Alvin ISD

Concussion Management Protocol

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Concussion Management Protocol & Supplements

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Introduction and Overview

Concussion or Mild Traumatic Brain Injury (MTBI)

A concussion is a type of mild traumatic brain injury that interferes with function of the brain. A concussion may be caused by a bump, blow, sudden stop, or jolt to the head or body causing a metabolic disturbance of brain functioning. Any force that is transmitted to the head may cause the brain to literally move or twist within the skull, potentially resulting in a concussion. It is a multisystem injury that affects the brain, cervical spine, vestibular, ocular motor, and autonomic nervous systems. It can cause blood flow changes, biochemical changes, structural changes, inflammation, neuronal injury, endocrine changes and/or an emotional disturbance.

A concussion is primarily an injury that interferes with how the brain works. It appears to be a very complex injury affecting both the structure and function of the brain. The sudden movement of the brain causes stretching and tearing of brain cells, damaging the cells, and creating chemical and blood flow changes in the brain. While there can be damage to brain cells, the damage is at a microscopic level and cannot be seen on standard brain MRI or CT scans.

What may appear to be only a mild jolt or blow to the head or body can result in a concussion. You've probably heard the terms "ding" and "bell-ringer." These terms were <u>once</u> used to refer to minor head injuries and thought to be a normal part of sports. We now avoid using these terms because they may minimize the potential severity of a concussion. All suspected concussions should be taken seriously and be evaluated and treated.

This injury causes brain function to change which results in an altered mental state (either temporary or prolonged). Physiologic and/or anatomic disruptions of connections between some nerve cells in the brain occur. Loss of consciousness only occurs in 5-10% of patients with a concussion; thus, a patient may have a concussion and never lose consciousness.

Concussions can have serious and long-term health effects. Signs and symptoms include, but are not limited to:

Observable signs

- Appears dazed or stunned
- Confused about assignment or position
- Forgets instruction
- Unsure of game, score or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows mood, behavior and personality changes
- Can't recall events prior to or after hit or fall
- Loses balance or is unsteady when walking

Symptoms reported by athlete

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light or noise
- Feeling sluggish, hazy, foggy or groggy
- Concentration or memory problems
- Confusion
- Just not "feeling right" or is "feeling down"
- More fatigued than usual
- Change in sleeping pattern

Once this injury occurs, the brain is vulnerable to further injury and very sensitive to any increased stress until it fully recovers.

Second Impact Syndrome (SIS)

Second impact syndrome (SIS) refers to catastrophic brain events which may occur when a second concussion occurs while the athlete is still symptomatic and healing from a previous concussion. The second injury may occur within days or weeks following the first injury. Loss of consciousness is not required. The second impact causes rapid brain swelling leading to other widespread damage to the brain. SIS is very rare but can be fatal. Most often SIS occurs when an athlete returns to activity without being symptom free from the previous concussion. Therefore, recognition and evaluation of any potential concussion is imperative.

Recognition of Concussion in the Student Athlete

Most athletes are at a higher risk of suffering a concussion. The rate of concussion varies between sports with the highest rate being about 20% in collision sports such as in football or rugby. Many concussions can go undiagnosed and unreported, so it is difficult to estimate the rate of concussion in any sport. Symptoms are not always clear-cut or the same and knowing when it is safe for an athlete to return to sport is not always clear.

Post-concussion symptoms can be quite subtle or may be delayed, and may go unnoticed by the athlete, team medical staff, or coaches. Thus, professionals familiar with concussions are needed to assess for or notice a potential concussion. Players may be reluctant to report concussive symptoms for fear that they will be removed from the game, and this may jeopardize their status on the team, or their athletic careers.

A student-athlete shall be removed from practice or competition immediately if one of the following suspects that the student-athlete might have sustained a concussion:

- Athlete's Coach
- Parent/Guardian
- Licensed Health Care Professional

Initial Evaluation of Suspected Concussion:

The student-athlete will be immediately removed from practice or competition if he/she is exhibiting any signs or symptoms of the concussion. At this point, a formal clinical evaluation by a trained healthcare professional will be performed to evaluate for the presence of a more serious injury such as C-spine injury, neurological deficits, skull fracture, intracranial bleeding, and catastrophic injury.[1,4,5] The immediate sideline evaluation should be based on injury recognition signs (e.g., gross motor instability, confusion, LOC), assessment of symptoms, cognitive and cranial nerve function, and balance. Recognizing a suspected concussion is best approached through the utilization of multidimensional testing.[1,3,4] Somatic, cognitive, gait, neurologic, and affective function will be evaluated via the SCAT-6 **(see form under evaluation tools – section 3)**;

