UNIVERSITY OF CINCINNATI ATHLETICS
CONCUSSION MANAGEMENT POLICY

SUMMARY
The University of Cincinnati Athletics concussion management policy was developed by the University of Cincinnati Sports Medicine Department (UCSMD). The policy provides every student-athlete with the best possible medical care. It is based on the National Collegiate Athletic Association (NCAA) and the Big 12 Conference (Big 12) guidelines. It defines concussion as any brain function alteration following a forceful blow to the head or body. It provides a definition of concussion, and the procedure for determining the severity of a concussion is explained. It also provides a list of the stakes in the policy, and a list and description of the staff required to provide medical care for student-athletes.

PURPOSE
The University of Cincinnati Sports Medicine Department (UCSMD) provides every student-athlete with the best possible medical care. Per the National Collegiate Athletic Association (NCAA) and the Big 12 Conference (Big 12) guidelines, the UCSMD has developed this Concussion Management Policy to assist the University of Cincinnati's Department of Athletics (Athletics Department) with the prevention, recognition, evaluation, and treatment of concussions, sports-related concussions (SRC), mild traumatic brain injury (MTBI) and traumatic brain injury (TBI).

STAKEHOLDERS		
UCSMD	Coaches	Student-Athlete Support Services
Student-Athletes	Athletics Department Administration	Risk Management

DEFINITION
Concussion: Any brain function alteration following a forceful blow to the head or body. Keep in mind, the altered brain function may not be accompanied by more easily recognized, acute symptoms such as temporary loss of consciousness (LOC), post-traumatic amnesia (PTA), or confusion. Many concussion injuries do not present with these easily recognizable initial symptoms and may instead present with a variable combination of less easily recognized cognitive deficits; autonomic dysfunction; neck pain; balance issues; fatigue or sluggishness; emotional changes; ocular-mechanic findings or blurred vision; all in addition to the as expected, acute headache.

To remember to thoroughly evaluate each suspected sports-related concussion injury (SRC) in UC (University of Cincinnati) (University of Cincinnati) (University of Cincinnati) athletes, our group has developed and utilized the acronym **CABLES (Cognitive, Autonomic, Balance, Low Energy, emotional, Somatic)**: (***cognitive, autonomic, balance, low energy, emotional, somatic***). Using the CABLES acronym is an easy-to-remember method to quickly determine if an SRC has occurred and how to best initiate management and eventual return to play.

SRC SEVERITY GRADING
In the interest of individualized diagnosis and assessment, UCSMD does not grade the severity of SRCs. Current best practices may apply a severity of "grade" of injuries when there has been a complete resolution of symptoms. It is currently thought by the scientific community that the seriousness of SRC is most related to the duration of post-injury symptoms, which temporarily impair a return to normal activities.

UCSMD INDEPENDENT MEDICAL AUTHORITY

Per the NCAA Sports Science Institute (2016) "Interassociation Consensus: Independent medical care for college student-athletes: best practices" and the ACSM (American College of Sports Medicine) Team Physician Consensus Statement: 2013 update, the UCSMD staff member has the "*unchallengeable, autonomous authority of primary athletics healthcare providers to determine medical management and return-to-play decisions and becomes the linchpin for the independent medical care of student-athletes. Importantly, this linchpin in college sports is the team effort of physicians and athletic trainers, with the ultimate medical reporting authority being the team physician*." The UCSMD team of providers will have the final authority to remove a student-athlete from participation and the final authority to return a student-athlete to return-to-participation (RTP) and return-to-learn (RTL) activities.

To preserve the independent medical authority of the UCSMD staff, UC coaches **may not** serve as the primary supervisor for any UCSMD employee or have hiring, retention, or dismissal authority over any UCSMD employee.

EVENT & PRACTICE STAFFING REQUIREMENTS

Medical personnel with training in the diagnosis, treatment, and initial management of acute concussion must be present at all NCAA varsity competitions in the following contact/collision sports: **basketball, baseball, football, diving lacrosse, pole vault, soccer, and volleyball**. To be present means to be on-site at the campus or arena of the competition. Medical personnel may be from either team or independently contracted for the event.

Medical personnel trained in the diagnosis, treatment, and initial management of acute concussion must be "available" at all NCAA varsity practices in the following contact/collision sports: **baseball; basketball; diving; football; lacrosse; soccer; pole vaulting; volleyball.** 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 direct arrangements can be made for the athlete to be evaluated.

