



**UNL DEPARTMENT OF ATHLETICS**

800 Stadium Drive, Lincoln, NE 68588-0128

## **University of Nebraska-Lincoln Athletics Concussion Protocol**

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### **Introduction**

The University of Nebraska-Lincoln (UNL) Athletic Department is committed to protecting the health and safety of Husker student-athletes. To this end, and in accordance with NCAA legislation, UNL has adopted the following Concussion Protocol for all Husker student-athletes. This protocol identifies expectations for institutional concussion management practices as they relate to (1) the definition of concussion (both sport and non-sport); (2) independent medical care; (3) preseason education; (4) pre-participation assessment; (5) recognition and diagnosis of concussion; (6) post-concussion management; (7) retirement from sport; and (8) limiting exposure to head trauma.

#### **1. Definition of Concussion**

Per the 6th Concussion in Sport Group (CISG) consensus statement<sup>1</sup>, sport-related concussion (SRC) is defined as:

*“Sport-related concussion is a traumatic brain injury caused by a direct blow to the head, neck or body resulting in an impulsive force being transmitted to the brain that occurs in sports and exercise-related activities. This initiates a neurotransmitter and metabolic cascade, with possible axonal injury, blood flow change and inflammation affecting the brain. Symptoms and signs may present immediately, or evolve over minutes or hours, and commonly resolve within days, but may be prolonged.”*

As not all concussions sustained by Huskers athletes are in the context of sport, the same operational definition (with the exception of “sport and exercise-related activities”) will be used for concussions sustained in a non-sport context. Husker athletes who sustain a concussion in a non-sport context will complete the same RTS & RTL protocols as those who sustain a sport-related concussion.

#### **2. Independent Medical Care**

As required by NCAA Independent Medical Care legislation, team physicians, neuropsychologists, certified athletic trainers, and other appropriately trained health care personnel (HCP) shall have unchallengeable autonomous authority to determine diagnosis, medical management, and return-to-activity decisions, including those pertaining to concussion and head trauma injuries, for all student-athletes.

#### **3. Preseason Education**

All UNL Husker student-athletes will be provided educational material regarding the definition of a concussion, common symptoms of concussion, expected recovery from concussion, and UNL’s concussion protocol. They will then be allowed the opportunity to ask questions regarding the information. They will be required to sign an acknowledgement, on an annual basis and prior to participation, that they have reviewed and understood the concussion education material. As a part of their shared medical responsibility statement, they acknowledge that they have a responsibility to report to a UNL Athletic Medicine health care provider any signs or symptoms of concussion.



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Coaches and athletic trainers (both certified and student/graduate assistants) involved in Husker student-athlete health and safety decision-making will be provided and allowed an opportunity to discuss concussion education material. They will be required to sign an acknowledgement, on an annual basis, that they have been reviewed and understood the concussion education material and understand that they have a responsibility to report any concerns for a student-athlete having experienced a concussion to a team physician or department neuropsychologist.

**4. Pre-Participation Assessment**

Husker student-athletes will undergo a pre-participation baseline concussion assessment upon arrival to campus. This pre-participation assessment will include assessment for the following:

- History of concussion or brain injury, neurological disorder, and mental health symptoms and disorders
- Symptom evaluation (SWAY)
- Cognitive screening (SWAY)
- Balance screening (SWAY)

The department neuropsychologist or team physician will determine pre-participation clearance and any need for additional consultation or testing as it relates to concussion baseline testing.

Annual baseline for returning athletes will consist of a symptom questionnaire and updated head injury history.

**5. Recognition and Diagnosis of Concussion**

HCP with training in the diagnosis, treatment and initial management of acute concussion are present at all NCAA competitions in the following contact/collision sports: football, soccer, pole vault, wrestling, and basketball.

NOTE: To be present means to be on site at the campus or arena of the competition.

HCP with training in the diagnosis, treatment and initial management of acute concussion are available for all NCAA practices in the following contact/collision sports: football, soccer, pole vault, wrestling, and basketball.

NOTE: To be available means that, at a minimum, health care personnel can be contacted at any time during the practice via telephone, messaging, email, beeper or other immediate communication means and that the case can be discussed through such communication, and immediate arrangements can be made for the athlete to be evaluated.

Any Husker student-athlete that exhibits signs, symptoms, or behaviors consistent with concussion-including actual or suspected loss of consciousness, seizure, tonic posturing, ataxia, poor balance, confusion, behavioral changes, and amnesia,- must immediately be removed from practice or competition for evaluation.