- **Sport Concussion Assessment Tool 2023 (SCAT6) – Healthcare Professional**
  The SCAT6 Immediate Assessment/Neuro Screen will be administered to the student-athlete at the time of a suspected concussion. Follow-up testing, and evaluation of the student-athlete using the SCAT6 Off-Field Assessment will take place later in the event (example, half time or post-game) or prior to the student-athlete's departure (if circumstances allow) from the venue or practice. The age of the student athlete determines which version of the SCAT is used:
  ***The SCAT6 is used for evaluating athletes aged 13 years and older. For children ages 8-12 please use the Child SCAT6.**

- **Concussion Recognition Tool (CRT) – Coaches (if no athletic trainer or physician available)**
  The CRT was designed for non-professional healthcare personnel (e.g., coaches or volunteers) to help them spot a possible concussion. It does not necessarily diagnose a concussion which is left the healthcare professionals experienced in this but rather gives the non-healthcare provider a tool used to remove a student-athlete from practice or play because of a potential concussion. When in doubt sit them out.

Evaluation and Management for Concussion

1. The student-athlete does not return to a game or practice if he/she is suspected to have a concussion or has any signs or symptoms of a concussion.
2. Observe the student-athlete for status changes every 20-30 minutes for the first 90 minutes after the injury. Do not allow the athlete to be alone after the concussion.
3. Parent/Guardian is notified of injury & athlete is referred to a physician of their choice.
4. Provide post-concussion home instructions to parent or legal guardian.

5. Do not allow athlete to drive home the day of concussion.
6. Doctor recommended school modifications.
    a. Athletic staff will notify school administrators/teachers that the student-athlete has a concussion.
    b. Student-athlete may need special accommodations such as limited computer work, reading activities, testing, assistance to class, etc. until symptoms subside.
    c. Student-athlete may need to miss a few days of school acutely after the concussion, only be able to attend school for half days, or may need daily rest periods until symptoms subside with physician authorization.
7. Follow-up assessment occurring 72 hours or more post-injury should use the Sport Concussion Office Assessment Tool (SCOAT6). The SCOAT6 is a multidimensional clinical screening, evaluation, and management tool. It should be used in a controlled office environment by Health Care Professionals (HCP) following a sport-related concussion. The SCOAT6 may be used for initial evaluation or for follow-up evaluation as athlete's symptoms are subsiding.

The SCOAT6 is used for evaluating athletes aged 13 years and older. For children ages 8-12, please use the Child SCOAT6.

Recovery for the Athlete

The first step in recovering from a concussion is rest. Rest is essential to help the brain heal. Student-athletes with a concussion need rest from physical and mental activities that require concentration and attention as these activities may worsen symptoms and delay recovery. Exposure to loud noises, bright lights, computers, video games, television and phones (including texting) all may worsen the symptoms of concussion. Rest is defined to symptom limited activity at home; not lying in a dark room with no stimulation. Too much rest is found to prolong concussion recovery. As the symptoms lessen, usually within 48-72 hours, symptom-limited gradual increases in physical and cognitive activity is encouraged as long as symptoms do not increase. The idea of sub-symptomatic activity with a gradual increase is known to speed up recovery compared to no activity until asymptomatic.

Light aerobic exercise after a concussion is beneficial and helps with recovery. Light aerobic exercise helps improve blood flow to the brain and improves autonomic function. Per the 2023 Concussion Consensus Statement, athletes may begin the Return to Sport Protocol Step 1, on day 3 post-concussion. If the school/school district employs an athletic trainer (this includes an outreach athletic trainer) The Buffalo Concussion Protocol can also be used 3 days post-concussion depending on severity of symptoms and athletic trainer's clinical judgement as a metric for exercise as treatment and recovery. If a treadmill or stationary bike is not available for use, please use Buffalo Exercise Treatment – Light Exercise Form
(see form under evaluation tools – section 3).

Concussion Management of the Athlete

It is crucial to allow enough healing and recovery time following a concussion to prevent further damage. Athletes who return to sport before full clinical recovery are at a much higher risk of another concussion that will cause a more severe injury. Research suggests that the effects of repeated concussions are cumulative over time.

