**CONCUSSION ASSESSMENT & MANAGEMENT**

 **GUIDELINES**

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**University of Vermont Athletic Medicine**

**CENTER FOR HEALTH & WELLBEING**

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**UVM Athletic Medicine**

***Concussion Assessment & Management Guidelines***

**Purpose**

This document outlines the UVM Athletic Medicine Department’s policy regarding the management and care of sport-related concussion. Concussion, a potentially serious consequence of participation in collegiate athletics, is defined as a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces. Concussive injury manifests through a variety of physical, cognitive and behavioral symptoms and proper management is vital in order to prevent serious, and potentially life-threatening, complications. This protocol should be used as a guide for the management of concussion in student-athletes at UVM. It is important to note that not all concussions present in the same way, and each case should be treated individually. A team-approach involving the student-athlete, certified athletic trainer (ATC) and team physician should be used to determine when it is safe for a student-athlete to return to activity, as well as the classroom. Recommendations for this protocol were adopted from the NATA Bridge Statement: Management of Sport-Related Concussion (2024), the Consensus Statement on Concussion in Sport: the 6th International Conference on Concussion in Sport, Amsterdam (October 2022), NESCAS Medical Aspects in Sport Committee Statement on Promoting Cognitive Recovery Following Concussion (2014), and recommendations from the NCAA Executive Committee on Concussion Safety.

**Pre-Season Education**

On an annual basis, UVM Certified Athletic Trainers and Team Physicians will provide student-athletes, sport team coaches, athletic directors, and Performance Staff with NCAA concussion fact sheets and/or an educational session regarding sport related concussion. The athletic training staff and team physician will also independently review this information on an annual basis. This session will include discussion on defining concussion, recognizing concussion, action steps if a concussion is suspected, reporting expectations and prevention strategies. All student-athletes will be required to sign an Injury and Illness reporting form (Appendix B) that acknowledges that they were provided with specific educational materials about head injury and concussion, were provided the opportunity to ask questions about the materials, and understand the importance of immediately reporting symptoms of a concussion to the athletic medicine staff.

**Reducing Exposure to Head Trauma**

It is important to emphasize ways to minimize head trauma exposure for all of our student-athletes. As part of the yearly educational session with coaches, performance staff, and athletic department personnel, there will be discussion that focuses on reducing gratuitous contact during practice, taking a ‘safety first’ approach to sport, taking the head out of contact, and coaching and student-athlete education regarding safe play, proper technique and reporting expectations.

**Pre-Participation Medical Clearance and Baseline Testing**

All incoming freshman and other first-time UVM student-athletes will undergo a pre-participation medical clearance process that addresses brain injury and concussion history. For concussion assessment, UVM Athletic Medicine currently uses C3Logix computer based concussion testing. The C3Logix testing incorporates the Standardized Concussion Assessment Tool 6 (SCAT6) assessment, and also includes components of oculomotor testing. Complete C3Logix baseline testing will be performed on all first-year student-athletes. A select portion of the C3Logix baseline test will be updated annually for all returning student-athletes.

During the pre-participation medical clearance process, the team physician will determine clearance and/or the need for additional consultation or testing.

**Injury Evaluation and Care**

The University of Vermont supports contact and collision sports including basketball, field hockey, ice hockey, lacrosse, skiing, soccer, pole vault, and diving. An athletic trainer is either present at practice or available to respond in person within 3-5 minutes for all practices, and present on-site for all NCAA competitions. While skiing practices at Stowe Mountain, an athletic trainer is always available via cell phone to ensure prompt evaluation and/or referral as necessary upon return to campus. Ski patrol is available for immediate management and transport in the event of a more serious brain or spinal column injury.

Concussion should be suspected with the presence of concussive signs or symptoms following injury, or any mechanism of injury involving trauma to the head or neck. If concussion is suspected, the student-athlete should be immediately removed from sports participation until a thorough assessment by an ATC or team physician is completed.

