CONCUSSION MANAGEMENT PROTOCOL

CONTENTS

CONCUSSION MANAGEMENT GUIDELINES

I. INTRODUCTION

The NCAA Executive Committee has developed a consistent, association-wide approach to Concussion Management. It is the responsibility of all student-athletes to report injuries and illnesses to their Athletic Trainer. This includes, but is not limited to, signs and symptoms related to concussions.

The Clemson University Sports Medicine Department recognizes and acknowledges that concussions or traumatic brain injuries (TBI) need immediate attention. A concussion is defined as a generally short-lived impairment of neurological function brought on by a direct or indirect traumatic force applied to the head or body. Symptoms are usually rapid in onset, but of short duration and generally resolve spontaneously. It is usually a functional disturbance and not a structural one. Loss of consciousness may or may not be involved. Exact recovery periods from these types of head injuries are uncertain and will often vary.

Clemson University Sports Medicine adheres to the NCAA Legislation 3.2.4.17 *Concussion Management Plan*. In addition, Clemson University Sports Medicine abides by the *Independent Medical Care Guidelines* (***APPENDIX A***) and *Football Practice Guidelines* (***APPENDIX B***) as addressed by the *Safety in College Football Summit*.

All members of the Clemson University Sports Medicine staff will abide by the scope of their established professional practice. The Certified Athletic Trainers and Team Physicians of the Clemson University Sports Medicine staff are trained in the diagnosis, treatment and initial management of acute concussions. During NCAA competition of the following contact/collision Clemson University sports (Football, Men and Women's Basketball, Men and Women's Soccer and Pole-vaulting), there will be a member of the Clemson University Sports Medicine staff on-site at the venue to manage any concussion related problems as it is written in our general protocol. In addition, as it pertains to the above listed sports, a member of the Clemson University Sports Medicine staff, at minimum, will be available during NCAA practices. Availability of staff is defined by being accessible at any time during these practices by means of telephone, messaging, email, beeper or any other immediate communication vehicle. A staff member will attend along with being available for the Clemson University practices of the previously listed sports. All concussion management progression lies exclusively with the Clemson University Sports Medicine Staff, and The Team Physician will make the final determination of return-to-sport once asymptomatic and post-exertion assessments are within normal limits.

The entire concussion management process of the student-athlete from the baseline assessment, initial post-injury evaluation, and eventual return to full athletic and academic participation, including any diagnostic testing, shall be documented within their medical file.

II. BASELINE ASSESSMENT / EDUCATION

Prior to any athletic activity, every student-athlete will be required to sign a *Student-Athlete Concussion Statement Acknowledgement* (***APPENDIX D***) annually stating they receive, have read, and understand the information provided by the NCAA document *Concussion: A Fact Sheet for Student-Athletes* (***APPENDIX C***). This document on concussions includes the definition of a concussion, how to prevent a concussion, the symptoms of a concussion, and how to report any concerns for themselves, or a teammate regarding a concussion.

Before any athletic participation, every student-athlete will undergo preseason baseline testing. The initial baseline assessment for each student-athlete includes a medical history (history of concussion or brain injury, neurologic disorder, mental health symptoms and disorders) a *Baseline Assessment Symptom Scale* with a Balance Error Scoring System (BESS) (***APPENDIX E***), and a computerized neuropsychological test. Subsequent preseason baseline assessments for each student-athlete will include the *Annual Baseline Assessment Symptom Scale* (***APPENDIX F)***.

All Clemson University Coaches, Strength and Conditioning Staff, Athletic Trainers, Team Physicians, Nieri Academic Staff, and the Director of Athletics will be required to sign an *Athletic Staff Concussion Statement Acknowledgment* (***APPENDIX H***) annually stating that they receive, have read, and understand the information provided by the NCAA document *Concussion: A Fact Sheet for Coaches* (***APPENDIX G***). This document includes facts and the definition of a concussion, signs and symptoms to be aware of, how to prevent concussions, and what to do if they suspect a concussion has occurred in a student-athlete.

In an attempt to educate student-athlete's playing football, the Clemson University Football coaches go over drills to teach proper form prior to contact during fall and spring practice. These sessions are videoed and kept on file.

III. LIMITING EXPOSURE TO HEAD TRAUMA

The following are recommendations by the *Interassociation Recommendations: Preventing Catastrophic Injury and Death in Collegiate Athletes* (***APPENDIX M***):

1. All playing and protective equipment will be monitored by the Clemson University Athletics Equipment Staff. This equipment should meet all certified safety standards.
2. The coaching staff(s) shall insure the following:
    a. All practices and competitions adhere to existing ethical standards.
    b. Using equipment (including a helmet) as a weapon is prohibited.
    c. In all practices and competition, deliberately inflicting injury on another player is prohibited

IV. CONCUSSION

The Clemson University Sports Medicine team will determine whether or not a concussion has occurred, realizing that each concussion and each student-athlete are different and individual treatment plans are necessary.

Signs and Symptoms of a Possible Concussion (including but not limited to):

- Headache
- Nausea
- Balance Problems
- Dizziness
- Diplopia - Double Vision
- Confusion
- Photophobia – Light Sensitivity
- Difficulty Sleeping
- Misophonia – Noise Sensitivity
- Blurred Vision
- Feeling Sluggish or Groggy
- Memory Problems
- Difficulty Concentrating

When a student-athlete exhibits signs, symptoms, or behavior consistent with a possible concussion, they shall be removed from practice or competition and evaluated by the Certified Athletic Trainer and/or the Team Physician. The student-athlete will be evaluated and monitored for a minimum of 15 minutes to determine their status as it relates to being concussed. Once a student-athlete has been diagnosed with, or suspected to have, a concussion, they shall be removed from physical activity for the remainder of that calendar day, and not allowed to participate in academic activities. The student-athlete, or their parent, guardian, or roommate, will be provided instructions on further care and the *Concussion Head Injury Information Take-Home Instructions* (***APPENDIX I***) upon discharge.

The student-athlete will be monitored multiple times daily for progression of symptoms from rest, physical exertion, and mental exertion by the Clemson University Sports Medicine staff. ***The student-athlete will see a Team Physician every morning, and at other times throughout the day as deemed necessary, to determine their status as it pertains to their concussion symptoms, their athletic participation status, and their academic participation status*** The student-athlete with atypical presentation or persistent symptoms will be re-evaluated by the Team Physician in order to consider additional diagnosis, best management options, and consideration of referral. The Clemson University Sports Medicine Staff will use a *Concussion Assessment Symptom Scale* (***APPENDIX J***) and a Balance Error Scoring System (BESS) daily, along with other examinations deemed necessary during the evaluation of the concussed student-athlete until the symptoms have subsided and/or have been resolved. A computerized neuropsychological test will also be performed; however, computer neuropsychological tests should not be used as a standalone measure to diagnose the presence or absence of a concussion. All evaluations will be compared to the baseline values of the student-athlete and will aid in the Return-to-Sport and Return-to-Learn progression. The unrestricted Return-to-Sport and Return-to-Learn final determination will come from the Team Physician. The unrestricted Return-to-Sport will ***NOT*** come before the unrestricted Return-to-Learn, In the case of a prolonged recovery, the team physician will determine the need for further diagnostic imaging, testing, or outside consultation on a case-by-case basis.

With permission for release of information from the student-athlete, the Nieri Academic Advisors and their Professors will be notified and updated on the condition of the student-athlete after they suffer from a concussion.

V. EMERGENCY ACTION

Clemson University Sports Medicine personnel will execute the Clemson University Sports Medicine *Emergency Action Plan* (***APPENDIX L***) for further medical care and/or transportation as deemed necessary. This may include injury to the neck and/or spine, head trauma, and/or severe concussion signs and/or symptoms.

The following items will be used to determine the status of the student-athlete as it pertains to transportation to a medical facility and/or initiating the Emergency Action Plan:

1. A Glasgow Coma Scale that diminishes below a 13
2. Prolonged loss of consciousness as it relates to the concussion
3. A neurological exam deficit that may suggest intracranial trauma
4. Repetitive/Uncontrolled vomiting (Emesis)
5. A persistent decline of the student-athlete's mental status and/or neurological signs/symptoms
6. Significant spinal related trauma/injury

VI. RETURN-TO-SPORT

The Athletic Trainer and the Team Physician will monitor the progression of the student-athlete and their return to athletic and academic activities. The Clemson University Sports Medicine Staff will use the *Concussion Assessment Symptom Scale* and a Balance Error Scoring System (BESS) daily, along with other examinations deemed necessary during the evaluation of the concussed student-athlete, to determine how quickly the Return-to-Sport and progression is performed. The following stages are to be followed in the progression of athletic activity:

The athlete must be asymptomatic before progressing to the next stage, as follows:

Stage 1: At rest and daily living activities for ~24 hours.
Stage 2: Weight lifting and conditioning
Stage 3: Non-contact drill work
Stage 4: Contact drill work
Stage 5: Full contact practice and drill work
Stage 6: Full participation with the release of the Team Physician.

VII. RETURN-TO-LEARN

The Clemson University Team Physicians, Sports Medicine Staff Athletic Trainers, and the Athletic Academic Success Center (a.k.a. Nieri staff) will work together to determine the Return-to-Learn status of a post-concussed student-athlete. The Nieri staff will be the point persons when dealing with a student-athletes' professors and any accommodations that may be needed in their return to the classroom and activities that are associated with their full academic return. The Clemson University Team Physicians, Sports Medicine Staff Athletic Trainers, and Nieri staff will work together to determine the daily status of the student-athlete.

When a student-athlete has been diagnosed with a concussion, they will be held from practice, competition, and class activities that same day. The Nieri staff will be notified on the status of the student-athlete.

On subsequent days that follow a concussion, the student-athlete will be seen by the Team Physician each morning before classes begin. At that time, the decision will be made by the Clemson University Team Physician if the student-athletes' symptoms have progressed to allow them to attempt to go to class, study hall, and tutoring sessions that day. The Nieri staff will be alerted of the decision from the Clemson University Team Physician about the student-athlete's progression for that day. The Nieri staff will, in turn, convey the status of the student-athlete to their professors. The Clemson University Team Physician will initiate the *Concussion Awareness Letter* (***APPENDIX K***) so this can be delivered to the Nieri staff, and then to the student-athletes' professors. Regardless of returning to class that day or not, the student-athlete will be seen by the Clemson University Team Physician and Sports Medicine staff at the appointed time that afternoon. If the student-athlete is allowed to return to class, they will be evaluated that afternoon in order to complete an updated symptom checklist. This will aid in determining how their day of learning progressed.

The student-athlete will be required to complete a *Concussion Assessment Symptom Scale* each day post-concussion until they are symptom-free. This process will continue until the student-athlete has returned to full classroom activity.

Nieri staff will play an important role in the day-to-day progression of the student-athlete in return to full classroom, study hall, and tutoring activities. They will also be the point persons in dealing with accommodations that the student-athlete may need while returning to full classroom activities. If there is a need to involve the Clemson University Disability Services Center to aid in compliance with the Americans with Disabilities Act Amendments Act (ADAAA), the Nieri staff will handle this process.

In any concussion case when a student-athlete needs counseling, the Sports Medicine staff will aid in referring him/her to the Athletic Department's Licensed Counselor, located at Redfern Student Health Center on campus.

PROLONGED / MULTIPLE CONCUSSION MANAGEMENT TEAM

In the event of a more complex case of symptomatic Return-to-Learn with a student-athlete, or in the event of multiple concussions, the following Concussion Management Team may need to meet and develop a personalized plan for the student-athlete. The Team Physician will enact and lead this team as he sees fit for prolonged recovery from a concussion. This team may or may not be enacted after 2 weeks. This will be determined by the Team Physician and the Nieri Academic Counselor on an individual basis. This team will be responsible for assisting the student-athlete in engaging campus resources for those cases that cannot be managed through schedule modification. If necessary, the plan may involve having the student-athlete take a medical withdrawal from the University for the semester in which they are enrolled while recovering from their concussion.

TEAM MEMBERS:

- Clemson Team Physicians
- Director of Sports Medicine / Head Athletic Trainer
- Full-time Athletic Trainer with respective sport
- Clemson University Athletic Department Licensed Counselor
- Nieri Staff Member(s) that are directly involved with the student-athlete

INDEPENDENT MEDICAL CARE GUIDELINES

Independent Medical Care for College Student-Athletes Guidelines

Purpose:

The *Safety in College Football Summit* resulted in inter-association consensus guidelines for three paramount safety issues in collegiate athletics:

1. Independent medical care in the collegiate setting;
2. Concussion diagnosis and management; and
3. Football practice contact.

This document addresses independent medical care for college student-athletes in *all* sports.