Most athletes who experience an initial concussion recover completely if they do not return to sports too soon. Concussion recovery is generally age-dependent with younger individuals requiring more time. For example, 2-3 weeks until recovery for a high school student is not uncommon. It is imperative to treat concussion-related problems early in the course of recovery to help optimize and shorten recovery time. A small percentage 10-15% can take much longer to clinically recover. During this time, the brain may be vulnerable to more severe or permanent injury such as Second Impact Syndrome (SIS). If the athlete sustains a second concussion during this time period, the risk of more severe or lasting brain injury increases.

The Alvin ISD Concussion Oversight Team consists of:

Dr Theresa Phan – Primary Care Sports Medicine – Houston Methodist Hospital
Dr Haris Vakil – Primary Care Sports Medicine – Houston Methodist Hospital
Kenneth Podell, Ph.D., FACPN – Neuropsychologist – Director of Houston Methodist Concussion Center
Deidre Duke, LAT, ATC – Athletic Trainer – Houston Methodist Concussion Center Program Manager
Houston Methodist Alvin ISD Outreach Athletic Trainers
Alvin ISD Athletic Trainers

Recovery of Concussed Student-Athlete: Return-to-Learn

Due to the complexity of concussion, it is important to recognize that no two concussions are the same and no two student-athletes will have the same symptomatology pattern. Because of this, recovery also varies from person to person and is why time frames for return-to-sport/learn will be individualized. Concussions can generate fatigue and changes in short-term memory, concentration, thinking speed, and executive function that make learning difficult.[4] With this understanding, recovery and treatment planning, including return to learn, will be individualized based upon that student-athlete's symptoms and deficit pattern. Treatment of concussion requires physical and cognitive rest, and the return-to-learn process calls for the transition of the student-athlete back to the classroom following concussion. ***As with return-to-sport, the injured student-athlete is not to attend class or participate in classroom activity on the same day as the concussion***. Following the injury, the student-athlete will be evaluated by their physician of choice, but preferable one that specializes in concussion and academic accommodations and level of physical activity may be recommended. Re-evaluation will take place when symptoms worsen with academic or physical challenges.

Although many student-athletes recover from concussion without or with only short-term academic accommodations, all involved parties will be prepared to provide additional academic support for as long as deemed necessary by the physician. Student-athletes with persisting symptoms should be provided an individualized return-to-learn plan based on

recommendations from the treating physician that will allow for graduated symptom-limited learning activities. Adjustments and accommodations of the return-to-learn plan will be based on patient-specific symptoms, symptom severity, academic demands, and pre-existing conditions such as depression/anxiety, neurological disease/disorder, medical conditions, or attention deficit/hyperactivity disorder.[1,5]

If the school employs an athletic trainer, they will communicate with the school counselor, treating physician, and the student-athlete's assigned academic advisor as to the nature of the student-athlete's diagnosed concussion, individualized initial plan for return to classroom/studying as tolerated and return-to-learn progression. Any academic accommodations or adjustments, including modifying class attendance of the student-athlete, will be communicated to all involved parties via physician note. If no athletic trainer the coach of the athlete will communicate this information. It should be noted that each ***stage during the return to learn protocol can take a few days to complete.***

The protocol below serves as an example of a return-to-learn strategy, following the minimum 48-hour period of relative rest:

Step	***Aim***	***Activity (Suggested)***	***Goal***
1	Begin cognitive activities, as tolerated	Short/light cognitive activities. May start with 5-15 minutes of cognitive activities such as reading. May not be able to attend classes.	Gradual return to typical activities without symptom provocation.
2	Cognitive activities outside of the classroom	Homework and reading for short periods (20-30 minutes) with breaks (10-15 minutes) in between. Can attend partial classes sporadically.	Increase tolerance to cognitive activities.
3	Gradual re-introduction to classroom	Partial class attendance or with frequent breaks between classes during the day. Start doing homework in 20-minute intervals with breaks.	Increase academic activities.
4	Full return to normal class schedule	Full class attendance, making up missed or postponed assignments. Still no exams.	Increase academic activities, with progress on missed or postponed tasks.
5	Full return to learn	Full class attendance, current assignments completed as scheduled and starting to complete make-up exams.	Unrestricted academic activities.