Certified athletic trainers are well educated on the signs and symptoms related to concussion. Symptoms, as well as physical, neurological, cognitive, and behavioral signs, need to be identified. Clinical assessment for cervical spine trauma, skull fracture and intracranial bleed will also occur as part of the initial evaluation. In addition to a standard concussion assessment and examination by the ATC and/or team physician, C3Logix testing may be used to enhance the clinical evaluation of concussive signs. The C3Logix test is recommended to be completed within 24-48 hours post injury. The need for additional repeat testing will be determined by the team physician.

 ***Initial Evaluation and Acute Care***

If concussion is suspected, same calendar day return will **not** be considered, even if a student-athlete demonstrates a full physical and cognitive recovery within 20 minutes of the injury.

Student-athletes should be monitored closely after injury, especially within the first 24 hours, to identify any delayed onset signs and symptoms. This may be achieved by telephone communication (call or text) from the ATC, or by enlisting a peer to help monitor for neurologic decline.

The certified athletic trainer involved in the care of the injured student athlete will provide oral and/or written instructions around care to be followed in the first few days following injury. The ATC will also share this same information with another responsible adult (roommate, friend, coach, etc) to assist with compliance.

***Follow up Care***

In all circumstances where a concussion is suspected, the team physician will be made aware of the situation immediately and routine referral (non-urgent) will occur within one week from onset of injury. Additional follow-up assessments by the team physician will be scheduled if clinically indicated. All student athletes will need to receive clearance from the team physician in order to resume full competition participation. This clearance should be documented by the athletic trainer in the ongoing care note in the patient’s electronic medical record.

A student-athlete should be referred to a physician on the day of injury if they meet any of the following criteria:

* Spine Injury\*
* Glasgow Coma Scale <13\*
* Prolonged loss of consciousness on the field\*
* Amnesia lasting longer than 15 min
* Deterioration of neurologic function\*
* Decreasing level of consciousness\*
* Decrease or irregularity in respirations\*
* Decrease or irregularity in pulse\*
* Increase in blood pressure
* Unequal, dilated, or nonreactive pupils\*
* Cranial nerve deficits
* Any signs or symptoms of associated injuries, spine or skull fracture, or bleeding\*
* Persistent mental status changes: lethargy, difficulty maintaining arousal, confusion, or agitation\*
* Seizure activity\*
* Repetitive vomiting\*

\*Requires that the student-athlete be transported immediately to the nearest emergency department.

**Return to Play**

Return to play will follow the progression outlined in the Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport—Amsterdam, October 2022.

In the case of recurrent concussion, especially repeat concussion within the same season, consideration should be given for a slower progression through the graduated return to play protocol.

Final clearance for full unrestricted sport participation will be determined by the team physician or medically qualified physician designee. The student-athlete may receive final clearance, after completion of the graded return to play protocol.

The injury will be documented in UVM’s electronic health record, which is utilized by the Center for Health and Wellbeing staff, as will all follow-up evaluations, care and treatment. Cases of concussion onset and resolution will be reported to the NCAA annually as mandated by the Arrington Agreement.

**Return to Learn**

Returning to attendance/participation in classes and completing required coursework should also follow a stepwise progression similar to “return to play”. A general guideline for return to learn is as follows:

* No classroom activity on the same calendar day as the concussion
* In addition to limiting classroom activity, cognitive rest during initial recovery includes minimizing “screen time” (computers, cell phones, television), limiting overstimulation (loud sounds, bright lights, travel), and remaining home if light cognitive activity for 30 minutes is not tolerated
* Once 30-45 minutes of light cognitive activity is tolerated without return of concussive symptoms, return to the classroom and academics may be initiated, and advanced in a stepwise manner
* Consider starting with classes of shorter duration, lower intensity, and avoidance of returning on an examination day
* On initial return recommend scheduled 15 minute breaks from classwork after each 30-45 minutes period of cognitive activity
* Progression of return to learn should be individualized for each case, but in general may follow a similar pacing as return to play, with return to full classroom activities over a five day period.
* If concussive symptoms are returning with cognitive activity, a step-back should be taken in addition to reevaluation by the team physician, including but not limited to complete removal from classroom activity and cognitive rest.