Background:

Diagnosis, management, and return to play determinations for the college student-athlete are the responsibility of the institution's athletic trainer (working under the supervision of a physician) and the team physician. Even though some have cited a potential tension between health and safety in athletics,[1,2] collegiate athletics endeavor to conduct programs in a manner designed to address the physical well-being of college student-athletes (i.e., to balance health and performance).[3,4] In the interest of the health and welfare of collegiate student-athletes, a student-athlete's health care providers must have clear authority for student-athlete care. The foundational approach for independent medical care is to assume an "athlete-centered care" approach, which is similar to the more general "patient-centered care," which refers to the delivery of health care services that are focused only on the individual patient's needs and concerns.[5] The following 10 guiding principles, listed in the *Inter-Association Consensus Statement on Best Practices for Sports Medicine Management for Secondary Schools and Colleges,*[5] are paraphrased below to provide an example of policies that can be adopted that help to assure independent, objective medical care for college student-athletes:

1. The physical and psychosocial welfare of the individual student-athlete should always be the highest priority of the athletic trainer and the team physician.
2. Any program that delivers athletic training services to student-athletes should always have a designated medical director.
3. Sports medicine physicians and athletic trainers should always practice in a manner that integrates the best current research evidence within the preferences and values of each student-athlete.
4. The clinical responsibilities of an athletic trainer should always be performed in a manner that is consistent with the written or verbal instructions of a physician or standing orders and clinical management protocols that have been approved by a program's designated medical director.
5. Decisions that affect the current or future health status of a student-athlete who has an injury or illness should only be made by a properly credentialed health professional (e.g., a physician or an athletic trainer who has a physician's authorization to make the decision).
6. In every case that a physician has granted an athletic trainer the discretion to make decisions relating to an individual student-athlete's injury management or sports participation status, all aspects of the care process and changes in the student-athlete's disposition should be thoroughly documented.
7. Coaches must not be allowed to impose demands that are inconsistent with guidelines and recommendations established by sports medicine and athletic training professional organizations.
8. An athletic trainer's role delineation and employment status should be determined through a formal administrative role for a physician who provides medical direction.
9. An athletic trainer's professional qualifications and performance evaluations must not be primarily judged by administrative personnel who lack health care expertise, particularly in the context of hiring, promotion, and termination decisions.
10. Member institutions should adopt an administrative structure for delivery of integrated sports medicine and athletic training services to minimize the potential for any conflicts of interest that could adversely affect the health and well-being of student-athletes.

Team physician authority becomes the linchpin for independent medical care of student-athletes. Six preeminent sports physicians associations agree with respect to "… athletic trainers and other members of the athletic care network report to the team physician on medical issues."[6] Consensus aside, a medical-legal authority is a matter of law in 48 states that require athletic trainers to report to a physician in their medical practice. The NCAA Sports Medicine Handbook's Guideline 1B opens with a charge to athletics and institutional leadership to "create an administrative system where athletics health care professionals – team physicians and athletic trainers – are able to make medical decisions with only the best interests of student-athletes at the forefront."[7] Multiple models exist for collegiate sports medicine. Athletic health care professionals commonly work for the athletics department, student health services, private medical practice, or a combination thereof. Irrespective of model, the answer for the college student-athlete is established independence for appointed athletics health care providers.[8]

Guidelines:

Institutional medical line of authority should be established independently of a coach, and in the sole interest of student-athlete health and welfare. Medical line of authority should be transparent and evident in athletics departments, and organizational structure should establish collaborative interactions with the medical director and primary athletics health care providers (defined as all institutional team physicians and athletic trainers) so that the safety, excellence and wellness of student-athletes are evident in all aspects of athletics and are student-athlete centered.

Institutions should, at a minimum, designate a licensed physician (M.D. or D.O.) to serve as medical director, and that medical director should oversee the medical tasks of all primary athletics health care providers. Institutions should consider a board certified physician, if available. The medical director may also serve as team physician. All athletic trainers should be directed and supervised for medical tasks by a team physician and/or the medical director. The medical director and primary athletics health care providers should be empowered with unchallengeable autonomous authority to determine medical management and return-to-play decisions of student-athletes.

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***This Consensus Best Practice, Independent Medical Care for College Student-Athletes, has been endorsed by:**

- American Academy of Neurology
- American College of Sports Medicine
- American Association of Neurological Surgeons
- American Medical Society for Sports Medicine
- American Orthopaedic Society for Sports Medicine
- American Osteopathic Academy for Sports Medicine
- College Athletic Trainers' Society
- Congress of Neurological Surgeons
- National Athletic Trainers' Association
- NCAA Concussion Task Force
- Sports Neuropsychological Society

FOOTBALL PRACTICE GUIDELINES

Year-Round Football Practice Contact Guidelines

Purpose:

The *Safety in College Football Summit* resulted in inter-association consensus guidelines for three paramount safety issues in collegiate athletics:

1. Independent medical care in the collegiate setting;
2. Concussion diagnosis and management; and
3. Football practice contact.

This document addresses year-round football practice contact.

Background:

Enhancing a culture of safety in collegiate sport is foundational. Football is an aggressive, rugged, contact sport,[1] yet the rules clearly state that there is no place for maneuvers deliberately designed to inflict injury on another player.[1] Historically, rules changes and behavior modification have reduced catastrophic injury and death. Enforcement of these rules is critical for improving player safety.[2] Despite sound data on reducing catastrophic football injuries, there are limited data that provide a strong foothold for decreasing injury risk by reducing contact in football practice.[3-8] Regardless of such scientific shortcomings, there is a growing consensus that we must analyze existing data in a consensus-based manner to develop guidelines that promote safety. "Safe" football means "good" football.

NCAA regulations currently do not address in season, full-contact practices. The Ivy League and Pac-12 Conference have limited in season, full-contact practices to two per week and have established policies for full-contact practices in spring and preseason practices through their Football Practice Standards and Football Practice Policy, respectively. Neither address full-pad practice that does not involve live contact practice, as defined below. Both conferences cite safety concerns as the primary rationale for reducing full-contact practices; neither conference has published or announced data analysis based on their new policies. In keeping with the intent of both conferences and other football organizations, the rationale for defining and reducing live contact practice is to improve safety, including possibly decreasing student-athlete exposure for concussion and sub-concussive impacts. Reduced frequency of live contact practice may also allow even more time for teaching of proper tackling technique.

The biomechanical threshold (acceleration/deceleration/rotation) at which sport-related concussion occurs is unknown. Likewise, there are no conclusive data for understanding the short- or long-term clinical impact of sub-concussive impacts. However, there are emerging data that football players are more frequently diagnosed with sport-related concussion on days with increased frequency and higher magnitude of head impact (greater than 100g linear acceleration).[9-11]

Traditionally, the literature addressing differing levels of contact in football practice correlated with the protective equipment (uniform) worn. This means that full-pad practice correlated with full-contact and both half-pad (shell) and helmet-only practice correlated with less contact. However, coaches, administrators and athletics health care providers who helped to shape these guidelines have noted that contact during football practice is not determined primarily by the uniform, but rather by whether the intent of practice is centered on live contact versus teaching and conditioning. There are limited data that address this issue, and such data do not differentiate whether the intent of the practice is live tackling or teaching/conditioning. Within these limitations, non-published data from a single institution reveal the following:[10]

- The total number of non-concussive head impacts sustained in helmets-only and full-pad practices is higher than those sustained in games/scrimmages.
- Mild- and moderate-intensity head impacts occur at an essentially equal rate during full-pad and half-pad practices when the intent of practice is not noted.
- Severe-intensity head impacts are much more likely to occur during a game, followed by full-pad practices and half-pad practices.
- There is a 14-fold increase in concussive impacts in full-pad practices when compared to half-pad or helmets-only practices.
- Offensive linemen and defensive linemen experience more head impacts during both full-pad and half-pad practices relative to all other positions.

The guidelines below are based on: expert consensus from the two day summit referenced above; comments and recommendations from a broad constituency of the organizations listed; and internal NCAA staff members. Importantly, the emphasis is on limiting contact, regardless of whether the student-athlete is in full-pad, half-pad, or is participating in a helmet-only practice. Equally importantly, the principles of sound and safe conditioning are an essential aspect of all practice and competition exposures.

These guidelines must be differentiated from legislation. For each section below that addresses a particular part of the football calendar, any legislation for that calendar period is referenced. As these guidelines are based on consensus and limited science, they are best viewed as a "living, breathing" document that will be updated, as we have with other health and safety guidelines, based on emerging science or sound observations that result from application of these guidelines. The intent is to reduce injury risk, but we must also be attentive to unintended consequences of shifting a practice paradigm based on consensus. For example, football preseason must prepare the student-athlete for the rigors of an aggressive, contact, rugged sport. Without adequate preparation, which includes live tackling, the student-athlete could be at risk of unforeseen injury during the in season because of inadequate preparation. We plan to reanalyze these football practice contact guidelines at least annually. Additionally, we recognize that NCAA input for these guidelines came primarily from Division I Football Bowl Subdivision schools. Although we believe the guidelines can also be utilized for football programs in all NCAA divisions, we will be more inclusive in the development of future football contact practice guidelines.

Definitions:

Live contact practice: Any practice that involves live tackling to the ground and/or full-speed blocking. Live contact practice may occur in full-pad or half-pad (also known as "shell," in which the player wears shoulder pads and shorts, with or without thigh pads). Live contact does not include: (1) "thud" sessions, or (2) drills that involve "wrapping up;" in these scenarios players are not taken to the ground and contact is not aggressive in nature. Live contact practices are to be conducted in a manner consistent with existing rules that prohibit targeting to the head or neck area with the helmet, forearm, elbow, or shoulder, or the initiation of contact with the helmet.

Full-pad practice: Full-pad practice may or may not involve live contact. Full-pad practices that do not involve live contact are intended to provide preparation for a game that is played in a full uniform, with an emphasis on technique and conditioning versus impact.

Legislation versus guidelines:

There exists relevant NCAA legislation for the following:

1. Preseason practice
   a. DI FBS/FCS – NCAA Bylaws 17.9.2.3 and 17.9.2.4
   b. DII – NCAA Bylaws 17.9.2.2 and 17.9.2.3
   c. DIII – NCAA Bylaws 17.9.2.2 and 17.9.2.3

2. In-season practice: No current NCAA legislation addresses contact during in season practices.

3. Postseason practice: No current NCAA legislation addresses contact during postseason practices.

4. Bowl practice: No current NCAA legislation addresses contact during bowl practice.

5. Spring practice:
   a. DI FBS/FCS – NCAA Bylaw 17.9.6.4
   b. DII – NCAA Bylaw 17.9.8
   c. DIII – NCAA Bylaw 17.9.6 – not referenced to as spring practice, but allows five (5) week period outside playing season.

The guidelines that follow do not represent legislation or rules. As noted in the appendix, the intent of providing consensus guidelines in year one of the inaugural *Safety in College Football Summit* is to provide consensus-based guidance that will be evaluated "real-time" as a "living and breathing" document that will become solidified over time through evidence-based observations and experience.

Preseason practice guidelines:

For days in which institutions schedule a two-a-day practice, live contact practices are only allowed in one practice. A maximum four (4) live contact practices may occur in a given week, and a maximum of 12 total may occur in preseason. Only three practices (scrimmages) would allow for live contact in greater than 50 percent of the practice schedule.

In season practice guidelines:

In season is defined as the period between six (6) days prior to the first regular-season game and the final regular-season game or conference championship game (for participating institutions). There may be no more than two (2) live contact practices per week.

Postseason guidelines: (FCS/DII/DIII)

There may be no more than two (2) live contact practices per week.

Bowl practice guidelines: (FBS)

There may be no more than two (2) live contact practices per week.

Spring practice guidelines:

Of the 15 allowable sessions that may occur during the spring practice season, eight (8) practices may involve live contact; three (3) of these live contact practices may include greater than 50 percent live contact (scrimmages). Live contact practices are limited to two (2) in a given week and may not occur on consecutive days.

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***This Inter-Association Consensus: Year-Round Football Practice Contact Guidelines, has been endorsed by:**

- American Academy of Neurology
- American College of Sports Medicine
- American Association of Neurological Surgeons
- American Football Coaches Association
- American Medical Society for Sports Medicine
- American Orthopaedic Society for Sports Medicine
- American Osteopathic Academy for Sports Medicine
- College Athletic Trainers' Society
- Congress of Neurological Surgeons
- Football Championship Subdivision Executive Committee
- National Association of Collegiate Directors of Athletics
- National Athletic Trainers' Association
- National Football Foundation
- NCAA Concussion Task Force
- Sports Neuropsychological Society

NCUSSION SAFETY

WHAT STUDENT-ATHLETES NEED TO KNOW

What is a concussion?

A concussion is a type of traumatic brain injury. It follows a force to the head or body and leads to a change in brain function. It is not typically accompanied by loss of consciousness.

How can I keep myself safe?

1. Know the symptoms.

You may experience …

- Headache or head pressure
- Nausea
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light or noise
- Feeling sluggish, hazy or foggy
- Confusion, concentration or memory problems

2. Speak up.

- If you think you have a concussion, stop playing and talk to your coach, athletic trainer or team physician immediately.

3. Take time to recover.

- Follow your team physician and athletic trainer's directions during concussion recovery. If left unmanaged, there may be serious consequences.
- Once you've recovered from a concussion, talk with your physician about the risks and benefits of continuing to participate in your sport.

How can I be a good teammate?

1. Know the symptoms.

You may notice that a teammate …

- Appears dazed or stunned
- Forgets an instruction
- Is confused about an assignment or position
- Is unsure of the game, score or opponent
- Appears less coordinated
- Answers questions slowly
- Loses consciousness

2. Encourage teammates to be safe.

- If you think one of your teammates has a concussion, tell your coach, athletic trainer or team physician immediately.
- Help create a culture of safety by encouraging your teammates to report any concussion symptoms.

3. Support your injured teammates.

- If one of your teammates has a concussion, let him or her know you and the team support playing it safe and following medical advice during recovery.
- Being unable to practice or join team activities can be isolating. Make sure your teammates know they're not alone.

