IN DOUBT, GET CHECKED OUT.

For more information and resources, visit www.NCAA.org/health-safety and www.CDC.gov/Concussion.



Reference to any commercial entity or product or service on this page should not be construed as an endorsement by the Government of the company or its products or services.

Appendix B

Student-Athlete Concussion Statement

Please initial after reading each item below.

- A. ___ I understand that it is my responsibility to report all injuries and illnesses to my Athletic Trainer and/or Team Physician.
- B. ___ I have read and understand the NCAA Concussion Fact Sheet.
- C. ___ After reading the NCAA Concussion Fact Sheet, I am aware of the following information:
1. ___ A Concussion is a brain injury which I must report to my Team Physician or Athletic Trainer.
 2. ___ A Concussion can affect my ability to perform everyday activities. It can also affect my reaction time, balance, sleep, and classroom performance, among other things.
 3. ___ Although I cannot see a Concussion, I might notice some of the symptoms immediately. Other symptoms may occur hours or days after the injury.
- D. ___ If I suspect a teammate has a Concussion, I am responsible for reporting the injury to my Team Physician and/or Athletic Trainer.
- E. ___ I will not return to participation in competition or practice if I have received a blow to the head or body that results in Concussion-related symptoms.
- F. ___ I understand that the brain needs time to heal following a Concussion. Further, I understand that I am more likely to have a repeat Concussion if I return to sport-related activities while still experiencing Concussion-related symptoms.
- G. ___ I understand that, in rare cases, repeat Concussions can cause permanent brain damage and even death.
- H. ___ Although certified helmets of a certain standard may help to prevent catastrophic injuries, I understand such helmets are not guaranteed to prevent cerebral Concussions. Further, I understand that student-athletes should wear helmets at all times during participation in contact activities in appropriate sports.

Signature of Student-Athlete

Date

Printed Name of Student-Athlete

Appendix C

Coach's Concussion Statement

_____ I have read and understand the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions.

_____ I have read and understand the NCAA Concussion Fact Sheet.

After reading the NCAA Concussion Fact Sheet and reviewing the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions, I acknowledge the following (please initial beside each item):

- A. _____ A Concussion is a brain injury which student-athletes should report to Department of Sports Medicine staff.
- B. _____ A Concussion can affect a student-athlete's ability to perform everyday activities. It can also affect reaction time, balance, sleep, and classroom performance, among other things. A Concussion cannot be seen, but some of the symptoms may be noticed immediately. Other symptoms may occur hours or days after the injury.
- C. _____ I will not knowingly allow a student-athlete to return to participation in a competition or practice if he or she has received a blow to the head or body that results in Concussion-related symptoms.
- D. _____ A student-athlete shall not return to participation in a competition or practice on the same day that he or she is suspected of sustaining a Concussion (unless an appropriate Department of Sports Medicine staff member determines that such student-athlete did not, in fact, sustain a Concussion).
- E. _____ If I suspect one of the student-athletes on my team(s) has a Concussion, it is my responsibility to require such student-athlete to consult the Department of Sports Medicine staff.
- F. _____ I will encourage student-athletes on my team(s) to report any suspected injuries and illnesses (including signs and symptoms of Concussions) to the Department of Sports Medicine staff.
- G. _____ Although certified helmets of a certain standard may help to prevent catastrophic injuries, I understand such helmets are not guaranteed to prevent cerebral Concussions. Further, I understand that student-athletes should wear helmets at all times during participation in contact activities in appropriate sports.
- H. _____ I understand that the brain needs time to heal following a Concussion. I also understand that a student-athlete who has sustained a Concussion is much more likely to have a repeat Concussion if he or she returns to participation in sport-related activities while still experiencing Concussion-related symptoms. In rare cases, repeat Concussions can cause permanent brain damage and even death.
- I. _____ I am aware that every first-year or transfer student-athlete on specified UNC teams must receive baseline testing prior to participation in their respective sport. These tests allow for comparisons of symptoms, neurocognition, and balance in the event a student-athlete is injured.
- J. _____ I am aware that a student-athlete diagnosed with a Concussion will be assessed at the Gfeller Center once he or she is asymptomatic. Any such student-athlete may begin a graduated return to participation in sport-related activities after the student-athlete's full recovery of neurocognition and balance and after the student-athlete is cleared to resume participation in such activities by the Team Physician for his or her varsity sport program.