ANNUAL PRE-SEASON EDUCATION OF STUDENT-ATHLETES, COACHES & STAFF

UCSMD will provide annual education sessions to all student-athletes, coaches, team physicians, athletic trainers, and Department of Athletics administrators involved in NCAA student-athlete health and safety decision-making before participation regarding SRCs. As part of their education, participants will receive the applicable **NCAA Concussion Fact Sheet** and similar applicable material. They must sign and acknowledge that they have been provided, read, discussed, and understood the concussion education material. All student-athletes are educated to reduce their head injury exposures as outlined by the **Interassociation Recommendations: Preventing Catastrophic Injury and Death in College Athletics.**

PRE-PARTICIPATION ASSESSMENT OF STUDENT-ATHLETES

As part of their Pre-Participation Examination, and as otherwise determined by the team physician, all NCAA student-athletes must receive baseline SRC testing as follows:

ALL ATHLETES WILL REPORT ANY HISTORY OF:

- Concussion, SRC, Mild traumatic brain injury (MTBI) or Traumatic brain injury (TBI)
- Neurologic disorders (i.e., seizures)
- Mental health symptoms or clinical diagnosis

ALL ATHLETES WILL COMPLETE A BASELINE SCAT 6 EXAM, WHICH INCLUDES

- Athletic injury history
- Signs/Symptoms evaluation
- Cognitive (SAC) assessment
- Balance (BESS) evaluation

The team physician determines a student-athlete's initial participation status and needs additional consultations or testing for all medical conditions, including a recent history of SRC or Post–Concussion Syndrome.

SRC MANAGEMENT PLAN

Step 1: Identification of SRC

Identifying an SRC is the responsibility of several parties, including, but not limited to the injured student-athlete, athletic trainers, physicians, other game officials, student-athletes, coaches, and administrators. However, official concussion diagnosis must come from the team physician or their medically qualified designee with experience in the diagnosis of concussions.

The following signs and symptoms may indicate an SRC:

- Physical signs: lying motionless, loss of consciousness, slow to get up, clutching head, appearing dazed and confused or stunned, uncoordinated movements, or appearing dizzy, a vacant stare.
- Cognitive changes: amnesia, feeling mentally "foggy," feeling slowed down, difficulty concentrating, difficulty remembering, forgetful of recent information and conversations, confusion about current events, answering questions slowly.
- New symptoms: headache, nausea, vomiting, vision problems, dizziness, sensitivity to light or noise, ringing in ears, numbness, or tingling, feeling "out of it" or "foggy."
- Balance problems or incoordination,
- Neck pain. Exertional or exercise intolerance with worsened symptoms
- Emotional inappropriate for the moment: irritable, sad, nervous, irrational, angry, depressed, laughing.
- Fatigued appearance or new symptoms: drowsiness (or if delayed presentation), sleeping more than usual, sleeping less than expected, difficulty falling asleep.

If a student-athlete, teammate, coach, official, or member of UCMSD identifies ANY signs, symptoms, or behaviors consistent with a suspected SRC/concussion the student-athlete must exit play and be evaluated on the sideline or in the locker room by a member of the UCSMD before returning to participation. *If a concussion is confirmed or suspected, the student-athlete must be removed from practice/competition/academics for that calendar day.*

Football only: 2-way communication radios will be supplied on game day for pertinent UCSMD staff, UC Mobile Care (EMS (Emergency Medical Services)), and the visiting team representative. These individuals are tasked with finding possible concussions during competition. Additionally, each institution's medical staff will meet 30-60 minutes before kickoff to discuss the Emergency Action Plan (i.e., EMS location, emergency transportation, hospital, etc.) and x-ray/MRI availability. Home UCSMD staff will meet with UC Mobile Care annually and review protocols before each competition.

Step 2: Suspected SRC and SRC Management

As included within all venues, Emergency Action Plans The on-field/court evaluation of the student-athlete should consist of an assessment of circulation, airway, and breathing ("CAB"), followed by an assessment for cervical spine trauma skull fracture, intracranial bleed, or other catastrophic injuries. If signs of life-threatening or continually deteriorating damage are present, a member of the UCSMD will begin appropriate on-field management.