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They should be evaluated by a HCP with concussion experience using a thorough, multi-modal assessment. They should not be returned to play the same day unless it can be definitively determined by the HCP that the exhibited signs and symptoms cannot be attributed to a concussion<sup>1</sup>.

Acute, diagnostic evaluation of concussion should include

- A clinical evaluation to rule out any of the “red flags” listed below
- Symptom evaluation (SCAT6 or SWAY)
- Physical/neurological evaluation
- Vestibular/oculomotor screening (VOMS)
- Cognitive screening (SCAT6 or SWAY)
- Balance (SCAT6 or SWAY)

A concussion emergency action plan- including transport for further medical care, if necessary- may be activated for any of the following “red flags”:

- Neck pain or tenderness.
- Seizure or convulsion
- Double vision.
- Loss of consciousness.
- Weakness or tingling/burning in more than one arm or in the legs.
- Deteriorating conscious state.
- Vomiting.
- Severe or increasing headache.
- Increasingly restless, agitated or combative.
- Glasgow Coma Scale Score <15.
- Visible deformity of the skull.
- Prolonged loss of consciousness
- Focal neurological deficit suggesting intracranial trauma
- Persistently diminished/worsening mental status or other neurological signs/symptoms
- Spine injury
- Any other indication of brain trauma more severe than concussion

In cases where there is ambiguity in a concussion diagnosis or there are known co-morbidities that create concussion-like symptoms, the athlete can be put in a 24 hour hold and be re-evaluated the following day. During this 24-hour hold, that athlete cannot participate in any physical athletic activity. They may be allowed to participate in academic or non-physical team activities (such as meetings or team meals) at the discretion of the team physician or department neuropsychologist.



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**6. Post-concussion Management**

For all cases of diagnosed concussion, concussion education and post-concussion plan of care will be communicated to the student-athlete and the student- athlete's athletic trainer. The "UNL Athletic Medicine Post-Concussion Information Sheet" can be used to communicate the relevant information to the student-athlete.

Implementation of UNL's post-injury concussion protocol involves a multidisciplinary team that may vary depending on the specifics of the case but may include:

- Team physician
- Athletics Neuropsychologist
- Team-specific athletic trainer
- UNL Athletics academic support personnel
- UNL Sport Psychologist/counselor
- Strength & Conditioning
- Additional health care provider(s) for vestibular and/or oculomotor evaluation and treatment
- Other team support personnel from the athlete's sport/team

Ongoing evaluation of both objective functioning and symptoms as reported by the student-athlete will be conducted until the athlete has returned to baseline and has completed both RTS and RTL. Domains of function that will be evaluated and monitored (as needed) include:

- Physical
  - Symptoms
  - Cervical spine
  - General neurological
  - Orthostatic
- Cognitive
  - Concentration
  - Immediate and delayed Memory
- Functional
  - Oculomotor
  - Vestibular
  - Balance
  - Gait

An athlete with an atypical presentation or persistent symptoms may complete additional evaluation and possibly be referred to an external specialty provider. Additional diagnoses may include, among others: fatigue and/or sleep disorder; migraine or other headache disorders; mental health symptoms and disorders; ocular dysfunction; vestibular dysfunction; neurodevelopmental diagnosis, and autonomic dysfunction.



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**Return-to-Activity and Sport (RTS)**

The following 6 stage protocol will be used to guide the management of all concussions and is based on the 6<sup>th</sup> International Conference on Concussion in Sport consensus guidelines<sup>1</sup>. Progression through the stages will be based upon serial evaluation and will be overseen by an HCP with concussion expertise. Domains assessed can include symptoms- including sleep and mood-, balance and gait, vestibular function, oculomotor function, and neurocognitive function. An athlete will remain in each stage for a minimum of 24 hours. For Stages 2 & 3, if a stage causes a more than a mild and brief increase in symptoms, the athlete should discontinue exercise for the day and repeat that same stage the following day.

- **Mild and brief** is defined as “an increase of no more than 2 points on a 0–10 point scale for less than an hour when compared with the baseline value reported prior to physical activity”<sup>1</sup>

A student-athlete may be allowed to move from Stage 1 to Stage 2 more quickly than 24 hours, depending on symptom load at the discretion of the team physician or department neuropsychologist.