Signature of Coach

Date

Printed Name of Coach

Appendix D

Sport Administrator's Concussion Statement

_____ I have read and understand the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions.

_____ I have read and understand the NCAA Concussion Fact Sheet.

After reading the NCAA Concussion Fact Sheet and reviewing the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions, I acknowledge the following (please initial beside each item):

- A. _____ A Concussion is a brain injury which student-athletes should report to Department of Sports Medicine staff.
- B. _____ A Concussion can affect a student-athlete's ability to perform everyday activities. It can also affect reaction time, balance, sleep, and classroom performance, among other things. A Concussion cannot be seen, but some of the symptoms may be noticed immediately. Other symptoms may occur hours or days after the injury.
- C. _____ In conversations with the coaches under my supervision, I will reinforce that they should not knowingly allow a student-athlete to return to participation in a competition or practice if such student-athlete has sustained a blow to the head or body that results in Concussion-related symptoms.
- D. _____ A student-athlete shall not return to participation in a competition or practice on the same day that he or she is suspected of sustaining a Concussion (unless an appropriate Department of Sports Medicine staff member determines that such student-athlete did not, in fact, sustain a Concussion).
- E. _____ In conversations with the coaches under my supervision, I will reinforce the fact that it is a coach's responsibility to have a student-athlete consult the Department of Sports Medicine staff if such coach suspects such student-athlete may have a Concussion.
- F. _____ Although certified helmets of a certain standard may help to prevent catastrophic injuries, I understand such helmets are not guaranteed to prevent cerebral Concussions. Further, I understand that student-athletes should wear helmets at all times during participation in contact activities in appropriate sports.
- G. _____ I will encourage coaches under my supervision to have student-athletes on their respective team(s) report any suspected injuries and illnesses (including signs and symptoms of Concussions) to the Department of Sports Medicine staff.
- H. _____ I understand that the brain needs time to heal following a Concussion. I also understand that a student-athlete who has sustained a Concussion is much more likely to have a repeat Concussion if he or she returns to participation in sport-related activities while still experiencing Concussion-related symptoms. In rare cases, repeat Concussions can cause permanent brain damage and even death.
- I. _____ I am aware that every first-year or transfer student-athlete on specified UNC teams must receive baseline testing prior to participation in their respective sport. These tests allow for comparisons of symptoms, neurocognition, and balance in the event a student-athlete is injured.
- J. _____ I am aware that a student-athlete diagnosed with a Concussion will be assessed at the Gfeller Center once he or she is asymptomatic. Any such student-athlete may begin a graduated return to participation in sport-related activities after the student-athlete's full recovery of neurocognition and balance and after the student-athlete is cleared to resume participation in such activities by the Team Physician for his or her varsity sport program.

Signature of Administrator

Date

Printed Name of Administrator

Appendix E

Medical Provider Concussion Statement

_____ I have read and understand the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions.

_____ I have read and understand the NCAA Concussion Fact Sheet.

After reading the NCAA Concussion Fact Sheet and reviewing the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions, I acknowledge the following (please initial beside each item):

- A. _____ A Concussion is a brain injury which student-athletes should report to Department of Sports Medicine staff.
- B. _____ A Concussion can affect a student-athlete's ability to perform everyday activities. It can also affect reaction time, balance, sleep, and classroom performance, among other things. A Concussion cannot be seen, but some of the symptoms may be noticed immediately. Other symptoms may occur hours or days after the injury.
- C. _____ I will not knowingly allow a student-athlete to return to participation in a competition or practice if he or she has received a blow to the head or body that results in Concussion-related symptoms.
- D. _____ A student-athlete shall not return to participation in a competition or practice on the same day that he or she is suspected of sustaining a Concussion (unless an appropriate Department of Sports Medicine staff member determines that such student-athlete did not, in fact, sustain a Concussion).
- E. _____ If I suspect a student-athlete has a Concussion, it is my responsibility to facilitate compliance with the provisions of the Department of Athletics and Department of Sports Medicine Policies and Procedures Regarding Sports-Related Concussions and instruct such student-athlete to work with the Department of Sports Medicine staff and other personnel as appropriate.
- F. _____ I will encourage student-athletes to report any suspected injuries and illnesses (including signs and symptoms of Concussions) to Department of Sports Medicine staff.
- G. _____ Although certified helmets of a certain standard may help to prevent catastrophic injuries, I understand such helmets are not guaranteed to prevent cerebral Concussions. Further, I understand that student-athletes should wear helmets at all times during participation in contact activities in appropriate sports.
- H. _____ I understand that the brain needs time to heal following a Concussion. I also understand that a student-athlete who has sustained a Concussion is much more likely to have a repeat Concussion if he or she returns to participation in sport-related activities while still experiencing Concussion-related symptoms. In rare cases, repeat Concussions can cause permanent brain damage and even death.
- I. _____ I am aware that every first-year or transfer student-athlete on specified UNC teams must receive baseline testing prior to participation in their respective sport. These tests allow for comparisons of symptoms, neurocognition, and balance in the event a student-athlete is injured.
- J. _____ I am aware that a student-athlete diagnosed with a Concussion will be assessed at the Gfeller Center once he or she is asymptomatic. Any such student-athlete may begin a graduated return to participation in sport-related activities after the student-athlete's full recovery of neurocognition and balance and after the student-athlete is cleared to resume participation in such activities by the Team Physician for his or her varsity sport program.