The team physician will lead the return to learn process. For all cases of concussion a notification will be sent to Student Accessibility Services (SAS) and the Dean’s Office corresponding to the major in which the student-athlete is enrolled. SAS will work with the student and their Dean’s Office to notify course instructors/professors of the need for academic accommodations, and that completion of coursework and attendance in class may be affected during the recovery process. The student-athlete is ultimately responsible to communicate directly with instructors/professors to create a plan for completing necessary coursework. If a concussion impacts academic attendance for longer than one week, an updated notification with specific academic recommendations will be sent to SAS and the Dean’s Office, as outlined in Appendix C.

A multi-disciplinary team which may include, but not limited to, the following individuals will be formed to assist with more complex cases: team physician, designated ATC, counselor from on campus counseling and psychiatry services, academic advisor, coach, representative from the SAS center, and a neuropsychologist consultant. These cases where symptoms last longer than two weeks should be re-evaluated on a regular basis by the team physician.

**Student-Athlete Disqualification**

***Disqualification from game or practice***

No same calendar day return to play after concussion will be allowed.

***Disqualification for the season***

This topic is controversial and complex. Currently, there are no scientifically validated guidelines that can guide medical decision making on this issue. Without clear-cut answers in the literature, each case will be treated individually. A team approach involving the student-athlete, parents (with permission from the student-athlete), team physician, and ATC will be used to determine the best course of action for the student-athlete and their health and wellbeing.

***Disqualification for the career***

Research has shown that once a student-athlete has suffered a concussion, they are at increased risk for subsequent head injuries. Student-athletes sustaining multiple concussions with recurrent or post-concussion signs and symptoms that last for lengthy periods of time need to be considered for potential disqualification from contact sports. Debate still surrounds the question of how many concussions are enough to recommend ending the player’s career. Retirement from a sport may have significant consequences for the student-athlete. A team approach with shared decision making will be used in each case and each situation will be treated individually.

**Appendix A**

UNIVERSITY OF VERMONT CATAMOUNTS

**INJURY AND ILLNESS REPORTING ACKNOWLEDGEMENT FORM**

I acknowledge that it is my responsibility to assume an active role in my own healthcare. As such, I agree to report all of my injuries and illnesses to the Athletic Medicine – certified athletic trainers and team physician – at the University of Vermont. With the understanding that a true assessment of my physical condition is possible only when full disclosure of symptoms, complaints, and prior injuries is provided, I agree to relate to the Athletic Medicine staff any information I possess that relates to my present condition. I also affirm that I have fully disclosed in writing information regarding prior medical conditions as requested by the Athletic Medicine staff.

I understand that there is a possibility that participation in my sport may inherently result in injury, including a head injury and/or concussion. I have been provided with education on head injuries and understand the importance of immediately reporting symptoms of a head injury/concussion to the athletic medicine staff.

By signing below, I acknowledge that the University of Vermont Athletic Medicine staff has provided me with specific educational materials about head injury and concussion and has provided me with an opportunity to ask questions about these materials.

I understand that information related to my ability to participate in sports will be regularly communicated to coaches.  Any disclosure by the Athletic Medicine staff will be limited to only that information coaches “need to know” about my ability to compete in my sport or event.  Athletic Medicine staff and coaches are bound by the Family Educational Rights and Privacy Act (FERPA) to protect the privacy of my records.