The following **significant concussion symptoms require activation of the local Emergency Action Plan** and emergent transportation to the nearest Level One Trauma Center by ambulance or air ambulance. Such an injury may be diagnosed as a TBI, rather than MTBI or SRC if:

- Initial Glasgow Coma Scale <13, *or does not follow motor commands (best motor GCS < 6)*
- Prolonged loss of consciousness (longer than one minute)
- Focal neurological deficit suggesting intracranial trauma.
- Repetitive, post-injury emesis
- Persistently diminished/worsening mental status or other neurological signs/symptoms.
- Potential spine injury

Once it is determined that the injured athlete does not have the complex symptoms listed above - the student-athlete is safely & carefully removed from the field/court. The UCSMD will follow C3Logix protocol (Appendix A), UCSMD will administer a thorough physical and neurological examination and an eventual SCAT6 evaluation. If symptoms dictate, the student-athlete may be moved to the locker room or designated area to avoid bright lights, loud noises, or other distractions causing acute symptoms to worsen. *If video of the injury is available, analysis of the video from the actions causing the symptoms can also be used for more information leading to a working diagnosis of concussion.*

The athletic trainer or team physician should monitor a student-athlete who has been removed from participation according to this policy at periodic intervals from the time of the injury until the student-athlete's condition completely clears or the student-athlete is referred for further care.

Step 3: Post-event Suspected Concussion/Concussion Management

The initial 24 hours of observation are needed. After a thorough evaluation, if the injured student-athlete has a suspected diagnosis of SRC, the injured student-athlete should be released to home with a designated, responsible adult (18 years or older) who will stay with the student-athlete for 24 hours after the injury. The student-athletes and their designated, responsible adult must be provided with and sign the **Concussion Take Home Sheet** after being given proper instruction by a member of the UCSMD.

Step 4: Serial Management of Diagnosed Concussion by Team Physician or Medically Qualified Designee Within the first 24-hrs of injury, the UCSMD member must start the initial post-injury SCAT6 test to the student-athlete to evaluate changes in cognition and symptoms. The cadence of serial SCAT6 testing is at the discretion of the team physician. UCSMD must also repeat the sport-specific baseline tests to the student-athlete within 24-48 hours after the initial concussion diagnosis, as dictated/recommended by the team physician.

Within 24-72 hrs. of injury, the team physician must evaluate the student-athlete.
The primary responsibilities of the UC Team Physician will be:

(1) Evaluate the injured athlete within 24-72 hours after the initial SRC, MTBI, or TBI diagnosis.
(2) Decide when the athlete may enter the concussion/SRC recovery protocol.
(3) Decide if and at what level the athlete will enter the return-to-learn protocol.
(4) Along with the specific team Athletic Trainer (AT), will provide detailed information on the athlete's injury and return-to-learn stage to the athlete's academic advisor.
(5) Along with the specific team AT, monitor the athlete's progress within the recovery protocol.
(6) When the athlete has achieved completion of the recovery protocol and is symptom-free (PCSSx < 10 or baseline), the team physician will provide clearance for the student-athlete to full return-to-participation.
(7) If a student-athlete has any of the following: an atypical initial injury presentation, persistent concussion symptoms, or a reoccurrence of symptoms during the return to participation progression, the team physician must re-evaluate and will also consider a broader differential diagnosis.
(8) When felt to be medically necessary, the team physician will initiate referral of the athlete to additional specialists (independent neurology consultant, neurologist, psychologist, etc.).

Utilizing the investigational protocol included within the NCAA/DoD Multi-Center Concussion Study, blood samples for biomarkers, when considered clinically appropriate by the physician, *may also be* obtained from the student-athlete at the following post-injury time intervals:

- Within two hours of injury.
- 24-48 hours of injury.
- When symptom-free and ready to begin return-to-participation protocol.
- Seven days after return-to-participation with full activity clearance; and
- Three, six, and twelve months after return to participation with full activity clearance.

CONCUSSION/SRC RECOVERY PROTOCOL

1) **Physical and cognitive rest until asymptomatic**. If asymptomatic at the current level, the student-athlete may continue to proceed to the next step with adequate rest. If symptoms reappear, the student-athlete should be returned to the previous asymptomatic level and try to progress again after being given sufficient rest time.