No two concussions are the same. New symptoms can appear hours or days after the initial impact.
If you are unsure if you have a concussion, talk to your athletic trainer or team physician immediately.

What happens if I get a concussion and keep practicing or competing?

- Due to brain vulnerability after a concussion, an athlete may be more likely to suffer another concussion while symptomatic from the first one.
- In rare cases, repeat head trauma can result in brain swelling, permanent brain damage or even death.
- Continuing to play after a concussion increases the chance of sustaining other injuries too, not just concussion.
- Athletes with concussion have reduced concentration and slowed reaction time. This means that you won't be performing at your best.
- Athletes who delay reporting concussion take longer to recover fully.

What are the long-term effects of a concussion?

- We don't fully understand the long-term effects of a concussion, but ongoing studies raise concerns.
- Athletes who have had multiple concussions *may* have an increased risk of degenerative brain disease and cognitive and emotional difficulties later in life.

What do I need to know about repetitive head impacts?

- Repetitive head impacts mean that an individual has been exposed to repeated impact forces to the head. These forces may or may not meet the threshold of a concussion.
- Research is ongoing but emerging data suggest that repetitive head impact also may be harmful and place a student-athlete at an increased risk of neurological complications later in life.

Did you know?

- NCAA rules require that team physicians and athletic trainers manage your concussion and injury recovery independent of coaching staff, or other non-medical, influence.
- We're learning more about concussion every day. To find out more about the largest concussion study ever conducted, which is being led by the NCAA and U.S. Department of Defense, visit ncaa.org/concussion.

CONCUSSION TIMELINE

Baseline Testing
Balance, cognitive and neurological tests that help medical staff manage and diagnose a concussion.

Concussion
If you show signs of a concussion, NCAA rules require that you be removed from play and medically evaluated.

Recovery
Your school has a concussion management plan, and team physicians and athletic trainers are required to follow that plan during your recovery.

Return to Learn
Return to school should be done in a step-by-step progression in which adjustments are made as needed to manage your symptoms.

Return to Play
Return to play only happens after you have returned to your preconcussion baseline and you've gone through a step-by-step progression of increasing activity.

For more information, visit ncaa.org/concussion.

STUDENT-ATHLETE CONCUSSION STATEMENT ACKNOWLEDGEMENT

The NCAA Executive Committee has developed a consistent, association-wide approach to Concussion Management. It is the responsibility of all student-athletes to report injuries and illnesses to their Athletic Trainer. This includes, but is not limited to, signs and symptoms related to concussions.

The Clemson University Sports Medicine Department recognizes and acknowledges that concussions or traumatic brain injuries (TBI) need immediate attention. A concussion is defined as a generally short-lived impairment of neurological function brought on by a traumatic force applied to the head or body. Symptoms are usually rapid in onset, but of short duration and generally resolve spontaneously. It is usually a functional disturbance and not a structural one. Loss of consciousness may or may not be involved.

The Clemson Sports Medicine team will determine whether or not a concussion has occurred. American Academy of Neurology guidelines are followed for clarification purposes, realizing that each concussion and each student athlete are different and individual treatment plans are necessary.

SIGNS AND SYMPTOMS OF A POSSIBLE CONCUSSION (including but not limited to):

- Headache
- Nausea
- Balance Problems
- Dizziness
- Diplopia - Double Vision
- Confusion
- Photophobia – Light Sensitivity
- Difficulty Sleeping
- Misophonia – Noise Sensitivity
- Blurred Vision
- Feeling Sluggish or Groggy
- Memory Problems
- Difficulty Concentrating

As a Clemson University Student-Athlete, I acknowledge that I am responsible for reading and understanding the following as it relates to my physical and mental well-being:

- A concussion is a brain injury
- A concussion cannot be seen, but symptoms may be seen immediately. Other symptoms can show up hours or days after injury.
- If I suspect I have a concussion, it is my responsibility to promptly report it to the Sports Medicine staff.
- I will not be allowed to return to practice, play, or academic activities that same day if I have a blow to the head or body and/or exhibit signs or symptoms consistent with a concussion, and will not be allowed to return to play until cleared by the Clemson University Team Physician
- I am responsible to report any suspected injuries or illness to the Sports Medicine staff, including signs or symptoms of a concussion.
- I will promptly notify the Clemson Sports Medicine staff if I suspect a teammate has a concussion
- Following a concussion the brain needs time to heal. An individual is much more likely to sustain another concussion or more serious brain injury if they return to athletic activities before symptoms have resolved. Repeat concussions can lead to longer recovery time,
- All incoming student-athletes will participate in baseline testing.

BY SIGNING BELOW, I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTOOD THE INFORMATION REGARDING CONCUSSIONS AND THAT I HAVE RECEIVED THE NCAA CONCUSSION FACT SHEET.

The NCAA Concussion Fact Sheet is also posted on the Clemson Sports Medicine Department at **www.ClemsonTigers.com**.

SIGN AND RETURN THIS PAGE TO SPORTS MEDICINE. KEEP THE NCAA FACT SHEET.

Print *Full Name of Student-Athlete* *Date*	***Print*** *Full Name of Parent / Guardian or Legal Representative**
Signature of Student-Athlete *Date*	*Signature of Parent / Guardian or Legal Representative** *(if student-athlete is under 18 years of age)* *Date*
	*Capacity of Legal Representative** *(if applicable):*_____
	***May be requested to provide verification of representative status**

CLEMSON SPORTS MEDICINE

BASELINE ASSESSMENT

Student-Athlete Name *(last, first middle)*	Today's Date
Athletic Trainer / Team Physician / Examiner	

SYMPTOM SCALE (Circle Appropriate Number for Each Symptom)

SYMPTOM	NONE	MILD		MODERATE		SEVERE	
HEADACHE	0	1	2	3	4	5	6
NAUSEA or VOMITING	0	1	2	3	4	5	6
DIZZINESS	0	1	2	3	4	5	6
POOR BALANCE	0	1	2	3	4	5	6
SENSITVITY TO NOISE	0	1	2	3	4	5	6
SENSITIVITY TO LIGHT	0	1	2	3	4	5	6
BLURRY VISION	0	1	2	3	4	5	6
POOR CONCENTRATION	0	1	2	3	4	5	6
MEMORY PROBLEMS	0	1	2	3	4	5	6
TROUBLE SLEEPING	0	1	2	3	4	5	6
PRESSURE IN HEAD	0	1	2	3	4	5	6
SLOWED DOWN	0	1	2	3	4	5	6
DROWSINESS/SLEEPY	0	1	2	3	4	5	6
FATIGUE	0	1	2	3	4	5	6
"IN A FOG"	0	1	2	3	4	5	6
SADNESS/DEPRESSION	0	1	2	3	4	5	6
IRRITABILITY	0	1	2	3	4	5	6
NECK PAIN	0	1	2	3	4	5	6
"DON'T FEEL RIGHT"	0	1	2	3	4	5	6
CONFUSION	0	1	2	3	4	5	6
MORE EMOTIONAL	0	1	2	3	4	5	6
NERVOUS OR ANXIOUS	0	1	2	3	4	5	6

BALANCE ERROR SCORING SYSTEM (BESS)

Balance Error Scoring System- Types of Errors
(The BESS is performed with eyes closed and hands on iliac crests)

- Hands lifted off iliac crest
- Opening eyes
- Step, stumble, or fall
- Moving hip into > 30° abduction
- Lifting forefoot or heel
- Remaining out of testing position > 5 seconds

STANCE	ERROR POINTS
DOUBLE LEG STANCE (FEET TOGETHER)	
SINGLE LEG STANCE (NON-DOMINANT FOOT)	
TOTAL	

The BESS is calculated by adding one error point for each error during the 2- 20-second tests

CLEMSON SPORTS MEDICINE

ANNUAL BASELINE ASSESSMENT

Student-Athlete Name *(last, first middle)*	Today's Date
Athletic Trainer / Team Physician / Examiner	

SYMPTOM SCALE (Circle Appropriate Number for Each Symptom)

SYMPTOM	NONE	MILD		MODERATE		SEVERE	
HEADACHE	0	1	2	3	4	5	6
NAUSEA	0	1	2	3	4	5	6
VOMITING	0	1	2	3	4	5	6
DIZZINESS	0	1	2	3	4	5	6
POOR BALANCE	0	1	2	3	4	5	6
SENSITIVITY TO NOISE	0	1	2	3	4	5	6
RINGING IN THE EARS	0	1	2	3	4	5	6
SENSITIVITY TO LIGHT	0	1	2	3	4	5	6
BLURRED VISION	0	1	2	3	4	5	6
POOR CONCENTRATION	0	1	2	3	4	5	6
MEMORY PROBLEMS	0	1	2	3	4	5	6
TROUBLE SLEEPING	0	1	2	3	4	5	6
DROWSINESS/SLEEPY	0	1	2	3	4	5	6
FATIGUE	0	1	2	3	4	5	6
SADNESS/DEPRESSION	0	1	2	3	4	5	6
IRRITABILITY	0	1	2	3	4	5	6
NECK PAIN	0	1	2	3	4	5	6

_____

Signature of Student-Athlete

----------DO NOT WRITE BELOW THIS LINE----------

The student athlete understands that the yearly baseline symptom assessment is to check for symptoms related to a concussion, and the student athlete has no questions and no additional concussion related symptoms.

_____

Signature of Clemson University Athletic Trainer

NCUSSION SAFETY

WHAT COACHES NEED TO KNOW

What is a concussion?

A concussion is a type of traumatic brain injury. It follows a force to the head or body and leads to a change in brain function. It is not typically accompanied by loss of consciousness.

How can I tell if an athlete has a concussion?

You may notice the athlete …

- Appears dazed or stunned
- Forgets an instruction
- Is confused about an assignment or position
- Is unsure of the game, score or opponent
- Appears less coordinated
- Answers questions slowly
- Loses consciousness

Note that no two concussions are the same. All possible concussions must be evaluated by an athletic trainer or team physician.

The athlete may tell you he or she is experiencing …

- A headache, head pressure or that he or she doesn't feel right following a blow to the head
- Nausea
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light or noise
- Feeling sluggish, hazy or foggy
- Confusion, concentration or memory problems

What can I do to keep student-athletes safe?

	Preseason	In-Season	Time of Injury	Recovery
What can I do?	Create a culture in which concussion reporting is encouraged and promoted.	Know the signs and symptoms of concussions.	Remove athletes from play immediately if you think they have a concussion and refer them to the team physician or athletic trainer.	Follow the recovery and return-to-play protocol established by team physicians and athletic trainers.
Why does it matter?	Athletes who don't immediately seek care for a suspected concussion take longer to recover.	The more people who know what to look for in a concussed athlete, the more likely a concussion will be identified.	Early removal from play can mean a quicker recovery and help avoid serious consequences.	Team physicians and athletic trainers have the training to follow best practices related to the concussion recovery process.
Tips and strategies	Be present when your team physician or athletic trainer provides concussion education material to your team. Tell your team that this matters to you.	Check in with your team physician or athletic trainer if you want to learn more about concussion safety.	Provide positive reinforcement when an athlete reports a suspected concussion.	Tell athletes that decisions related to their return to play and health are entirely in the hands of the team physician and athletic trainer.

You play a powerful role in setting the tone for concussion safety on your team. Let your team know that you take concussion seriously and reporting the symptoms of a suspected concussion is an important part of your team's values.

What happens if an athlete gets a concussion and keeps practicing or competing?

- Due to brain vulnerability after a concussion, an athlete may be more likely to suffer another concussion while symptomatic from the first one.
- In rare cases, repeat head trauma can result in brain swelling, permanent brain damage or even death.
- Continuing to play after a concussion increases the chance of sustaining other injuries too, not just concussion.
- Athletes with a concussion have reduced concentration and slowed reaction time. This means they won't be performing at their best.
- Athletes who delay reporting concussion may take longer to recover fully.

What are the long-term effects of a concussion?

- We don't fully understand the long-term effects of a concussion, but ongoing studies raise concerns.
- Athletes who have had multiple concussions *may* have an increased risk of degenerative brain disease, and cognitive and emotional difficulties later in life.

What do I need to know about repetitive head impacts?

- Repetitive head impacts mean that an individual has been exposed to repeated impact forces to the head. These forces may or may not meet the threshold of a concussion.
- Research is ongoing but emerging data suggest that repetitive head impact also may be harmful and place a student-athlete at an increased risk of neurological complications later in life.

Did you know?

- Most contact or collision teams have at least one student-athlete diagnosed with a concussion every season.
- Your school has a concussion management plan, and team physicians and athletic trainers are expected to follow that plan during a student-athlete's recovery.
- NCAA rules require that team physicians and athletic trainers have the unchallengeable authority to make all medical management and return-to-play decisions for student-athletes.
- We're learning more about concussion every day. To find out more about the largest concussion study ever conducted, which is being led by the NCAA and U.S. Department of Defense, visit ncaa.org/concussion.

For more information, visit ncaa.org/concussion.

NCAA | SPORT SCIENCE INSTITUTE

ATHLETIC STAFF CONCUSSION STATEMENT ACKNOWLEDGEMENT

The NCAA Executive Committee has developed a consistent, association-wide approach to Concussion Management.

The Clemson University Sports Medicine Department recognizes and acknowledges that concussions or traumatic brain injuries (TBI) need immediate attention. A concussion is defined as a generally short-lived impairment of neurological function brought on by a traumatic force applied to the head or body. Symptoms are usually rapid in onset, but of short duration and generally resolve spontaneously. It is usually a functional disturbance and not a structural one. Loss of consciousness may or may not be involved.