**STAGE 1-** Symptom-limited activities of daily living

(Athlete will only remain in Stage 1 for a maximum of 48 hours after injury, and that will only occur in cases of very high symptom load. Most athlete will move to Stage 2 the day following their injury)

- No academic activity
- No physical activity
- No team activities

**STAGE 2-** Light aerobic exercise and light resistance training

- Cardiovascular- biking or jogging (steady state), walking intervals
- Weights- body weight and bands
- 2A- up to 55% max HR (max HR= 220 BPM-age)
  - Start with 15 minute session, can add 5 minutes/session as tolerated; no more than 2 sessions/day
- 2B- up to 70% max HR (max HR= 220 BPM-age)
  - Start with 20 minute session, can add 5 minutes/session as tolerated; no more than 2 sessions/day

*Athlete does not necessarily have to complete both 2A and 2B. The different stages are listed to facilitate clear communication between providers.*

**STAGE 3-** Sport-specific exercise and activity without head impact exposure - needs to be able to tolerate RTL Stage 3 prior to starting

- Cardiovascular- moderate jogging, brief running, moderate-intensity stationary biking
- Weights- moderate-intensity weightlifting (using only dumbbells and machines), no Olympic lifts
- Sport specific- non-contact change of direction drills, but cannot be integrated into team drills



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- Up to 85% max HR (max HR= 220 BPM-age)
  - If an athlete is in STAGE 3 for multiple days, higher HR can be achieved
- No specified time limit, but around 50% position/athlete average practice

***Athlete must be back to baseline symptom profile, back to baseline functioning in cognitive, vestibular, oculomotor, and balance domains, and cleared to advance to Stage 4 by the department neuropsychologist or team physician. Athlete should be able to complete both physical and cognitive activity without exacerbation of symptoms. Athletes experiencing concussion-related symptoms during Steps 4–6 should return to Step 3 to establish full resolution of symptoms with exertion. They will then start at Stage 4 and advance through the last 3 stages.***

**STAGE 4-** High intensity exercise and non-contact training drills; must be at STAGE 4 RTL to move on to STAGE 5

- Cardiovascular- sprinting/running, high-intensity stationary biking
- Weights- regular weightlifting routine
- Sport specific- non-contact sport-specific drills (in 3 planes of movement), can integrate into team training on non-contact activities
- Up to max HR
- Up to full position/athlete average practice

**STAGE 5-** Unrestricted training (full contact practice)

**STAGE 6-** Unrestricted return-to-sport (Clear from concussion protocol)

#### **Return-to-Learn (RTL)**

UNL's return-to-learn plan is both an individualized and stepwise process and may involve members of the interdisciplinary team listed above, as well as:

- The Associate Director of Academic Programs in Athletics
- Faculty athletics representative.
- Academic counselor.
- Course instructor(s).
- College administrators.
- Office of disability services representative.

An athlete's individualized RTL process will take into consideration their symptomology, any pre-existing learning difficulties or disabilities, course load, and timing of injury within the semester. Campus resources will be engaged for cases that cannot be managed through schedule modification and academic adjustments. Campus resources will be consistent with the ADA and will include UNL Services for Students with Disabilities.

Athletes will be allowed to return to team meetings in conjunction with their tolerance for academic activities.



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**STAGE 1-** Symptom-limited activities of daily living. Athletes will be encouraged to minimize screen time during this phase

**STAGE 2-** Brief periods of schoolwork outside the classroom

**STAGE 3-** Return to the classroom, with the option for breaks and work adjustments

**STAGE 4-** Full return to academics with no adjustments or exacerbation of symptoms with work. All make-up and missed work completed. Stage 4 of RTL should occur at or before Stage 4 of RTS

### **7. Retirement from Sport**

There is currently no evidence-based, absolute indicators for retirement from contact or collision sport due to concussion<sup>2,3</sup>. But if a student-athlete experiences multiple concussions, demonstrates a low or increasingly low threshold for concussive injury, or experiences progressively more severe signs and/or symptoms with longer recovery time with subsequent concussions, the Athletic Medicine medical staff will initiate a conversation with the student-athlete about retirement from sport.

The team physician, in consultation with the department neuropsychologist, and the Director of Athletic Training Services, reserves the right to permanently disqualify any student-athlete with who experiences multiple concussions, demonstrates a low or increasingly low threshold for concussive injury, and/or experiences progressively more severe signs and/or symptoms with longer recovery time with subsequent concussions, or demonstrates any other ongoing neurological change from concussion. If a student-athlete would like to seek a second option regarding a retirement decision, UNL Athletic Medicine can facilitate that referral, but Athletic Medicine reserves the right to permanently disqualify an athlete due to concussion.