Durable medical equipment (e.g. walking boot, knee brace, ankle brace, crutches, etc.) dispensed by Athletic Medicine at the University of Vermont is contracted through SurgiCare.  I understand that should I need durable medical equipment, Athletic Medicine staff will share insurance and health information with SurgiCare that is required to submit a claim, and SurgiCare will bill my personal insurance for equipment provided to me. I may incur a charge for this equipment based on the limits of my personal insurance coverage.

I have read the above and agree that the statements are accurate.

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Signature of student-athlete Date

 **UVM Athletic Medicine**

 

**Appendix B**

**Link to NCAA Concussion Safety Information for Student-Athletes**

<http://www.ncaa.org/sites/default/files/2017SSI_ConcussionFactSheet_StudentAthletes_20170721.pdf>

**Appendix C**

**ACADEMIC SUPPORT RECOMMENDATIONS**

# Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date of Evaluation:\_\_\_\_\_\_\_\_\_\_\_\_\_

The student named above has suffered a concussion and is currently under the care of Student Health Services. He/she is not permitted to participate in any contact sport activity until formally cleared by this clinic.

The following are recommendations for academic support measures. The goal of these recommendations is to reduce the cognitive (thinking) load, thereby minimizing post-concussion symptoms and allow the student to better participate in the academic process during the injury recovery period. Needed measures may vary by course. The student is encouraged to discuss these recommendations and establish appropriate measures with professors/instructors individually for each class, with assistance from Student Accessibility Services (SAS). For concussive symptoms lasting longer than four weeks, formal consultation with Student Accessibility Services (SAS) is required to receive academic support measures.

**\_\_\_\_\_ Testing:** \_\_\_ extra time to complete tests; \_\_\_\_\_ testing in a quiet environment; \_\_\_\_\_ allow testing across multiple sessions; \_\_\_\_\_ reduce length of tests; \_\_\_\_\_ eliminate tests when possible;

\_\_\_\_\_ reformat from free response to multiple choice, or provide cueing (e.g., use of a notecard for helpful formulas). ***Students with concussion have increased memory and attention problems. They will not be able to learn as effectively or quickly as before. Furthermore, highly demanding activities like testing can significantly raise symptoms (e.g., headache, fatigue) which can in turn make testing more difficult****.*

**\_\_\_\_\_ Note taking:** Allow student to obtain class notes or outlines ahead of time to aid organization and reduce multi-tasking demands. If this is not possible, allow the student photocopied notes from another student. ***Note taking may be difficult due to impaired multitasking abilities and increased symptoms.***

**\_\_\_\_\_ Workload reduction:** \_\_\_ reduce overall amount of make-up work, class work, and homework (we typically recommend 50-75%, though may vary by class); \_\_\_shorten tests and projects. ***It takes a concussed student much longer to complete assignments due to increased memory problems and decreased speed of learning.*** ***Recovery can be delayed when a student “pushes through” symptoms. Therefore, it is recommended that “thinking” or cognitive load be reduced, just as physical exertion is reduced. Examples of how to shorten work might be to reduce the length of essays, have the student do every other problem in a homework assignment, or highlight key concept areas for testing while eliminating testing on less important topics.***

**\_\_\_\_\_ Breaks:** \_\_\_\_ Take breaks as needed to control symptom levels. For example, if headache worsens during class, the student should put his/her head on the desk to rest. For worse symptoms, they may need to go to the nurse’s office to rest prior to returning to class.

**\_\_\_\_\_ Extra Time:** \_\_\_ Allow student to turn in assignments late. ***Students may experience severe symptoms some days/nights and not others. With increased symptoms, students are advised to rest, and therefore may need to turn assignments in late on occasion.***

**Attendance Restrictions:**

 \_\_\_\_\_ Full days as tolerated \_\_\_\_\_ Half–days as tolerated \_\_\_\_\_ Initiate homebound education

\_\_\_\_\_ No school until \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then attempt half / full days as tolerated.

\*\* Full or partial days missed due to post-concussion symptoms should be medically excused.

**Follow-up evaluation and revision of recommendations to occur \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_