The Clemson Sports Medicine team will determine whether or not a concussion has occurred. American Academy of Neurology guidelines are followed for clarification purposes, realizing that each concussion and each student-athlete are different and individual treatment plans are necessary.

SIGNS AND SYMPTOMS OF A POSSIBLE CONCUSSION (including but not limited to):

- Headache
- Nausea
- Balance Problems
- Dizziness
- Diplopia - Double Vision
- Confusion
- Photophobia – Light Sensitivity
- Difficulty Sleeping
- Misophonia – Noise Sensitivity
- Blurred Vision
- Feeling Sluggish or Groggy
- Memory Problems
- Difficulty Concentrating

As a Clemson University Athletic Staff member, I acknowledge that I am responsible for reading and understanding the following as it relates to the physical and mental well-being of all student-athletes:

- A concussion is a brain injury
- A concussion cannot be seen, but symptoms may be seen immediately. Other symptoms can show up hours or days after injury.
- If I suspect a student-athlete has a concussion, it is my responsibility to promptly report it to the Sports Medicine staff.
- I will not allow any student-athlete to return to practice, play, or academic activities that same day if I suspect that he/she has received blow to the head or body and/or exhibit signs or symptoms consistent with a concussion, and will not be allowed to return to play until cleared by the Clemson University Team Physician.
- I will encourage all student-athletes to report any suspected injuries or illness to the Sports Medicine staff, including signs or symptoms of a concussion.
- Following a concussion the brain needs time to heal. A student-athlete is much more likely to sustain another concussion or more serious brain injury if they return to athletic activities before symptoms have resolved. Repeat concussions can lead to longer recovery time, and in rare cases, can cause permanent brain damage or even death.
- All incoming student-athletes will participate in baseline testing.

BY SIGNING BELOW, I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTOOD THE INFORMATION REGARDING CONCUSSIONS AND THAT I HAVE RECEIVED THE NCAA CONCUSSION FACT SHEET.

SIGN AND RETURN THIS PAGE TO SPORTS MEDICINE. KEEP THE NCAA FACT SHEET.

_____

Print *Full Name of Athletic Staff Member* *Date*

_____

Signature of Athletic Staff Member *Date*

CONCUSSION HEAD INJURY INFORMATION TAKE-HOME INSTRUCTIONS

You have received an injury to the head. No signs of serious complications have been found and a rapid recovery is expected. However, you will need further monitoring for a period of time by a responsible adult. The sports medicine staff will provide guidance for this.

If you notice any changes in behavior, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, **contact your Athletic Trainer or report to the Athletic Training Room immediately.** If you are unable to reach the Sports Medicine staff and it is after Athletic Training Room hours, then you may activate emergency medical services by either having someone drive you to Oconee Memorial Hospital, or call (864) 656-2222 for an ambulance to Oconee Memorial Hospital. **DO NOT ignore any changes in the symptoms of your concussion**.

OTHER IMPORTANT POINTS:

- Rest and avoid strenuous activity for at least 24 hours
- NO alcohol
- NO drugs/painkillers that may alter awareness
- NO driving until cleared by sports medicine staff
- You may take Tylenol if instructed to do so by the Sports Medicine Staff
- LIMIT use of electronic devices (Cell Phone, Computer, TV, Etc.)

Report to the athletic training room at _____ am/pm,
on _____ /____ /_____
to be re-evaluated prior to Team or Academic activity.

Phone Numbers:

_____ _____
Athletic Trainer *Team Physician*

_____ _____
Signature of Student-Athlete *Date* *Signature of Clemson University Athletic Trainer or M.D* *Date*

CLEMSON SPORTS MEDICINE

CONCUSSION ASSESSMENT FORM

Student-Athlete Name (*last, first middle*)	Today's Date
Student-Athlete Signature	Injury Date
Athletic Trainer / Team Physician	Post-Injury Day

POST-CONCUSSION SYMPTOM SCALE

(Circle Appropriate Number for Each Symptom)

Symptom	None	Mild		Moderate		Severe	
HEADACHE	0	1	2	3	4	5	6
NAUSEA	0	1	2	3	4	5	6
VOMITING	0	1	2	3	4	5	6
DIZZINESS	0	1	2	3	4	5	6
POOR BALANCE	0	1	2	3	4	5	6
SENSITIVITY TO NOISE	0	1	2	3	4	5	6
RINGING IN THE EARS	0	1	2	3	4	5	6
SENSITIVITY TO LIGHT	0	1	2	3	4	5	6
BLURRED VISION	0	1	2	3	4	5	6
POOR CONCENTRATION	0	1	2	3	4	5	6
MEMORY PROBLEMS	0	1	2	3	4	5	6
TROUBLE SLEEPING	0	1	2	3	4	5	6
DROWSINESS/SLEEPY	0	1	2	3	4	5	6
FATIGUE	0	1	2	3	4	5	6
SADNESS/DEPRESSION	0	1	2	3	4	5	6
IRRITABILITY	0	1	2	3	4	5	6
NECK PAIN	0	1	2	3	4	5	6

SPORTS MEDICINE

CONCUSSION AWARENESS LETTER

The Clemson University Sports Medicine Department would like to inform you that _____ sustained a concussion on ___ /___ /___. The student-athlete will undergo continued follow-up/testing with the Sports Medicine department. A concussion can cause a variety of physical, cognitive, and emotional symptoms. Concussions range in significance from minor to major, but they all share one common factor — temporary interference with the way the brain works. We would like to inform you that during the next few weeks this student-athlete may experience one or more of these signs and symptoms:

- Headache
- Nausea
- Balance Problems
- Dizziness
- Diplopia - Double Vision
- Confusion
- Photophobia – Light Sensitivity
- Difficulty Sleeping
- Phonophobia – Noise Sensitivity
- Blurred Vision
- Feeling Sluggish or Groggy
- Memory Problems
- Difficulty Concentrating

As a department, we wanted to make you aware of this injury and the related symptoms that the student-athlete may experience. Although the student may be attending class, please be aware that the side effects of the concussion may adversely impact his/her academic performance, including difficulties using electronic devices, including computer, cell phone, television, etc. Any consideration you may provide academically during this time would be greatly appreciated. We will continue to monitor the progress of this student-athlete and will be in constant communication with the Nieri academic advisor regarding their academic progress and status. Should you have any questions or require further information, please do not hesitate to contact us, or Nieri Academic Center.

Thank you in advance for your time and understanding.

Sincerely,

Team Physician
(864) 656-1952

EMERGENCY ACTION PLAN

INTRODUCTION

Emergency situations may arise at any time during athletic events. Expedient action must be taken in order to provide the best possible care to the athletes experiencing emergency and/or life-threatening conditions. The development and implementation of an emergency plan will help ensure that the best care will be provided.

Athletic organizations have a duty to develop an emergency plan that may be implemented immediately when necessary and to provide appropriate standards of health care to all sports participants. As athletic injuries may occur at any time and during any activity, the sports medicine team must be prepared. This preparation involved formulation of an emergency plan, proper coverage of events, maintenance of appropriate emergency equipment and supplies, utilization of appropriate emergency medical personnel, and continuing education in the area of emergency medicine. Hopefully, through careful pre-participation physical screenings, adequate medical coverage, safe practice and training techniques and other safety avenues, some potential emergencies may be averted. However, accidents and injuries are inherent with sports participant, and proper preparation on the part of the sports medicine team will enable each emergency situation to be managed appropriately.

COMPONENTS OF THE EMERGENCY PLAN

There are three basic components of this plan:

1. Emergency personnel
2. Emergency communication
3. Emergency equipment

EMERGENCY PLAN PERSONNEL

With athletic association practice and competition, the first responder to an emergency situation is typically a member of the sports medicine staff, most commonly a certified athletic trainer. A team physician may not always be present at every organized practice or competition. The type and degree of sports medicine coverage for an athletic event may vary widely, based on such factors as the sport or activity, the setting, and the type of training or competition. The first responder in some instances may be a coach or other institutional personnel. Certification in cardiopulmonary resuscitation (CPR), first aid, prevention of disease transmission, and emergency plan review is required for all athletics personnel associated with practices, competitions, skills instruction, and strength and conditioning.

The development of an emergency plan cannot be complete without the formation of an emergency team. The emergency team may consist of a number of healthcare providers including managers; and, possibly, bystanders. Roles of these individuals within the emergency team may vary depending on various factors such as the number of members on the team, the athletic venue itself, or the preference of the head athletic trainer. There are four basic roles within the emergency team. The first and most important role is immediate care of the athlete. The most qualified individual on the scene should provide acute care in an emergency situation. Individuals with lower credentials should yield to those with more appropriate training. The second role, equipment retrieval, may be done by anyone on the emergency team who is familiar with the types and location of the specific equipment needed. Student athletic trainers, managers, strength coaches and coaches are good choices for this role. The third role, EMS activation, may be necessary in situations where emergency transportation is not already present at the sporting event. This should be done as soon as the situation is deemed an emergency or a life-threatening event. Time is the most critical factor under emergency conditions. Activating EMS system may be done by anyone on the team. However, the person chosen for this duty should be someone who is calm under pressure and who communicates well over the telephone. This person should also be familiar with the location and address of the sporting event. After EMS has been activated, the fourth role in the emergency team should be performed. That consists of directing EMS to the scene. One member of the team should be responsible for meeting emergency medical personnel as they arrive at the site of the contest. Depending on ease of access, this person should have keys to any locked gates or doors that may slow the arrival of medical personnel. A student athletic trainer, manager, strength coach, or coach may be appropriate for this role.

ROLES WITH IN THE EMERGENCY TEAM

- Immediate care of the athlete
- Emergency equipment retrieval
- Activation of the Emergency Medical System
- Direction of EMS to scene
- Call Athletic Training Room to alert Team Physician of situation

ACTIVATING THE EMS SYSTEM

Making the Call:

- 911 (if available)
- Telephone numbers for local police, fire department, and ambulance service

Providing Information

- Name, address, telephone number of caller
- Number of athletes
- Condition of athlete(s)
- First aid treatment initiated by first responder
- Specific directions as needed to locate the emergency scene ("come to south entrance of coliseum")
- Other information as requested by dispatcher

When forming the emergency team, it is important to adapt the team to each situation or sport. It may also be advantageous to have more than one individual assigned to each role. This allows the emergency team to function even though certain members may not always be present.

EMERGENCY COMMUNICATION

Communication is the key to quick delivery of emergency care in athletic trauma situations. Athletic trainers and emergency medical personnel must work together to provide the best possible care to injured athletes. Communication prior to the event is a good way to establish boundaries and to build rapport between both groups of professionals. If emergency medical transportation is not available on site during a particular sporting event then direct communication with the emergency medical system at the time of injury or illness is necessary.

Access to a working telephone or other telecommunications device, whether fixed or mobile, should be assured. The communications system should be checked prior to each practice or competition to ensure proper working order. A back-up communication plan should be in effect should there be failure of the primary communication system. The most common method of communication is a public telephone. However, a cellular phone is preferred if available. At any athletic venue, whether home or away, it is important to know the location of a workable telephone. Pre-arranged access to the phone should be established if it is not easily accessible.

EMERGENCY EQUIPMENT

All necessary emergency equipment should be at the site and be quickly accessible. Personnel should be familiar with the function and operation of each type of emergency equipment. Equipment should be in good operating condition, and personnel must be trained in advance to use it properly. Emergency equipment should be checked on a regular basis and use rehearsed by emergency personnel. The emergency equipment available should be appropriate for the level of training for the emergency medical providers.

It is important to know the proper way to care for and store the equipment as well. Equipment should be stored in a clean and environmentally controlled area. It should be readily available when emergency situations arise.

TRANSPORTATION

Emphasis is placed at having an ambulance on site at high risk sporting events. EMS response time is additionally factored in when determining on site ambulance coverage. The athletic association coordinates on site ambulances for competition in football, and men and women's basketball. Ambulances may be coordinated on site for other special events/sports, such as major tournaments or ACC/NCAA regional or championship events. Consideration is given to the capabilities of transportation service available (i.e., Basic Life Support or Advanced Life Support) and the equipment and level of trained personnel on board the ambulance. In the event that the ambulance is on site, there should be a designated location with rapid access to the site and a cleared route for entering/exiting the venue.

In the emergency evaluation, the primary survey assists the emergency care provider in identifying emergencies requiring critical intervention and in determining transport decisions. In an emergency situation, the athlete should be transported by ambulance. Care must be taken to ensure that the activity areas are supervised should the emergency care provider leave the site in transporting the athlete.

Normally in the afternoons, when most practices are occurring, the Team Physician is in the Athletic Training Room. A special parking place has been provided for the Team Physician at Jervey, which allows for quick access to all athletic venues. Therefore the Athletic Training Room should be notified immediately in an emergency situation so the Team Physician can respond appropriately.