2) **Light Aerobic Exercise**: *To generally begin within one day of the SRC-event,* walking, swimming, or stationary cycling, keeping intensity <70% MPHR, for at least 15 minutes. No resistance training is permitted.

3) **Sports-Specific Exercises** If asymptomatic with light aerobic exercise, then: sports-specific exercise may begin **without head impact exposure**, such as lifting, running, agility drills.

4) **Non-Contact Training Drills** If asymptomatic with sport-specific activity, then progression to more complex training drills - full-speed agility drills, passing/catching drills, etc. may begin.

5) **Full-Contact practice** If asymptomatic with non-contact drills, then following medical clearance by the team physician, participate in regular training activities.

6) **Unrestricted return to participation** If asymptomatic with full-contact practice, then the student-athlete may return to practice/competition without restrictions.

RETURN-TO-LEARN

A student-athlete with a diagnosed concussion should follow an individualized and stepwise process to return to learning, overseen by the SASS (Student Athlete Support Services) Director of Learning Services. They will work with a multidisciplinary team. Members of the interdisciplinary team may vary depending on the individualized needs of the student-athletes and may include the following: team physician, athletic trainer, licensed psychologist/counselor, neuropsychologist consultant, faculty athletic representative, academic counselor (SASS), course instructors, college administrators, Office of Accessibility Resources, coaches, and SASS Director of Learning Services (the "Multidisciplinary Team").

UCSMD will communicate with academic staff any initiation and change in student-athlete status regarding removal from and return to learning.

RETURN-TO-LEARN PROGRESSION

The Return-to-learn progression involves the gradual return to cognitive activity based on the return/presence of concussion symptoms following cognitive exposure. A student-athlete with a diagnosed concussion may not return- to-learn on the same day as the injury. As the student-athlete completes the return-to-learn progression, academic accommodation may be needed. Examples of such accommodations may include missing class; class schedule changes; and alternative arrangements for tests, assignments, and projects. Some accommodations may require engaging the Office of Accessibility Resources. The SASS may assist the student-athlete in obtaining academic accommodation.

Following the first day of rest, the student-athlete will undergo an individualized plan, compliant with the Americans with Disabilities Act Amendments Act that will include the following:

1) **Initial return to cognitive activity** includes 30-45 minutes of recreational or at-will reading in a controlled setting. If symptoms persist, the student-athlete should remain at home/dorm.
2) As tolerance to reading improves, and there are no additional symptomatic limitations, the student-athlete may **return to one low-level class** (a class that requires little reading/note taking, mathematical work,

physical exertion, etc.). If student-athlete cannot tolerate this activity, they should discontinue and return to a resting environment.

3) If one low-level class is tolerated, **an additional class** may be added the next day. If symptoms worsen or return, the student-athlete must discontinue the steps and return to the previous step.

4) If cognitive activity is tolerated, the student-athlete may **continue daily to add classes** until a full course load is resumed.

If the student-athlete has symptoms of academic challenges that become prolonged or last more than two weeks. In that case, the student-athlete must be re-evaluated by the team physician, who will collaborate with the Multidisciplinary Team as appropriate.

PROLONGED CONCUSSION SYMPTOMS

If the student-athlete's concussion symptoms are persistent and become prolonged, or if there is a reoccurrence of symptoms during the return-to-participation protocol or return-to-learn progression, a neurocognitive assessment and balance re-assessment will be performed. In addition, the student-athlete should have a follow-up consultation with the team physician to consider additional diagnoses including, but not limited to, post-concussion syndrome, sleep dysfunction, migraine or other headache disorders, and mood disorders such as anxiety and depression, or ocular/vestibular dysfunction.

REDUCING EXPOSURE TO HEAD TRAUMA MANAGEMENT PLAN

The University of Cincinnati is committed to protecting the health of and providing a safe environment for its participating NCAA student-athletes. To that end, and per NCAA association-wide policy, UC will limit student-athlete head trauma exposure in a manner consistent with Interassociation Recommendations: Preventing Catastrophic Injury and Death in College Athletes. For example:

- The University of Cincinnati will adhere to existing ethical standards in all practices and competitions.
- The use of protective equipment as a weapon will be prohibited during practices and competitions. Deliberately inflicting injury on another player will be banned from all practices and competitions.
- All playing and protective equipment (including helmets) will meet relevant equipment safety standards and related certifications requirements.
- The University of Cincinnati will keep the head out of blocking and tackling in contact/collision helmeted practices and competition.
- The University of Cincinnati will emphasize education on proper techniques to reduce head impact exposure for all contact and collision sports, with a particular emphasis on the pre-season.