UNRESTRICTED RETURN-TO-SPORT SHOULD NOT OCCUR PRIOR TO UNRESTRICTED RETURN-TO-LEARN

Return-to-Sport of an Athlete

A student-athlete that is suspected/believed to or has a confirmed concussion will not be permitted to practice or compete again until the student-athlete has been evaluated and cleared through a written statement by a physician of their choice to begin the school district's return-to-sport protocol. The student-athlete must complete the following steps before being allowed to return any athletic activity (participation in athletic period, weight training, practice or competition):

1. The student-athlete and their parent or guardian will have to return the physician's statement and complete a consent form ***(Section 5 Appendix B – UIL Concussion Management Protocol Return to Sport (Play) Form)*** indicating that they have been informed and consent to the policies established under the return-to-sport concussion protocol.
2. If the physician note indicates ***"No Concussion", per the state concussion law the athlete must still complete the school district's return to sport protocol.*** This will serve as the clearance note.
3. Understand the risks associated with the student-athlete's returning to sport and will comply with any ongoing requirements outlined by the concussion policy.
4. Understands the district or school's immunity from liability provisions.

The Return To Sport Protocol involves the following steps:

1. The return to sport may be completed under the supervision of the school's athletic trainer, school nurse or coach.
2. The student-athlete must complete the RTS documentation form (symptom assessment) after each step of the RTS protocol.
    a. The student-athlete must initial each time they complete the RTS documentation.
    b. Forward completed RTS documentation to the student-athlete's treating physician.
3. Once the RTS protocol has been completed the treating physician must provide a written statement indicating that, in the physician's professional judgment, it is safe for the student-athlete to return to sport.
4. Student-athlete and the parent/guardian have signed the form (Appendix B) acknowledging the completion of the return to sport guidelines which includes understanding the risks associated with the student-athlete's return to sport.

Athletes that have a history of multiple concussions or that have persistent symptoms or indicating cognitive difficulties following concussion will be referred for neurocognitive assessment with a concussion specialist.

Post-Concussion Return-to-Sport Protocol

Contact Sports Steps 1-5/Non-Contact Sports Steps 1-4

The return to sport may only be done under the supervision of an athletic trainer, school nurse or team coach.

Step	MHR	Duration	Description
1	50-60%	15-20 min	light aerobic exercise with no resistance training (e.g. walking, low intensity setting for stationary bike and hand bike
2	60-70%	20-25 min	Moderate aerobic activity with resistance training (e.g. running, light weights – No squat dead lift or bench press)
3	70-80%	25-30 min	High intensity non-contact individual sport specific exercise - no contact drills allowed.
4*		Full Practice (non-contact)	Full NON-CONTACT practice – for contact sports, supervised light contact activities at the end of practice. For example, controlled headers in soccer - AT or coach stands 8-10 feet away from the athlete and tosses a ball 8-10 feet high towards the athlete for 3-5 headers. Football would be 3-5 half-speed/light hits on the sled where the athlete's starting position is 1 foot away.
5*		Full Practice	Full contact practice
6		Full Return	Return to full participation (pending physician clearance)

MHR (Maximum Heart Rate) = 220 – Athlete's age.

****Before beginning Steps 4 & 5 resolution of any symptoms, abnormalities in cognitive function, and any other clinical findings related to the current concussion, including with and after physical exertion.***

After ***approximately 48 hours of a relative rest period, athlete may begin with Step 1***. Each subsequent step will take a minimum of 24 hours to complete. ***The athlete may be in one Step several days depending on symptoms. If more than mild exacerbation of symptoms*** (more than 2 points on a 0-10 scale) the athlete should stop and continue exercising in the same step the next day. If any concussion-related symptoms occur during Steps 4 or 5, they should return to Step 3 to establish full resolution of symptoms with exertion before attempting Steps 4-5 again.

Please Note:
Mild and brief exacerbation of symptoms is an increase of no more than 2 points on a 0-10 point scale lasting less than one hour when compared to baseline value reported prior to physical activity.
SCAT6 - Echemendia RJ, et al. Br J Sports Med 2023; 57:1–3. doi: 10.1136/bjsports-2023-107036

Please note, if a physician note is received that requires the athlete to be in a step longer than one day that must be followed.