CONCLUSION

The importance of being properly prepared when athletic emergencies arise cannot be stressed enough. An athlete's survival may hinge on the training and preparedness of athletic healthcare providers. It is prudent to invest athletic department "ownership" in the emergency plan by involving the athletic administration and sport coaches, as well as sports medicine personnel. The emergency plan should be reviewed at least once a year with all athletic personnel, along with CPR refresher training. Through development and implementation of the emergency plan, the athletic association helps ensure that the athlete will have the best care provided when an emergency situation does arise

SPORT SCIENCE INSTITUTE™

INTERASSOCIATION RECOMMENDATIONS

PREVENTING CATASTROPHIC INJURY AND DEATH IN COLLEGIATE ATHLETES

APPENDIX M

CONTENTS

July 2019

INTRODUCTION

The second Safety in College Football Summit resulted in interassociation consensus recommendations for three paramount safety issues in collegiate athletics:

1. Independent medical care for collegiate athletes.
2. Diagnosis and management of sport-related concussion.
3. Year-round football practice contact for collegiate athletes.

This document, the fourth arising from the 2016 event, addresses the prevention of catastrophic injury, including traumatic and nontraumatic death, in collegiate athletes. The final recommendations in this document are the result of presentations and discussions on key items that occurred at the summit. After those presentations and discussions, endorsing organization representatives agreed on 18 draft foundational statements (available upon request) that became the basis for this consensus paper, which has been subsequently reviewed by relevant stakeholders and endorsing organizations. This is the final endorsed document for preventing catastrophic injury and death in collegiate athletes.

This document is divided into the following components:

BACKGROUND
This section provides an overview of catastrophic injury and death in collegiate athletes.

INTERASSOCIATION RECOMMENDATIONS: PREVENTING CATASTROPHIC INJURY AND DEATH IN COLLEGIATE ATHLETES
This section provides the final recommendations of the medical organizations for preventing catastrophic injuries in collegiate athletes.

INTERASSOCIATION RECOMMENDATIONS: CHECKLIST
This section provides a checklist for each member school. The checklist will help the athletics health care administrator to ensure that policies are in place and followed, and are consistent with this document, *Interassociation Recommendations: Preventing Catastrophic Injury and Death in Collegiate Athletes.*

REFERENCES
This section provides the relevant references for this document.

APPENDIXES
This section lists the agenda, summit attendees and medical organizations that endorsed this document.

BACKGROUND

Data about catastrophic injuries and illnesses in collegiate athletes began with intermittent accounts from print media, and more formally in 1931, through the American Football Coaches Association's initiation of the Annual Survey of Football Injury Research. Since 1982, the National Center for Catastrophic Sport Injury Research at the University of North Carolina, Chapel Hill,[1] has been the nation's premier source of catastrophic injury and death related to participation in organized sports at all levels of competition, including college. The NCCSIR monitors, collects and analyzes data on catastrophic injuries, illnesses and death and provides publicly available reports about football and other sports.[1]

In order to create enhanced national surveillance abilities for catastrophic injuries, illness and death, the NCCSIR has partnered with the Consortium for Catastrophic Injury Monitoring in Sport. The consortium includes the division on traumatic injury at the Matthew Gfeller Sport-Related Traumatic Brain Injury Research Center at the University of North Carolina, Chapel Hill; the division on exertional injury at the Korey Stringer Institute at the University of Connecticut; and the division on cardiac injury in sport at the University of Washington.[1] Working through the consortium, the NCCSIR has developed new methods of data collection and analysis, including the use of a public-facing online reporting system.[2]

Researchers who study the epidemiology of catastrophic injury and death in sport identify two mechanisms by which these events occur. *Traumatic* catastrophic injuries, also called direct injuries, are bodily injuries caused directly by participation in a sport activity.[1] An example of a traumatic catastrophic injury is a spinal cord injury caused by tackling in the sport of football. The three leading causes of death from traumatic injury are traumatic brain injuries, spinal cord injuries and internal organ injuries.[1] *Nontraumatic* catastrophic injuries, also known as indirect or exertional injuries, are the "result of exertion while participating in a sport activity or by a complication that was secondary to a non-fatal injury."[1] An example of a nontraumatic catastrophic injury is sudden cardiac arrest in an athlete occurring during a basketball practice. The two leading causes of death from nontraumatic injury are sudden cardiac death and exertional injuries.[1,3]

Enhancing a culture of safety in college sports in general, and college football in particular, is foundational to reducing the occurrence of catastrophic injury and death and the basis for bringing college athletics stakeholders to the first Safety in College Football Summit in 2014, and then reconvening in 2016. The goal of this and any sport safety initiative is protecting the life and the long-term well-being of all athletes.

Catastrophic Injury Patterns

Since 1982, the first year for which catastrophic injury/illness data were available across all collegiate sports (i.e., NCAA; National Association of Intercollegiate Athletics; National Junior College Athletic Association), there have been 487 catastrophic injuries or illnesses. Of these, 297 (61%) were traumatic events and 190 (39%) were nontraumatic events.[1] In 2016-17, the last year for which data across all collegiate sports are available, 19 catastrophic events occurred, five of which were fatal.[1]

Overall, football has the highest number of both traumatic and nontraumatic catastrophic injuries of any collegiate sport. Since 1931, the first year in which football-specific fatality data were collected, there have been 94 traumatic fatalities in college football and 127 nontraumatic fatalities.[4] More recently, since 1960 there have been 51 traumatic fatalities and 99 nontraumatic in football.[4] After adjusting for the total number of participating athletes, football is joined by male gymnastics, female skiing, male ice hockey and female gymnastics for the highest rates of traumatic catastrophic injury.[1] Traumatic events in football had fallen every decade from 1960 until 1994. That decline is associated with rule modifications based on research,[5,6] enhanced medical care and education. Since 1994, the number of traumatic injuries has varied, but at a level generally lower than those of the 1970s and 1980s.[1]

Since 1970, in both high school and college football, nontraumatic fatalities have outnumbered traumatic fatalities. Nontraumatic deaths in American football have remained relatively steady for more than five decades. Data from 2017[4] reveal the current decade will continue this unfortunate and often preventable trend of nontraumatic death that occurs largely in out-of-season or preseason workouts. From 2001 to 2017, the ratio of nontraumatic to traumatic death in collegiate football was 5:1 — 35 nontraumatic deaths compared with seven traumatic fatalities.[4]

While rule modification has the potential to decrease nontraumatic deaths in certain situations (e.g., verification of sickle cell trait decreasing exertional collapse associated with sickle cell trait in Division I football), the policy and procedures to prevent nontraumatic catastrophic death have not kept pace with strength and conditioning sessions and practice sessions that continue to be the setting for record rates of high school and college athlete deaths. For example, of the nine nontraumatic deaths of football players at all levels of the sport in 2017, six occurred during conditioning sessions and one occurred during a strengthening session.[1] For the 2015-16 academic year, six (15%) of the 40 nontraumatic catastrophic injuries and illnesses that occurred across all sports and all levels of competition took place during strength and conditioning sessions.[1] This means that across all sports beside football, nontraumatic injuries are occurring in practice sessions overseen by sport coaches and not during strength and conditioning sessions.

Policy Developments

Available research provides insight into risk factors for catastrophic injury and has led to policy decisions meant to mitigate those risks. Established research demonstrates that NCAA Division I football athletes with sickle cell trait are at a higher risk of nontraumatic catastrophic events, including death.[5,7,8] In response, the last decade has seen an increase in policy recommendations for the prevention of exertional collapse associated with sickle cell trait (ECAST) in collegiate sport. In 2007, the National Athletic Trainers' Association released a consensus statement on sickle cell trait in the athlete.[9] By 2013, all three NCAA divisions had adopted legislation requiring confirmation of student-athlete sickle cell trait status before participation.[10-12] This policy, in tandem with targeted on-site precautions, has resulted in a statistically significant decrease in the number of ECAST deaths in college athletes.[13,14]

Transition periods, defined below, are often associated with poor acclimatization and fitness levels in athletes returning to activity.[15,16] These concerns have prompted several policy developments. In 2003, the NCAA implemented preseason acclimatization legislation for football.[17,18] In the same year, NCAA Division I passed a bylaw[19] specific to Football Bowl Subdivision and Football Championship Subdivision football that requires any strength and conditioning

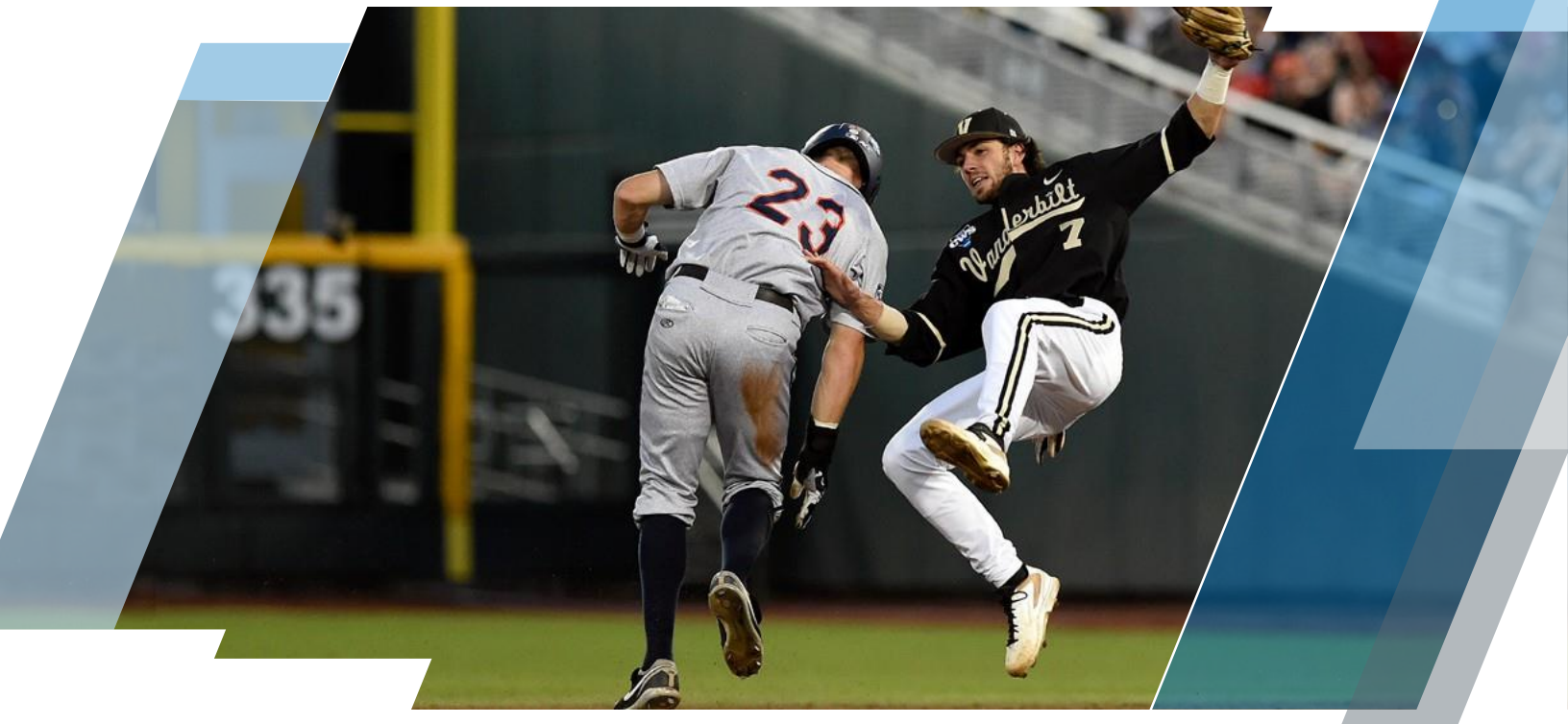
professional who conducts voluntary offseason weight training or conditioning activities to be certified in first aid and cardiopulmonary resuscitation and to be accompanied by a member of the sports medicine staff who has unchallengeable authority to cancel or modify the workout for health and safety reasons. NCAA Division II passed similar legislation one year later.[20] In Division I, the unchallengeable authority component of this legislation was extended to all sports other than football in situations when a member of the sports medicine staff is present at a workout. In 2012, NATA released interassociation best practices on the prevention of sudden death in collegiate athletes during strength and conditioning drills.[15] As of 2016, all three NCAA divisions have legislation that requires strength and conditioning professionals to have a certification from either a nationally recognized strength and conditioning certification program[21,22] or from an accredited strength and conditioning certification program.[23]

However, despite these policy developments, catastrophic injuries and fatalities continue to occur. In recent years, most of the fatalities are from nontraumatic causes. These can be mitigated at the member school with appropriate strategies.

Prevention Strategies

Nontraumatic deaths can be mitigated locally through implementation of consensus- and science-based recommendations. Yet, the number of nontraumatic fatalities are twice those of traumatic fatalities. There have been 99 nontraumatic deaths in collegiate football compared to 51 traumatic deaths since 1960. Just as most of the fatal head injuries and catastrophic cervical spine injuries occurring from 1960 to 1975 can be directly related to the style of play in the sport of football during that time,[24-26] nontraumatic, exertion-related death is directly related to the conduct and construct of workouts intended to prepare athletes to play sport.[5,16,27,28] Whereas spearing is often the mechanism for traumatic catastrophic injury and death in football,[25,26] intense, sustained exertion that is not sport-specific and does not include appropriate work-to-rest ratios, coupled with modifications for individual risk and precautions, is too often the mechanism for exertion-related nontraumatic fatality.[5,9,16,27-29]

Since 1970, traumatic deaths have undergone a steep and steady decline; nontraumatic deaths, however, have remained steady since 1960. The current era, from 2000 to present, is notable for the following: year-round training for football coupled with the highest incidence of nontraumatic sport-related training deaths in football in recorded history. A proper combination of strategies to prevent the condition from arising in the first place; ensurance of optimal medical care delivery by key stakeholders onsite; and transparency and accountability in workouts should help to eliminate such nontraumatic deaths — a major goal of this document.