DOCUMENTATION

UCSMD will document using C3Logix and EMR the following information in the student-athlete's medical chart:

- Initial note: timeline of injury, estimated force (high, medium, low, unknown), diagnostic procedures, current plan, etc.
- Follow-up notes, serial assessments, diagnostic tests, presence of signs and symptoms, etc.
- Communication to non-UCSMD staff (coaches, academics, take-home); and
- Any evaluation reports from UCSMD members.

CONCUSSION TAKE HOME SHEET

Name Sport

Date/Time of Injury: Date/Time of Medical Review

At the time of your injury, the UC Sports Medicine Staff examined you for a concussion.
Based on that examination, we are recommending additional precautions.

Contact a UC Sports Medicine Staff member IMMEDIATELY if you notice ANY change in behavior, vomiting/nausea, pain, worsening headache, blurry/double vision, and excessive drowsiness/ dizziness.

If any symptoms progress rapidly, CALL 911, then contact a UC Sports Medicine Staff member.

It is OK to….	Do NOT….
- Ice the head and the neck - Eat a light diet, rich in carbohydrat - Sleep - Rest (held from strenuous activity No need to … - Check eyes with flashlight - Wake up frequently (unless instruc - Test reflexes - Stay in bed	- Drink alcohol - Drive while symptomatic - Take ANY medications unless you are instructed to do so by a member of the UC Sports Medicine Staff - Train or play any sport until medically cleared

If problems or questions arise or exist, please contact a UC Sports Medicine Staff member. Your subsequent follow-up evaluation is:

Date/Time Location

I, the above-listed student-athlete, have read and understood this sheet and will contact a UC Sports Medicine Staff member with any changes in my condition.

Signature: Student Athlete Date

I, the signed "responsible adult," have read and understood this sheet and will contact a UC Sports Medicine Staff member with any changes in the above-listed student-athlete's condition.

Name: Responsible Adult Phone

Signature: Responsible Adult Date

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Appendix A

Upon suspected concussion, at once pull from practice, sport, or game.

Button	Documentation within C³Logix that can be performed during the concussion lifecycle
Assessment	Neurological Performance Screen (AKA Concussion Baseline) **'Assessment'.**
Incident Report	Perform a **'Field Incident'** report if witnessed by a medical professional with 0-24 hours after the event took place.
Incident Report	Perform a **'Clinic Incident'** report if no medical professionals witnessed the event, file as soon as possible after patient reports the incident.
Assessment	You can create a custom workflow **'Assessment'** to perform a 'sideline' or 'acute injury' assessment, SCAT5 workflow is very popular and consists of Graded Symptom Checklist, Standard Assessment of Concussion w/o Delayed Recall, Balance, and Delayed Recall. **YouTube Video link:** https://youtu.be/5KdHmJyrwD0
Assessment	Perform a full C3 Follow Up **'Assessment'** 24-48 hours after the event has taken place to better evaluate which domains are impaired, this can assist with creating a treatment plan.
Assessment	Perform a Daily Symptom Checklist **'Assessment'** to monitor symptoms. Custom workflow, see YouTube link above
Return to Play	If you're documenting days of school missed, accommodations made in class, or attendance, you can document those activities under the **'RTP'** feature.
Return to Play	If you're doing an active recovery like Buffalo Concussion Treadmill Test, you can document your activities under the **'RTP'** feature. You may want to fail phase 1 since they could be symptomatic.
Assessment	A 2nd Full C3 Follow Up **'Assessment'** could be performed 48 hours after the initial full follow-up to monitor the treatment plan. If the athlete is asymptomatic, this assessment could be used to compare with their baseline.
Assessment	Continue a Daily Symptom Checklist **'Assessment'** if symptomatic
Assessment	Perform a 3rd Full C3 Follow Up **'Assessment'** when the athlete becomes asymptomatic or at day 10 post-injury, whichever comes first. At this time if the athlete still has deficits, it may be good practice to refer to a domain specific specialist.
Return to Play	If the patient can progress on the Return to Play phases, you can document all phases, activities, and exertional levels under the **'RTP'** feature.