AMERICAN ACADEMY OF PEDIATRICS

TABLE 1

Classification of Sports According to Contact

Contact	Limited-Contact	Noncontact
Basketball	Adventure racing	Badminton
Boxing	Baseball	Bodybuilding
Cheerleading	Bicycling	Bowling
Diving	Canoeing or kayaking (white water)	Canoeing or kayaking (flat water)
Extreme sports	Fencing	Crew or rowing
Field hockey	Field events	Curling
Football, tackle	High jump	Dance
Gymnastics	Pole vault	Field events
Ice hockey	Floor hockey	Discus
Lacrosse	Football, flag or touch	Javelin
Martial arts	Handball	Shot-put
Rodeo	Horseback riding	Golf
Rugby	Martial arts	Orienteering
Skiing, downhill	Racquetball	Power lifting
Ski jumping	Skating	Race walking
Snowboarding	Ice	Riflery
Soccer	In-line	Rope jumping
Team handball	Roller	Running
Ultimate Frisbee	Skiing	Sailing
Water polo	Cross-country	Scuba diving
Wrestling	Water	Swimming
	Skateboarding	Table tennis
	Softball	Tennis
	Squash	Track
	Volleyball	
	Weight lifting	
	Windsurfing or surfing	

Martial arts are subclassified as judo, jujitsu, karate, kung fu, and tae kwon do; some forms are contact sports and others are limited-contact sports.

Concussion Risk Reduction Strategies

Strategies to reduce the risk of concussion include a multifaceted approach focused on rule and policy changes, technique modification, equipment considerations, and education. According to the American College of Sports Medicine (ACSM) [1], the American Medical Society for Sports Medicine (AMSSM) [2], and the National Athletic Trainers' Association (NATA) [3][4], while the primary prevention of all concussions is not possible, targeted interventions can reduce risk. This protocol synthesizes findings from the 2023 Concussion in Sport Group (CISG) consensus statement [5], systematic reviews, and position statements from ACSM, AMSSM, NATA, and CDC [6].

1. Rule Modification and Enforcement

- Strict enforcement of rules prohibiting hits to the head, spearing, checking from behind, and targeting defenseless players.
- Support rule changes that limit high-risk behaviors.
- Promote "fair play" initiatives and consistent officiating.

References: [1][2][3][5][6][7]

2. Technique Training and Neuromuscular Conditioning

- Teach and reinforce proper sport-specific techniques (e.g., tackling, checking).
- Limit contact drills during practice.
- Implement neuromuscular and neck strengthening programs, particularly for youth and female athletes.
- Encourage preseason movement screening and individualized training.

References: [1][3][4][6][8]

3. Protective Equipment

- Helmets reduce skull fractures and severe head injuries but are not proven to prevent concussion.
- Mouthguards reduce dental and oral injuries, with limited evidence for reducing concussion risk in collision sports.
- Avoid over-reliance on headgear or concussion headbands as primary preventive tools.
- Equipment recommendations:
- All headgear must have current NOCSAE certification.
- Ensure proper fit for each athlete.
- Coaches or designees should routinely inspect air bladders and padding.
- Ensure athletes properly wear appropriate protective equipment (helmets, padding, mouthguards).

References: [1][3][4][5][6]

4. Education and Culture Change

- Deliver annual concussion education to athletes, coaches, and parents on signs, symptoms, and importance of reporting.
- Foster a culture that prioritizes athlete safety, symptom honesty, and proper recovery over performance.
- Reinforce the importance of removing athletes with suspected concussion from play and following return-to-play protocols.

References: [1][2][3][4][6][7]

5. Exposure Management

- Reduce full-contact practices, especially in preseason and youth levels.
- Monitor athlete workloads and fatigue to reduce injury risk late in games or seasons.
- Implement rest and recovery strategies, including structured off days.

References: [1][5][6][7]

6. Vision and Vestibular Training (Emerging Practice)

- Consider incorporating dynamic visual and vestibular training to improve anticipation, balance, and visual-motor control.
- Pilot programs show promising results in reducing head impact exposure.
- Status: Emerging evidence; not yet a standard of care.

References: [6][8]

7. Medical Oversight and Standardized Protocols

- Ensure consistent access to Athletic Trainers or healthcare professionals during practices and games.
- Follow a standardized return-to-sport (RTS) protocol even if a physician note states “no concussion” if there was a suspected mechanism of injury.