INTERASSOCIATION RECOMMENDATIONS:

PREVENTING CATASTROPHIC INJURY AND DEATH IN COLLEGIATE ATHLETES

Best practices for preventing catastrophic injury and death in collegiate sport are organized into six key areas.

RECOMMENDATION 1 | SPORTSMANSHIP

The principle of sportsmanship is foundational to NCAA athletics competition and creates a moral and ethical framework within which athletics competition occurs. This framework rejects any intentional effort by athletes to use any part of their body, uniform or protective equipment as a weapon to injure another athlete or themselves.[30] This philosophical commitment is further amplified by expressed statements about the value of sportsmanship in sport playing rules.[31-33] The avoidance of on-field or on-court behaviors intended to cause injury to another athlete must become part of the cultural foundation from which all subsequent sport safety initiatives arise.

While acknowledging that football, like other contact/collision sports, is an aggressive, rugged contact sport, the rules of football and of all other sports identify a responsibility shared by all involved to conduct themselves according to a shared ethical code.[33] This code requires that the head and helmet not be used as a weapon, and that unsportsmanlike efforts to deliberately injure an opponent are outside the boundaries of fair and legal play. The act does not need to be purposeful to be considered an infraction.

Given this commitment to sportsmanship, coupled with the considerable safety implications of its violation, the following recommendations regarding deliberate injury to an opponent should be considered in all sports:

1. A player should be ejected immediately from competition (in addition to a particular penalty) for a first infraction.
2. Video replay (when available) after the competition can verify missed calls and could lead to suspension from the next competition. Conferences play a crucial role in this process and should commit themselves to this responsibility.
3. Officials who fail to call such infractions should be educated and/or disciplined appropriately.
4. In helmeted sports, rules should be further developed to prohibit and penalize the initiation of contact with the head/helmet and should be uniformly enforced.

RECOMMENDATION 2 | PROTECTIVE EQUIPMENT

Protective equipment that is used in sport typically must be manufactured and maintained according to performance and safety standards promulgated by standards organizations such as the National Operating Committee on Standards for Athletic Equipment[34,35] and ASTM International.[36] When sport playing rules require equipment to comply with existing standards, the legality of the equipment is dependent on compliance, certification or both with existing standards. For example, current playing rules in the sport of football require that helmets be manufactured and maintained according to standards established by NOCSAE. These standards have been demonstrated to reduce the occurrence of catastrophic brain injury.[37] In some cases, as with the helmet in the sport of football, equipment must be maintained through a reconditioning process. Where this responsibility exists, member institutions must remain vigilant about ensuring necessary maintenance to ensure the continued safety and legality of protective equipment.

The following should be implemented across all sports:

- Every member school should establish policy to ensure annual certification, recertification and compliance, as appropriate, with all protective equipment standards.

RECOMMENDATION 3 | ACCLIMATIZATION AND CONDITIONING

Many nontraumatic deaths take place during the first week of activity of a transition period in training.[15] Given this fact, it is imperative to recognize the vulnerability during these periods and to ensure that both proper exercise and heat acclimatization are implemented.

Transition periods hold particular risk, but absent adherence to established standards, best practices and precautions, collegiate athletes are at risk at all points in the offseason regimen. For example, February and July typically are not transition times, yet from 2000 to 2017, they are the deadliest months of winter and summer training in collegiate football.[28] Acclimatization and physiologic progression with a basis of exercise science and sport specificity are the cornerstones of safe conditioning and physical activity. It takes approximately seven to 10 days for the body to acclimatize to the physiologic and environmental stresses placed upon it at the start of a conditioning or practice period, especially during periods of warm or hot weather.[15,38,39]

Acclimatization, especially heat acclimatization, can occur only through repeated exposure to a hot environment[40] while progressively increasing the volume and intensity of physical activity.[41] Unfortunately, perceived time pressures by coaches coupled with the culture of certain sports that excesses in training make athletes tough, disciplined and accountable contribute to a tendency to overload athletes during transition periods.[15,42]

A minimum expectation is that ***all*** strength and conditioning sessions, regardless of when in the year they occur, should be evidence- or consensus-based; sport-specific; intentionally administered; appropriately monitored, regardless of the phase of training; and not punitive in nature.

For acclimatization and conditioning, the following direction should be considered for all sports and by any individual responsible for the planning and/or implementation of training and conditioning sessions, whether that be a strength and conditioning professional or a sport coach:

1. Training and conditioning sessions should be introduced intentionally, gradually and progressively to encourage proper exercise acclimatization and to minimize the risk of adverse effects on health. This is especially important during the first seven days of any new conditioning cycle, which should be considered a *transition period*. A lack of progression and sport-specificity in the volume, intensity, mode and duration of conditioning programs in transition periods has been noted as a primary factor in nontraumatic fatalities.[16] Importantly, in this period of year-round sport, new conditioning cycles can occur several times throughout the year and are not limited to the beginning of a competitive season. During transition periods, athletes should be instructed to avoid additional volunteer sessions of physical activity (e.g., 7-on-7 drills, pickup games, drill work). Physical activity schedules during transition periods should be well prescribed, accounting for all sources of physical activity in which an athlete engages.

   Examples of transition periods for athletes include, but are not limited to:

   a. Individual transitions.
      (1) Athletes new to the program.
      (2) Returning after an injury or illness.
      (3) Any delayed participation relative to the team schedule.
   b. Team transitions.
      - Resumption of training after an academic break (e.g., winter, spring, summer breaks).

2. Training and conditioning sessions should be exercise-science based and physiologically representative of the sport and its performance components. Conditioning programs should begin with work-to-rest ratio intervals appropriate for the goals of the training session and that allow for proper recovery.

3. Collegiate athletes are especially vulnerable to exertional injuries during the first four days of transition periods, and the data support that modifications in these periods can greatly decrease the risk of catastrophic events.[14] During this time, training and conditioning sessions should be appropriately calibrated and include

limitations on total volume and intensity of activity. This may be accomplished in several ways. For example, holding only one training and conditioning session per day during the transition period may be effective for limiting the volume of physical activity.

a. Properly training during transition periods also should greatly reduce or eliminate rhabdomyolysis, which is largely preventable. Since 2007, 57 NCAA collegiate athletes have been reported as suffering from exertional rhabdomyolysis in nine team outbreaks representing eight different institutions, with 51 of the afflicted athletes requiring hospitalization.[43] Novel overexertion, or exertion caused by new activities or at unaccustomed volume or intensity, is the most common cause of exertional rhabdomyolysis and is characterized as too much, too soon and too fast in a workout regimen.[14] Team outbreaks of exertional rhabdomyolysis in NCAA athletes have similarities of irrationally intense workouts designed and conducted by coaches and/or strength and conditioning professionals.[43]

b. When phasing in activity during transition periods, athletics staff members should consider the following:
   (1) Days/week.
   (2) Body part.
   (3) Activity/exercise.
   (4) Sets/repetitions/distance.
   (5) Load (percent of one-repetition maximum, i.e., 1RM).
   (6) Work-rest ratio.
   (7) Modifications: position; individual; return from injury; environment.

4. All training and conditioning sessions should be documented. In addition, all training and conditioning sessions should:
   a. Be approved by a credentialed strength and conditioning professional, or by the head sport coach at institutions that do not employ strength and conditioning professionals.
   b. Address exercise volume, intensity, mode and duration.
   c. Ensure the location of the training and conditioning session is identified in the plan to accommodate venue-specific emergency action planning.
   d. Be reproducible upon request and be shared with the primary athletics health care providers (team physician and athletic trainer) before the session in which they are to be used.
   e. Be modified in response to hazardous environmental conditions, scheduling considerations, etc. The amended workout plan should maintain the above principles.

5. A disciplinary system should be developed and applied to strength and conditioning professionals and sport coaches who fail to follow these recommendations. Such penalties could include suspension and/or termination by the member school. Additionally, failure to follow the recommendations could be a reportable offense by member schools to the NCAA.

RECOMMENDATION 4 | EMERGENCY ACTION PLAN

There is broad agreement that the most effective way to prevent catastrophic fatalities and manage nonfatal catastrophic events is through a sound and well-rehearsed emergency action plan.[13,15,29,44,45] Venue-specific emergency action plans are a cornerstone of emergency readiness for campus and athletics health care providers.[38,46]

Emergency action plans should be readily available to all members of the athletics community, located both centrally and at each venue at which athletics activities will occur and should be rehearsed with all relevant sports medicine and coaching staff at least once a year. The equipment necessary to execute the emergency action plan should be available to each venue at which athletics activities will occur. Emergency action plan rehearsal also should be incorporated into new employee orientation.

At a minimum, well-rehearsed and venue-specific emergency action plans should be developed for the following nontraumatic catastrophic events:

1. Head and neck injury.
2. Cardiac arrest.
3. Heat illness and heat stroke.
4. Exertional rhabdomyolysis.
5. Exertional collapse associated with sickle cell trait.
6. Any exertional or nonexertional collapse.
7. Asthma.
8. Diabetic emergency.
9. Mental health emergency.

In addition, well-rehearsed and venue-specific emergency action plans should be consistent with the NCAA Concussion Safety Protocol Checklist.[47] This checklist was created in response to NCAA legislation passed by the Division I conferences with autonomy in January 2015,[47] and subsequently by all three divisions. The checklist facilitates the development of a comprehensive and coordinated set of policies to guide institutions in the diagnosis and management of collegiate athlete concussions and in the eventual return to play and return to the classroom by those athletes. Concussion emergency action plans should be created for the following suspected conditions:

1. Concussion.
2. Moderate or severe traumatic brain injury.
3. Cervical spine injuries.

Special considerations:

1. Cardiac emergencies — Research has shown that in sudden cardiac arrest, the probability of survival drops by 7-10% for every minute of active arrest, whereas the probability of survival is 89% in properly administered CPR and automated external defibrillators.[48,49] The location of AEDs should be documented and should reflect a strategy that ensures their arrival at the scene of a collapse with the target goal of collapse-to-shock in less than three minutes.[49] All AEDs should be checked at least monthly to assure they are fully charged.[49]

2. Exertional heat illness emergencies — Exertional heatstroke is a medical emergency that is characterized by extreme hyperthermia (>40.0 degrees C/>104 degrees F) and central nervous system dysfunction such as altered behavior or decreased consciousness.[41] To differentiate heatstroke from other acute medical events, primary athletics health care providers should be prepared to measure core body temperature using rectal thermometry. Rectal temperature has been demonstrated as the most accurate method for measuring body temperature, whereas other methods such as axillary, tympanic (aural), temporal, oral and skin measurements are not valid or reliable predictors of core temperature.[50] During warm weather events, but especially preseason practices of fall season sports, resources (e.g., equipment and personnel) should be readily available to ensure that full-body ice water immersion can be conducted in a timely manner. Full-body immersion in cold water (1.7 degrees C to 15.0 degrees C/35 degrees F to 59 degrees F) is the most effective immediate treatment of exertional heatstroke, with fatality rates close to zero if the body temperature is brought to less than 40.0 degrees C within 30 minutes after collapse.[41] Full-body cold water immersion should be conducted before patient transport, and should be continued until the body has cooled to a temperature below 38.9 degrees C/102 degrees F. During cold water immersion, body temperature should be continuously monitored with rectal thermometry.

RECOMMENDATION 5: RESPONSIBILITIES OF ATHLETICS PERSONNEL

Physical activity never should be used for punitive purposes. Exercise as punishment invariably abandons sound physiologic principles and elevates risk above any reasonable performance reward.[15] As stated in the 2014-15 NCAA Sports Medicine Handbook, this principle has been reinforced by the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports.[51] All athletics personnel, including both sport and strength and conditioning professionals, as well as primary athletics health care providers, should intervene when they suspect that physical activity is being used as punishment. Although "intent" of punishment may be difficult to establish, punishment workouts use unsound physiological principles, as enumerated in this document.

All training and conditioning sessions should be administered by personnel with demonstrated competency in the safe and effective development and implementation of training and conditioning activities, and with the necessary training to respond to emergency situations arising from those activities.

NCAA bylaws in all three divisions require that strength and conditioning professionals have a strength and conditioning certification from either a nationally accredited[23] or nationally recognized,[21,22] strength and conditioning certification program. Additional NCAA bylaws in Division I[19] require that strength and conditioning professionals must be accompanied by members of the sports medicine staff when conducting voluntary, offseason conditioning sessions. In these situations, NCAA bylaws in both Divisions I and II[19,20] require the sports medicine staff members have unchallengeable authority to cancel or modify workouts for health and safety reasons.

In Division III, where the presence of full-time strength and conditioning professionals may be less frequent, and where as a result, sport coaches may provide strength and conditioning services to all collegiate athletes, legislation is more nuanced. Any sport coach can conduct an in-season workout without needing a strength and conditioning certification. Only strength and conditioning professionals with nationally recognized certifications can conduct voluntary workouts in the offseason, and then only during the regular academic year and only if the voluntary workouts are being conducted for all collegiate athletes.[21] This legislation anticipates a situation when a sport coach is otherwise serving a broader, campus-wide responsibility as strength and conditioning beyond the sport he or she coaches.

