



Concussion Safety Protocol Checklist

Updated September 2023

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.

*Highlighted content represents an update from the prior checklist.

Concussion Definition:

According to the Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport – Amsterdam, October 2022:

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.

No abnormality is seen on standard structural neuroimaging studies (computed tomography or magnetic resonance imaging T1- and T2-weighted images), but in the research setting, abnormalities may be present on functional, blood flow or metabolic imaging studies. Sport-related concussion results in a range of clinical symptoms and signs that may or may not involve loss of consciousness. The clinical symptoms and signs of concussion cannot be explained solely by (but may occur concomitantly with) drug, alcohol, or medication use, other injuries (such as cervical injuries, peripheral vestibular dysfunction) or other comorbidities (such as psychological factors or coexisting medical conditions).

Concussion Safety Protocol Checklist

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. **

**Baseline testing may inform post-injury evaluation; however, student-athletes who have suffered a concussion may perform at the same level or even better than their baseline testing, as motivation and other factors may differ in post-concussion testing. Ultimately, baseline testing serves as one of many potential factors in making a clinical decision.*

***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: acrobatics and tumbling; Alpine skiing; baseball; basketball; beach volleyball; diving; equestrian; field hockey; football; gymnastics; ice hockey; lacrosse; pole vault; rugby; soccer; softball; volleyball; water polo; 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: acrobatics and tumbling; Alpine skiing; baseball; basketball; beach volleyball; diving; equestrian; field hockey; football; gymnastics; ice hockey; lacrosse; pole vault; rugby; soccer; softball; volleyball; water polo; 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.
 - Signs that warrant immediate removal from the field include: actual or suspected loss of consciousness, seizure, tonic posturing, ataxia, poor balance, confusion, behavioral changes and amnesia.
 - Evaluation must be by an athletic trainer or team physician (or physician designee) with concussion experience.
 - Allow ample time (up to 10-15 minutes) when conducting a multimodal screen (e.g., SCAT6) to evaluate a potential concussion.
 - 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 after evaluation*.

**Even in such cases, consider next day follow-up assessment because initial symptoms may evolve over hours.*

Concussion Safety Protocol Checklist

Initial Suspected Concussion Evaluation:

- Initial suspected concussion evaluation management plan that specifies:
- Immediate assessment/neurological screen for 'red flags' or observable signs (as noted in the Concussion Emergency Action Plan below)
- A multi-modal evaluation, as clinically indicated, which may include:
 - Clinical assessment for cervical spine trauma, skull fracture, intracranial bleed or other catastrophic injury.
 - Symptom assessment.
 - Physical and neurological exam.
 - Cognitive assessment.
 - Balance exam.

Concussion Safety Protocol Checklist

Concussion Emergency Action Plan:

- A Concussion Emergency Action Plan includes:
- Immediate removal from play and assessment for possible transport to a local hospital/trauma center when any of the following are present:
 - 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.

Off-Field Same-Day and up to Three-Day Post-Concussion Management:

- Mechanism for serial evaluation and monitoring following injury same day and up to 72 hours (see Return-to-Learn and Return-to-Play below).
- 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.

Subacute (72 hours to weeks postinjury) Management Plan:

- Mechanism for evaluation and monitoring of the following:
 - Symptom evaluation.
 - Immediate and delayed memory.
 - Concentration.
 - Orthostatic vital signs.
 - Cervical spine assessment.
 - Neurological evaluation.
 - Balance and tandem gait assessment.
 - Modified VOMS.
- Consider further evaluation, as clinically indicated:
 - Screen for fear, anxiety or depression or other mental health issues.
 - Screen for sleep disturbance.
 - Graded aerobic exercise testing.

Concussion Safety Protocol Checklist

Rest and Exercise:

- Symptom-limited, light aerobic physical activity can begin within 24-48 hours (e.g., walking).
- Reduced screen use as necessary in the first 48 hours after injury.

Concussion Safety Protocol Checklist

Re-Evaluation Plan:

- Re-evaluation by a physician for a student-athlete with atypical presentation or persisting symptoms > 4 weeks 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.*
- *Cervical and vestibular dysfunction.*
- *Cognitive impairment.*
- *Autonomic dysfunction, including orthostatic intolerance and postural orthostatic tachycardia syndrome.*
- *Pain.*

Concussion Safety Protocol Checklist

Return-to-Learn:

The vast majority of young adults have a full return-to-learn with no additional academic support by 10 days post-injury.

Return-to-learn management plan should specify:

- Identification of a point person within athletics who will navigate return-to-learn with the student-athlete.
- Avoid complete rest and isolation, even for initial 24-48 hours.
- 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. The plan may address environment, physical, curriculum and/or testing adjustments.
 - 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:
 - Step 1:** Symptom-limited activities of daily living.
 - Step 2:** Aerobic exercise with light resistance training as tolerated (no more than mild⁺ or brief⁺⁺ exacerbation of symptoms).
 - 2a: Light (up to approximately 55% maximum heart rate); then
 - 2b: Moderate (up to approximately 70% maximum heart rate).
 - Step 3:** Individual sport-specific exercise and activity without any risk of inadvertent head-impact exposure.

Proceed to Step 4 only after resolution of signs and symptoms related to the current concussion, including with and after physical exertion.

- Step 4:** Non-contact practice with progressive resistance training.
- Step 5:** Unrestricted practice or training.
- Step 6:** 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.*

⁺Mild is defined as an increase of no more than 2 points on a 0-10 point scale when compared with the pre-exercise resting value.

⁺⁺Brief is defined as less than one hour.

Concussion Safety Protocol Checklist

Reducing Head Impact Exposure:

Reducing head impact exposure in a manner consistent with *Interassociation Recommendations: Preventing Catastrophic Injury and Death in Collegiate Athletes and Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport – Amsterdam, October 2022*. 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.
- Emphasizing education of proper technique to reduce head impact exposure for all contact and collision sports, with a special emphasis in the pre-season.
- Limit the number and duration of contact and collision in practices, intensity of contact in practices, and promote strategies restricting collision time in practices in contact-collision sports.
- Adherence to policy and rules in sport that reduce collisions.
- Consideration of participation in neuromuscular training warm-up programs.