References: [3][4][6]

Conclusion:

No single intervention completely prevents concussion. However, a comprehensive and integrated approach addressing behavior, biomechanics, education, and environmental factors can significantly reduce the risk. This protocol will be reviewed and updated as new evidence emerges.

References for Concussion Risk Reduction Strategies:

1. American College of Sports Medicine. (2020). Concussion Guidelines.
2. American Medical Society for Sports Medicine. (2019). Position Statement on Concussion.
3. National Athletic Trainers' Association. (2021). Position Statement: Management of Sport-Related Concussion.
4. National Athletic Trainers' Association. (2024). Bridge Statement to the 2021 Concussion Position Statement.
5. McCrory et al. (2023). 6th International Consensus Statement on Concussion in Sport. BJSM.
6. Centers for Disease Control and Prevention. (2022). CDC HEADS UP Initiative.
7. NCAA-DOD CARE Consortium. (2021–2024).
8. Collins MW et al. (2014). Neck Strength and Concussion Risk. J Prim Prev.

Alvin ISD follows HB 2038, 82(R). A student-athlete may not participate in an interscholastic athletic activity (practice or competition) for a school year until both the student-athlete and the student-athlete's parent or guardian or another person with legal authority to make medical decisions for the student-athlete have signed a form for that school year that acknowledges receiving and reading written information that explains concussion prevention, symptoms, treatment, and oversight and that includes guidelines for safely resuming participation in an athletic activity following a concussion. The form must be approved by the University Interscholastic League *(Section 5 Appendix A - UIL Concussion Acknowledgment Form)*.

INFORMATION DISCLOSURE

The Family Educational Right to Privacy Act 0f 1974 (FERPA) is a federal law that governs the release of a student-athlete's education records, including personal identifiable information (name, address, social security number, etc.) from those records. Medical information is considered a part of a student-athlete education record. Also, the Health Insurance Portability and Accounting Act of 1996 (HIPAA) allows the disclosure of information from treating physicians.

This authorization (Appendix B) permits the licensed health professionals working with (Alvin ISDISD to obtain and disclose information concerning medical status, medical condition, injuries, prognosis, diagnosis, and related personal identifiable health information. This information includes injuries or illnesses relevant to past, present, or future participation in athletics. I understand that I may revoke this authorization at any time by providing written notification.

IMMUNITY PROVISION

By signing the UIL Return to Play documentation form (Appendix B) I do hereby agree to indemnify and save harmless the Alvin ISD and any school representative from any claim by any person whomsoever on account of such care and treatment of said student-athlete. Furthermore, the student-athlete / parent/guardian understands this policy does not:

1. Waive any immunity from liability of a school district or open-enrollment charter school or of district of charter school officers or employees;
2. Create any liability for a cause of action against a school district or open-enrollment charter school or against district or charter school officers or employees;
3. Waive any immunity from liability under Section 74.151, Civil Practice and Remedies Code;
4. Create any liability for a member of a concussion oversight team arising from the injury or death of a student-athlete participating in an interscholastic athletics practice of competition, based only on service on the concussion oversight team.

References for Concussion Management Protocol :

1. Patricios, J. S., Schneider, K. J., Dvorak, J., Ahmed, O. H., Blauwet, C., Cantu, R. C., ... & 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.
2. Leddy J, Baker JG, Haider MN, Hinds A, Willer B. A physiological approach to prolonged recovery from sport-related concussion. J Athl Train. 2017;52(3):299-308.
3. Leddy J, et al. *British Journal of Sports Medicine* 2023; 57 615-616 Published Online First: 14 Jun 2023. doi: 10.1136/bjsports-2023-107127 Rest and exercise early after sport-related concussion: a systematic review and meta-analysis
4. Broglio SP, et al. National athletic trainers' association position statement: management of sport concussion. J Athl Train. 2014;49(2):245-265.
5. Harmon KG, et al. American Medical Society for sports medicine position statement on concussion in sport. Br J Sports Med. 2019;53: 213-225.
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7. Kontos AP, Deitrick JM, Collins MW, Mucha A. Review of vestibular and oculomotor screening and concussion
rehabilitation. J Athl Train. 2017; 52(3): 256-261.
8. Mucha A, et al. A brief Vestibular/Ocular Motor Screening (VOMS) assessment to evaluate concussions. Am J Sports Med. 2014;42(10): 2479-2486.