The following questions about the strength and conditioning credential should be considered when hiring a strength and conditioning professional:

1. Is the strength and conditioning credential one that reflects attaining relevant competencies in the delivery of strength and conditioning services to collegiate athletes and teams?
2. Is the credential conferred by a certification program/process that is nationally accredited?
3. What are the requisite educational standards required for certification eligibility, and the continuing education requirements required by the certification program?
4. Does the certification require CPR and AED certification?
5. Does the certification require a baccalaureate degree or higher, and is it in a degree field with relevance to the provision of strength and conditioning services?

The current state of credentialing across the strength and conditioning profession makes it difficult to ensure that all strength and conditioning professionals have the requisite competency to safely and effectively conduct conditioning sessions. Many organizations currently offer "strength and conditioning" credentials, though there is significant variability in both the content represented by these credentials and the rigor required to attain them. The complete absence of state regulation further complicates this landscape because there is no clearly established strength and conditioning scope of practice, and therefore, there is no authoritative accounting of the knowledge and skill domains required for the safe and effective practice of a strength and conditioning professional. If carefully considered, the five questions above can assist

institutions in identifying strength and conditioning credentials reflecting the attainment of minimal competence in the provision of strength and conditioning services. Moreover, the U.S. Registry of Exercise Professionals (see usreps.org/Pages/Default.aspx) contains those strength and conditioning professions with certifications from programs accredited by the National Commission for Certifying Agencies. NCCA accreditation is considered a marker of quality for certification programs in the health and/or medical domains.

An additional problem arises through the increasingly close alignment between sport coaches and strength and conditioning professionals, especially in the sport of football. Strength and conditioning professionals frequently are hired by the head football coach, and/or subject to their administrative oversight. This alignment is problematic because it contributes to the perception that strength and conditioning professionals are members of the coaching staff rather than independently credentialed strength and conditioning professionals. Such singular alignment and reporting are not consistent with this document. All strength and conditioning professionals should have a reporting line into the sports medicine or sport performance lines of the institution. This includes sport coaches who have responsibility for providing strength and conditioning services across all sport teams.

RECOMMENDATION 6 | EDUCATION AND TRAINING

Beyond strength and conditioning professionals, each institution should adopt requirements for the education and training of athletics personnel, including as a minimum, but not limited to, strength and conditioning professionals, sport coaches and primary athletics health care providers. Education should focus on preventing catastrophic injury and sudden death in sport. Such education and training should occur annually. Regular education not only can serve to improve the recognition and response skills of those who may be involved in a catastrophic event but also can contribute to a heightened state of organizational mindfulness that contributes to an environment of emergency readiness. Education and prevention strategies should be customized for the unique learning needs of relevant stakeholders and their roles on the athletics team.

Such training should include the following:

1. Foundational information regarding emergency action plans.
2. Environmental monitoring (heat/humidity, lightning).
3. Head and neck injuries.
4. Cardiac arrest.
5. Heat illness and heatstroke.
6. Extertional Rhabdomyolysis.
7. Exertional collapse associated with sickle cell trait.
8. Any exertional or nonexertional collapse.
9. Asthma.
10. Diabetic emergency.
11. Mental health emergency.
12. Proper training principles/principles of periodization.

PREVENTING CATASTROPHIC INJURY AND DEATH IN COLLEGIATE ATHLETES

This checklist will help the athletics health care administrator to ensure that policies are in place and followed, and are consistent with this document, *Interassociation Recommendations: Preventing Catastrophic Injury and Death in Collegiate Athletes*.

1 TRAUMATIC: GENERAL	YES	NO	COMMENTS
In all sports, all practices and competitions adhere to existing ethical standards.	☐	☐	
In all sports, using playing or protective equipment as a weapon is prohibited during all practices and competitions.	☐	☐	
In all practices and competitions, deliberately inflicting injury on another player is prohibited.	☐	☐	
All playing and protective equipment, as applicable, meets relevant equipment safety standards and related certification requirements.	☐	☐	
There is a regularly rehearsed emergency action plan consistent with the Concussion Safety Protocol Checklist for all venues at which practices or competitions are conducted.	☐	☐	
There is a regularly rehearsed emergency action plan consistent with the Concussion Safety Protocol Checklist for all suspected concussions.	☐	☐	
There is a regularly rehearsed emergency action plan consistent with the Concussion Safety Protocol Checklist for all suspected moderate or severe traumatic brain injuries.	☐	☐	
There is a regularly rehearsed emergency action plan consistent with the Concussion Safety Protocol Checklist for all suspected cervical spine injuries.	☐	☐	
Annual education and prevention strategies about catastrophic injuries are provided to all sports coaches.	☐	☐	
Annual education and prevention strategies about catastrophic injuries are provided to all strength and conditioning professionals.	☐	☐	

TRAUMATIC: GENERAL	CONTINUED	YES	NO	COMMENTS
Annual education and prevention strategies about catastrophic injuries are provided to all primary athletics health care providers (i.e., team physicians and athletic trainers).	☐	☐	
Annual education and prevention strategies about catastrophic injuries are provided to all collegiate athletes.	☐	☐	
Annual education and prevention strategies about catastrophic injuries are provided to all athletics administrators.	☐	☐	

2 TRAUMATIC: CONTACT/COLLISIONS HELMETED SPORTS	YES	NO	COMMENTS
All contact/collision, helmeted practices and competitions adhere to existing ethical standards.	☐	☐	
All contact/collision, helmeted practices and competitions adhere to keeping the head out of blocking and tackling.	☐	☐	
All contact/collision, helmeted practices and competitions adhere to prohibiting the use of the helmet as a weapon.	☐	☐	
All contact/collision, helmeted practices and competitions adhere to not deliberately inflicting injury on another player.	☐	☐	
All contact/collision, helmeted practices and competitions adhere to maintaining and certifying helmets to existing helmet safety standards.	☐	☐	

3 NON-TRAUMATIC: GENERAL	YES	NO	COMMENTS
All practices and strength and conditioning sessions adhere to established scientific principles of acclimatization and conditioning.	☐	☐	
Conditioning periods are phased in gradually and progressively to encourage proper exercise acclimatization and to minimize the risk of adverse effects on health.	☐	☐	
The first seven days of any new conditioning cycle are considered a transition period and a time of physiologic vulnerability for athletes.	☐	☐	
Transition periods for athletes include, but are not limited to, returning after an injury or illness.	☐	☐	
Transition periods for athletes include, but are not limited to, returning after school break (e.g., winter, spring, summer).	☐	☐	

NON-TRAUMATIC: GENERAL | CONTINUED	YES	NO	COMMENTS
Transition periods for athletes include, but are not limited to, beginning as a delayed start.	☐	☐	
Training and conditioning sessions are appropriately calibrated and include limitations on total volume and intensity of activity, especially during the first four days of transition periods.	☐	☐	
All workouts have a written plan that is exercise science-based, physiologically sport-specific, and tailored to the individual.	☐	☐	
Workout plans are approved by a credentialed strength and conditioning professional, or the responsible sport coach if a strength and conditioning professional is not available at the institution.	☐	☐	
Components of the workout plan include volume, intensity, mode and duration.	☐	☐	
The activity location is stated in the workout plan to accommodate venue-specific emergency action planning.	☐	☐	
Workout plans are reproducible upon request and shared with the primary athletics health care providers (team physician and athletic trainer) before the session in which they are to be used.	☐	☐	
Modification due to hazardous environmental conditions, scheduling considerations, etc., is supported. The amended workout plan maintains the above principles.	☐	☐	
Exercise never is used for punitive purposes.	☐	☐	
Educational background, sport experience and credentialing are verified for all strength and conditioning professionals.	☐	☐	
All strength and conditioning professionals have a reporting line into the sports medicine or sport performance lines of the institution.	☐	☐	
Emergency action plans are developed and rehearsed annually for all venues in which practices or competitions are conducted.	☐	☐	
Emergency action plans are developed and rehearsed annually for head and neck injuries.	☐	☐	
Emergency action plans are developed and rehearsed annually for cardiac arrest.	☐	☐	
Emergency action plans are developed and rehearsed annually for exertional heat illness and heat stroke.	☐	☐	
Emergency action plans are developed and rehearsed annually for exertional rhabdomyolysis.	☐	☐	

NON-TRAUMATIC: GENERAL | CONTINUED	YES	NO	COMMENTS
Emergency action plans are developed and rehearsed annually for exertional collapse associated with sickle cell trait.	☐	☐	
Emergency action plans are developed and rehearsed annually for any exertional or non-exertional collapse.	☐	☐	
Emergency action plans are developed and rehearsed annually for asthma.	☐	☐	
Emergency action plans are developed and rehearsed annually for diabetic emergency.	☐	☐	
Strength and conditioning venues have emergency action plans specific to the venue, sport and circumstances.	☐	☐	
The institution has adopted requirements for the annual education and training for the prevention of sudden death in sport for strength and conditioning professionals.	☐	☐	
The institution has adopted requirements for the annual education and training for the prevention of sudden death in sport for sport coaches.	☐	☐	
The institution has adopted requirements for the annual education and training for the prevention of sudden death in sport for athletic trainers.	☐	☐	
The institution has adopted requirements for the annual education and training for the prevention of sudden death in sport for team physicians.	☐	☐	
The institution has adopted requirements for the annual education and training for the prevention of sudden death in sport for collegiate athletes.	☐	☐	
The institution has adopted requirements for the annual education and training for the prevention of sudden death in sport for athletics administrators.	☐	☐	

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APPENDIX A
2016 SAFETY IN COLLEGE FOOTBALL SUMMIT AGENDA

AGENDA

National Collegiate Athletic Association
Safety in College Football Summit

Orlando, Florida — February 10-11, 2016

DAY 1

1. **Welcome and summit overview. (Scott Anderson and Brian Hainline)**

2. **Topic 1: Sensor and clinical data regarding football practice and head exposure.**
   a. Campus research. (Stefan Duma, Thomas Druzgal, Jacob Marucci, Jason Mihalik)
   b. Big 12 research. (Scott Anderson, Allen Hardin)
   c. Roundtable discussion and report out.
   d. Referendum: Year-round football practice contact.

3. **Topic 2: Catastrophic injury in football.**
   a. Traumatic. (Kevin Guskiewicz)
   b. Nontraumatic. (Scott Anderson, Doug Casa)
   c. Roundtable discussion and report out.
   d. Referendum: Action plan for mitigating catastrophic injury in football.

4. **Topic 3: Diagnosis and management of sport-related concussion guidelines.**
   a. Guidelines overview. (Brian Hainline, Scott Anderson)
   b. Concussion diagnosis and management update: New data from Concussion Assessment, Research and Education Consortium. (Steven Broglio, Thomas McAllister, Michael McCrea)
   c. Re-examining concussion treatment: Agreements from the TEAM meeting? (Anthony Kontos)
   d. Roundtable discussion and report out.
   e. Referendum: Diagnosis and management of sport-related concussion.

DAY 2

1. **Opening remarks. (Scott Anderson and Brian Hainline)**

2. **Topic 4: Independent medical care. (Scott Anderson and Brian Hainline)**
   a. Roundtable discussion and report out.
   b. Referendum: Independent medical care.

3. **Topic 5: Interassociation consensus statements.**
   a. Year-round football practice contact.
   b. Catastrophic injury in football.
   c. Diagnosis and management of sport-related concussion.
   d. Independent medical care.

4. **Closing remarks.**

APPENDIX B
2016 SAFETY IN COLLEGE FOOTBALL SUMMIT PARTICIPANTS

Jeff Allen, Head Athletic Trainer, University of Alabama (attending on behalf of Nick Saban)

Scott Anderson, College Athletic Trainers' Society, University of Oklahoma

Doug Aukerman, Pac-12 Conference

Julian Bailes, M.D., Congress of Neurological Surgeons, American Association of Neurological Surgeons

Stevie Baker-Watson, Director of Athletics, DePauw University

Brad Bankston, Commissioner, Old Dominion Athletic Conference

Karl Benson, Commissioner, Sun Belt Conference

Bob Boerigter, Commissioner, Mid-America Intercollegiate Athletics Association

Bob Bowlsby, Commissioner, Big 12 Conference; Chair, Football Oversight Committee

Matthew Breiding, Centers for Disease Control and Prevention

Steve Broglio, M.D., Principal Investigator, CARE Consortium, University of Michigan

William Bynum, President, Mississippi Valley State University

Jeff Bytomski, D.O., American Osteopathic Academy of Sports Medicine

Carolyn Campbell-McGovern, The Ivy League

Doug Casa, Ph.D., Consortium Director, Division on Exertional Injury, National Center for Catastrophic Sport Injury Research; Chief Executive Officer, Korey Stringer Institute; Director, Athletic Training Education, University of Connecticut

Bob Casmus, Committee on Competitive Safeguards and Medical Aspects of Sports, Catawba College

Scott Caulfield, National Strength and Conditioning Association

Randy Cohen, National Athletic Trainers' Association

Bob Colgate, National Federation of State High School Associations

Dawn Comstock, Associate Professor, University of Colorado, Denver

Kevin Crutchfield, M.D., American Academy of Neurology

Ty Dennis, Division II Student-Athlete Advisory Committee, Minnesota State University, Mankato

Jon Divine, M.D., President, American Medical Society for Sports Medicine

Tom Dompier, Ph.D., President, Datalys Center for Sports Injury Research and Prevention

Jason Druzgal, M.D., Neuroradiologist, University of Virginia

Stefan Duma, Ph.D., Director, School of Biomedical Engineering and Sciences, Virginia Polytechnic Institute and State University