Signature of Medical Provider

Date

Printed Name of Medical Provider

Appendix F



Home Care Plan

Adapted from:

Acute Concussion Evaluation Care Plan (Gerard Gioia, PhD and Micky Collins PhD, available at: <http://www.cdc.gov/concussion/headsup/>) and the National Athletic Trainers' Association Position Statement: management of sport-related concussion (Guskiewicz KM, Bruce SL, Cantu RC et al.; *J Athl Train* 2004;39(3):280-297)

Instructions:

Rest is the key. You should not participate in any high risk activities (e.g., sports, physical education (LFIT/PHYA), riding a bike, etc.), if you still have any of the symptoms below. It is important to limit activities that require a lot of thinking or concentration (homework, job-related activities), as this can also make your symptoms worse. If you no longer have any symptoms and believe that your concentration and thinking are back to normal, you can slowly and carefully return to your daily activities. Listen to the instructions of your team physician and athletic trainer about returning to daily activities.

Today the following symptoms are present (circle or check):

Physical		Thinking	Emotional	Sleep
Headaches	Sensitivity to light	Feeling mentally foggy	Irritability	Drowsiness
Nausea	Sensitivity to noise	Problems concentrating	Sadness	Sleeping more than usual
Fatigue	Numbness/Tingling	Problems remembering	Feeling more emotional	Sleeping less than usual
Visual Problems	Vomiting	Feeling more slowed down	Nervousness	Trouble falling asleep
Balance Problems	Dizziness			

RED FLAGS: Call your athletic trainer, or go to the emergency room if you suddenly experience any of the following:

Headaches that worsen	Look very drowsy, can't be awakened	Can't recognize people or places	Unusual behavior change
Seizures	Repeated vomiting	Increasing confusion	Increasing irritability
Neck pain	Slurred speech	Weakness or numbness in arms or legs	Loss of consciousness

Returning to Daily Activities:

1. Sleep
 - a. Get lots of rest. Be sure to get enough sleep at night- no latenights.
 - b. Keep the same bedtime weekdays and weekends.
 - c. Take daytime naps or rest breaks when you feel tired or fatigued.
2. Physical Activity, School and Work
 - a. Limit physical activity, because it can make symptoms worse. Physical activity includes most LFIT/PHYA activities, sports practices, weight-training, running, exercising, heavy lifting, etc.
 - b. Limit activities that require a lot of thinking or concentration, because these can also make symptoms worse. These activities include homework, class-work, job-related activities, using computers or even playing videogames.

- c. As symptoms decrease, you may begin to gradually return to your daily activities. If symptoms worsen or return, lessen your activities, and then try again to increase your activities gradually.
- 3. Nutrition
 - a. Drink lots of fluids and eat carbohydrates or protein to maintain appropriate blood sugar levels.
 - b. Do NOT drink any alcohol or eat spicy foods.
- 4. Medications
 - a. Do not take any pain medication, unless you are instructed to do so, by your team physician or athletic trainer.
 - b. You may use ice on your head/neck for comfort/pain control as needed.
- 5. During recovery, it is normal to feel frustrated and sad when you do not feel right and you can't be as active as usual.
- 6. Repeated evaluation of your symptoms is recommended to help guide recovery. Keep track of how the symptoms circled above change throughout the day and increase/decrease with certain activities.

Specific Recommendations:

Recommendations provided by: _____ Date: _____
Time: _____

Please feel free to contact me, if you have any questions. Please contact me immediately if you notice any of the
“Red Flags” listed above. I can be reached at: _____

Signature: _____ Date: _____