### **8. Limiting Exposure to Head Impact**

UNL is committed to protecting the health and safety of student-athletes. To this end and in accordance with NCAA association-wide policy, UNL will limit student-athlete head trauma exposure in a manner consistent with NCAA SSI Interassociation Recommendations: Preventing Catastrophic Injury and Death in Collegiate Athletes and the Consensus Statement on Concussion in Sport: the 6<sup>th</sup> International Conference on Concussion in Sport. For example:

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



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- Adherence to policies and rules in sport that limit the number and duration of contact practices and activities in contact-collision sports.
- Emphasis on education of proper technique to reduce head impact exposure for all contact and collision sports, with special emphasis in pre-season
- Consideration of participation in neuromuscular training warm-up programs.

**References:**

1. Patricios, J. S., Schneider, K. J., Dvorak, J., Ahmed, O. H., Blauwet, C., Cantu, R. C., Davis, G. A., Echemendia, R. J., Makdissi, M., McNamee, M., Broglio, S., Emery, C. A., Feddermann-Demont, N., Fuller, G. W., Giza, C. C., Guskiewicz, K. M., Hainline, B., Iverson, G. L., Kutcher, J. S., ... Meeuwisse, W. (2023). Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport—Amsterdam, October 2022. *British Journal of Sports Medicine*, 57(11), 695–711. <https://doi.org/10.1136/bjsports-2023-106898>
2. Makdissi, M., Critchley, M. L., Cantu, R. C., Caron, J. G., Davis, G. A., Echemendia, R. J., Fremont, P., Hayden, K. A., Herring, S. A., Hinds, S. R., Jordan, B., Kemp, S., McNamee, M., Maddocks, D., Nagahiro, S., Patricios, J., Putukian, M., Turner, M., Sick, S., & Schneider, K. J. (2023). When should an athlete retire or discontinue participating in contact or collision sports following sport-related concussion? A systematic review. *British Journal of Sports Medicine*, 57(12), 822–830. <https://doi.org/10.1136/bjsports-2023-106815>
3. Schmidt, J. D., Rawlins, M. L. W., Lynall, R. C., D’Lauro, C., Clugston, J. R., McAllister, T. W., McCrea, M., Broglio, S. P., Hoy, A., Hazzard, J., Kelly, L., Master, C., Ortega, J., Port, N., Campbell, D., Svoboda, S. J., Putukian, M., Chrisman, S. P. D., Langford, D., ... Lintner, L. (2020). Medical Disqualification Following Concussion in Collegiate Student-Athletes: Findings from the CARE Consortium. *Sports Medicine*, 50(10), 1843–1855. <https://doi.org/10.1007/s40279-020-01302-y>





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**Compliance Certification\*  
Academic Year 2023-24**

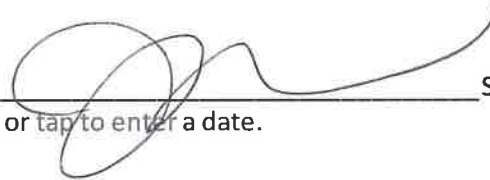
**Concussion Management Plan**

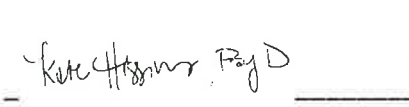
By signing and dating this form, I hereby acknowledge, on behalf of the institution identified above, that for the 2023-24 academic year, the above UNL Athletics Concussion Protocol is consistent with the NCAA Concussion Safety Protocol Checklist and otherwise fulfills the requirements of all applicable NCAA Concussion Management Plan legislation.

**Required Signature**

**Athletics Health Care Administrator**


Print Name: Janet Sellon Print Name: Kate Higgins, PsyD, ABPP-CN

Sign:   
Date: Click or tap to enter a date.

Sign:   
Date: 1/12/2024

**Optional Signature\*\***

Print Name: Ross Mathiasen, MD  
Click or tap here to enter text.

Sign:   
Date: Click or tap to enter a date.

**Optional Signature\*\***

Print Name: Click or tap here to enter text.

Sign: \_\_\_\_\_  
Date: Click or tap to enter a date.