Ruben Echemendia, Ph.D., President, Sports Neuropsychology Society

Brent Feland, M.D., Collegiate Strength and Conditioning Coaches Association

Scott Gines, Director of Athletics, Texas A&M University-Kingsville

Kevin Guskiewicz, Ph.D., University of North Carolina, Chapel Hill

Allen Hardin, Senior Associate Athletics Director, University of Texas at Austin

Steven Hatchell, President, National Football Foundation

Bill Heinz, Chair, Sports Medicine Advisory Committee, National Federation of State High School Associations

Jaime Hixson, Associate Commissioner, Mountain West Conference

Peter Indelicato, American Orthopaedic Society for Sports Medicine

Nick Inzerello, Senior Director, Football Development, USA Football

Jay Jacobs, Division I Strategic Vision and Planning Committee, Auburn University

Chris Jones, Division I Football Oversight Committee (proxy), University of Richmond

Kerry Kenny, Assistant Commissioner, Big Ten Conference

Zachary Kerr, Director, Datalys Center for Sports Injury Research and Prevention

Anthony Kontos, Ph.D., Assistant Research Director, Sports Medicine Concussion Program, University of Pittsburgh Medical Center

William Lawler, Southeastern Conference

Josephine Lee, Board Member, College Athletic Trainers' Society

Donald Lowe, Board Member, College Athletic Trainers' Society

Jack Marucci, Louisiana State University

Thomas McAllister, M.D., Principal Investigator, CARE Consortium

Michael McCrea, Ph.D., Principal Investigator, CARE Consortium

William Meehan, M.D., American Academy of Pediatrics

Jason Mihalik, Ph.D., University of North Carolina, Chapel Hill

Bob Murphy, Board Member, College Athletic Trainers' Society

Bob Nielson, Chair, NCAA Football Rules Committee

Scott Oliaro, Board Member, College Athletic Trainers' Society

Kene Orjioke, Division I Student-Athlete Advisory Committee, University of California, Los Angeles

Steve Pachman, J.D., Montgomery McCracken

Julie Cromer Peoples, Senior Woman Administrator, University of Arkansas, Fayetteville

Sourav Poddar, M.D., American College of Sports Medicine

Kayla Porter, Division III Student-Athlete Advisory Committee, Frostburg State University

Rogers Redding, Secretary-Rules Editor, NCAA Football Rules Committee

Yvette Rooks, Board Member, College Athletic Trainers' Society

Eric Rozen, Board Member, College Athletic Trainers' Society

Scott Sailor, President, National Athletic Trainers' Association

Jon Steinbrecher, Commissioner, Mid-American Conference

Ken Stephens, National Operating Committee on Standards for Athletic Equipment

Edward Stewart, Senior Associate Commissioner, Big 12 Conference

Michael Strickland, Senior Associate Commissioner, Atlantic Coast Conference

Grant Teaff, Executive Director, American Football Coaches Association

Buddy Teevens, Coach, Dartmouth College

James Tucker, M.D., Board Member, College Athletic Trainers' Society

Steve Walz, Associate Director of Athletics, University of South Florida

Alfred White, Senior Associate Commissioner, Conference USA

STAFF PARTICIPANTS

Brian Burnsed, Associate Director, Communications

Dawn Buth, Associate Director, Sport Science Institute

Cassie Folck, Coordinator, Sport Science Institute

Brian Hainline, Chief Medical Officer, NCAA

Kathleen McNeely, Chief Financial Officer, NCAA

Terrie Meyer, Executive Assistant, Sport Science Institute

John Parsons, Director, Sport Science Institute

Chris Radford, Associate Director, Public and Media Relations

Stephanie Quigg, Director, Academic and Membership Affairs

APPENDIX C
ENDORSING ORGANIZATIONS

The following organizations have endorsed this document:

- American Association of Neurological Surgeons
- American Medical Society for Sports Medicine
- American Orthopaedic Society for Sports Medicine
- American Osteopathic Academy of Sports Medicine
- College Athletic Trainers' Society
- Collegiate Strength and Conditioning Coaches Association
- Congress of Neurological Surgeons
- Korey Stringer Institute
- National Athletic Trainers' Association
- National Strength and Conditioning Association
- National Operating Committee for Standards on Athletic Equipment
- Sports Neuropsychology Society

The following organization has affirmed the value of this document:

- American Academy of Neurology


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CONCUSSION SAFETY PROTOCOL CHECKLIST

Below is a checklist* that will help the athletics health care administrator ensure that the member school's concussion safety protocol is compliant with the Concussion Safety Protocol Legislation. This checklist, which has been recommended by the NCAA Concussion Safety Advisory Group and prescribed by the NCAA Committee on Competitive Safeguards and Medical Aspects of Sport, provides a foundation for member school concussion safety protocols that are important to clinicians and stakeholders who manage concussion and head injury in collegiate athletes. The checklist is not intended as a clinical practice guideline or legal standard of care and should not be interpreted as such. This checklist serves as a guide and, as such, is of a general nature, consistent with the reasonable practice of the healthcare professional. Individual treatment will depend on the facts and circumstances specific to each individual case.

Please do not hesitate to reach out to the NCAA Sport Science Institute at ssi@ncaa.org if you have any questions or concerns.

Pre-Season Education:

Education management plan that specifies:

Institution has provided and allowed an opportunity to discuss concussion education material (e.g., NCAA concussion education fact sheet) or other applicable material annually to the following parties:

Student-athletes

Coaches

Team physicians

Athletic trainers

Directors of athletics

Other personnel involved in student-athlete health and safety decision making.

Each party provides a signed acknowledgement of having reviewed and understood the concussion material.

CONCUSSION SAFETY PROTOCOL CHECKLIST

Pre-Participation Assessment:

Pre-participation management plan that specifies:

- ☐ Documentation that each NCAA student-athlete has received a pre-participation baseline concussion assessment at the member institution that addresses:
  - ☐ History of concussion or brain injury, neurologic disorder, and mental health symptoms and disorders.
  - ☐ Symptom evaluation
  - ☐ Cognitive assessment
  - ☐ Balance evaluation
  - ☐ Team physician determines pre-participation clearance and/or the need for additional consultation or testing. *

    **Consider a new baseline concussion assessment six months or beyond for any NCAA student-athlete with a documented concussion, especially those with complicated or multiple concussion history.*

CONCUSSION SAFETY PROTOCOL CHECKLIST

Recognition and Diagnosis of Concussion:

Recognition and diagnosis of concussion management plan that specifies:

- ☐ Medical personnel with training in the diagnosis, treatment and initial management of acute concussion must be "present" at all NCAA competitions in the following contact/collision sports: basketball; equestrian; field hockey; football; ice hockey; lacrosse; pole vault; rugby; skiing; soccer; wrestling. To be present means to be on site at the campus or arena of the competition. Medical personnel may be from either team or may be independently contracted for the event.

- ☐ Medical personnel with training in the diagnosis, treatment and initial management of acute concussion must be "available" at all NCAA practices in the following contact/collision sports: basketball; equestrian; field hockey; football; ice hockey; lacrosse; pole vault; rugby; skiing; soccer; wrestling. To be available means that, at a minimum, medical personnel can be contacted at any time during the practice via telephone, messaging, email, beeper or other immediate communication means. Further, the case can be discussed through such communication, and immediate arrangements can be made for the athlete to be evaluated.

- ☐ Any student-athlete with signs/symptoms/behaviors consistent with concussion:

    - ☐ Must be removed from practice or competition for evaluation.

    - ☐ Evaluation must be by an athletic trainer or team physician (or physician designee) with concussion experience.

    - ☐ Must be removed from practice/play for that calendar day if concussion is confirmed or suspected.

    - ☐ May only return to play the same day if concussion is no longer suspected.

CONCUSSION SAFETY PROTOCOL CHECKLIST

Initial Suspected Concussion Evaluation:

Initial suspected concussion evaluation management plan that specifies:

- ☐ Clinical assessment for cervical spine trauma, skull fracture, intracranial bleed and catastrophic injury.
- ☐ Symptom assessment.
- ☐ Physical and neurological exam
- ☐ Cognitive assessment
- ☐ Balance exam

CONCUSSION SAFETY PROTOCOL CHECKLIST

Post-Concussion Management:

Post-concussion management plan that specifies:

- ☐ Activation of emergency action plan*, including immediate assessment for any of the following scenarios:

  If performed, Glasgow Coma Scale <13 on initial assessment, or GCS <15 at 2 or more, post initial assessment

  - ☐ Prolonged loss of consciousness.
  - ☐ Focal neurological deficit suggesting intracranial trauma
  - ☐ Repetitive emesis.
  - ☐ Persistently diminished/worsening mental status or other neurological signs/symptoms.
  - ☐ Spine injury.

  **Emergency action plan may require transportation for further medical care.*

- ☐ Mechanism for serial evaluation and monitoring following injury.
- ☐ Documentation that post-concussion plan of care was communicated to both student- athlete and another adult responsible for the student-athlete, in oral and/or written form.

Re-evaluation by a physician for a student-athlete with atypical presentation or persistent symptoms in order to consider additional diagnoses, * best management options, and consideration of referral.

**Additional diagnoses include, but are not limited to:*

- *Fatigue and/or sleep disorder.*
- *Migraine or other headache disorders.*
- *Mental health symptoms and disorders.*
- *Ocular dysfunction.*
- *Vestibular dysfunction.*
- *Cognitive impairment.*
- *Autonomic dysfunction.*

CONCUSSION SAFETY PROTOCOL CHECKLIST

Return-to-Learn:

Return-to-learn management plan that specifies:

- ☐ Identification of a point person within athletics who will navigate return-to-learn with the student-athlete.
- ☐ Identification of a multi-disciplinary team* that will navigate more complex cases of prolonged return-to-learn:

  **Multi-disciplinary team may include, but not be limited to:*

  - *Team physician.*
  - *Athletic trainer.*
  - *Psychologist/counselor.*
  - *Neuropsychologist consultant.*
  - *Faculty athletics representative.*
  - *Academic counselor.*
  - *Course instructor(s).*
  - *College administrators.*
  - *Office of disability services representatives.*
  - *Coaches*.

- ☐ Individualized initial plan that includes return to classroom/studying as tolerated.
- ☐ Re-evaluation by team physician (or their designee) if concussion symptoms worsen with academic challenges.

CONCUSSION SAFETY PROTOCOL CHECKLIST

- ☐ Modification of schedule/academic accommodations, as indicated, with help from the identified point-person.
- ☐ Re-evaluation by team physician and members of the multi-disciplinary team, as appropriate, for student-athlete with atypical presentation or persistent symptoms lasting longer than two weeks.
- ☐ Engaging campus resources for cases that cannot be managed through schedule modification/academic accommodations.
    - ☐ Such campus resources must be consistent with ADAAA, and include at least one of the following:
        - ☐ Learning specialists.
        - ☐ Office of disability services.
        - ☐ ADAAA office.

CONCUSSION SAFETY PROTOCOL CHECKLIST

Return-to-Sport:

Return-to-Sport management plan that specifies:

- ☐ Final determination of unrestricted return-to-sport is from the team physician or medically qualified physician designee.

- ☐ Each NCAA student-athlete with concussion must undergo a supervised stepwise progression* management plan by a health care provider with expertise in concussion that specifies:

    - ☐ Symptom-limited activity.
    - ☐ Light aerobic exercise without resistance training.
    - ☐ Sport-specific exercise and activity without head impact.
    - ☐ Non-contact practice with progressive resistance training.
    - ☐ Unrestricted training.
    - ☐ Unrestricted return-to-sport. **

**It is typical for each step to be ≥ 24 hours.*

***Unrestricted return-to-sport should not occur prior to unrestricted return-to-learn for injuries occurring while the athlete is enrolled in classes.*

CONCUSSION SAFETY PROTOCOL CHECKLIST

Limiting Exposure to Head Trauma:

☐ Limiting head trauma exposure in a manner consistent with Interassociation Recommendations: Preventing Catastrophic Injury and Death in Collegiate Athletes, For example:

- *All practices and competitions adhere to existing ethical standards*
- *Using playing or protective equipment (including the helmet) as a weapon is prohibited during all practices and competitions.*
- *In all practices and competitions, deliberately inflicting injury on another player is prohibited.*
- *All playing and protective equipment (including helmets), as applicable, meet relevant equipment safety standards and related certification requirements.*
- *All contact/collision, helmeted practices and competitions adhere to keeping the head out of blocking and tackling.*

CONCUSSION SAFETY PROTOCOL CHECKLIST

Compliance Certification*
Academic Year 2020-21

CLEMSON UNIVERSITY

Concussion Management Plan
By signing and dating this form, I hereby acknowledge, on behalf of the institution identified above, that for the 2020-21 academic year, the attached ***Clemson University*** Concussion Safety Protocol is consistent with the NCAA Concussion Safety Protocol Checklist and otherwise fulfills the requirements of all applicable NCAA Concussion Management Plan legislation.

Required Signature
Athletics Health Care Administrator

Print Name: _____

Sign: _____

Date: _____

Optional Signature**

Print Name: ___

Sign: ___

Date: ___

Optional Signature**

Print Name: _____

Sign: _____

Date: _____

Optional Signature**

Print Name: ___

Sign: ___

Date: ___

** *The form allows for additional optional signatures to accommodate conference or institutional signature requirements beyond the signature required by NCAA legislation.*