



Lubbock Sports Medicine Sports-Related Concussion Program

Plan of Care, Treatment Guidelines, and Return to Play Considerations

Pre-Season

- Team physicians, PA's, NP's, and athletic trainers of Lubbock Sports Medicine will strive to provide the highest level of care to athletes with sports-related concussion.
- The Lubbock Sports Medicine staff should continue to educate players, family members, coaches, and administrators about concussions, with emphasis on the most current diagnostic tools available and the latest evidence based trends in concussion management.
- Athletic trainers and team providers from Lubbock Sports Medicine will work together to maintain these protocols and evaluate yearly to make appropriate changes and recommendations.
- Team physicians, PA's, NP's, and athletic trainers of Lubbock Sports Medicine will work together to use standardized sideline evaluations as well as office screening, evaluation tools, and neurocognitive testing to improve the level of care we provide to these athletes.
- It is recommended that all athletes participating in contact and collision sports such as football, basketball, and soccer have baseline neurocognitive testing (ImpACT) made available by Lubbock Sports Medicine and in coordination with their respective school districts.
- It is also recommended that a thorough concussion history be an important part of the pre-participation physical evaluation.

On-Field or Sideline Evaluation

- Any player who sustains loss of consciousness and/or has abnormal neurological findings should be suspected of having a potential C-spine injury, appropriate precautions taken, followed by transport to the nearest emergency room for further evaluation.
- It is recommended that team providers and athletic trainers use validated sideline evaluation tools such as Maddock's questions, Standardized Assessment of Concussion (SAC), and/or clinical instruments such as the Sport Concussion Assessment Tool 2 (SCAT2) when evaluating athletes with suspected concussion.

- All players suspected of having a concussion should be held out of practice and competition, should not be left alone, serially monitored for symptom deterioration, and should seek medical attention for further work-up and evaluation.
- Education regarding signs and symptoms of a concussion should be provided to coaches, parents, roommates, etc. who may be staying with the athlete. “Concussion Guidelines for Parents” and “Concussion Guide for Athletes” can be provided.

Office Evaluation

- Team physicians, PA’s, NP’s, and athletic trainers should continue to exercise their clinical judgment and expertise when evaluating and treating any athlete suspected of having a concussion or traumatic brain injury. It is also important to utilize additional expert consultation or other diagnostic studies if clinically indicated.
- Every athlete presenting to LSM for further evaluation for a concussion should complete the “Sports Concussion Assessment Tool” form, and education materials to be provided to the athlete, parents, coaches, etc. (“Concussion Guidelines for Parents” and “Concussion Guide for Athletes” should be used.)
- Team physicians, PA’s, NP’s, and athletic trainers should obtain a thorough history of the athlete specifically inquiring about the common signs and symptoms of concussion and the number of previous injuries. A thorough neurological examination should be performed -- it is recommended that either the short or long “Concussion Evaluation” form or the SCAT2 be utilized during this process and included in the chart as part of the medical record.
- It is recommended that any athlete with baseline testing who then sustains a concussion, a consideration for post-injury neurocognitive testing (ImpACT) and evaluation performed based on the clinical judgment of the evaluating provider.
- A consideration could be made for post-injury ImpACT testing in athletes without a baseline, if felt to be necessary or to provide further clinical information by the evaluating provider.
- Immediate post-injury ImpACT testing should be performed within 48-72 hrs. after the event, but may be performed sooner (i.e. the next day) if deemed appropriate by the evaluating provider and depending on the particular athlete’s circumstances.
- Certain athletes may undergo ImpACT testing through LSM but may not be seen by a member of our sports medicine staff. Although discussion/opinion may be given regarding these ImpACT testing results, care must be given regarding any treatment recommendations or clearance for return to play unless the athlete is personally evaluated by a provider at Lubbock Sports Medicine.

- The main principle of concussion management is physical and cognitive rest until symptoms resolve, followed by a graded program of exertion prior to medical clearance and return to play.
- Pharmacological therapy may be indicated to manage specific prolonged symptoms (i.e. > 3 weeks) such as sleep disturbance, anxiety, etc. Drug therapy may also aim to shorten the duration of concussion symptoms in the prolonged setting. (Amitriptyline 10mg at night, Amantadine 100mg in mornings, and Trazodone 50mg are a few examples.) **see UPMC Protocol**
- As an important consideration for return to play, concussed athletes should not only be asymptomatic but also should not be taking any pharmacological medications used to treat/modify the symptoms of a concussion.

Return to Play Guidelines

- It is encouraged that team providers and athletic trainers continue to adopt a conservative approach to the management of these injuries and with return to play decisions.
- The essential criteria for any athlete to return to play includes that the athlete is completely asymptomatic both at rest and exertion, with a normal neurologic examination. Any player with loss of consciousness for any period should not be allowed for immediate return to play in the same contest or practice.
- The ultimate return to play decision should be a medical one, although ImPACT testing may be used to assist in this decision and should not be performed until the athlete is asymptomatic.
- It is recommended that any athlete cleared for return to play do so in a gradual step by step fashion as outlined in “Table 1. Graduated Return to Play Protocol” in the Consensus Statement of the Third International Conference on Concussion in Sport and listed below.

- Each rehabilitation stage should take 24 hours and athlete should be asymptomatic before progressing to next stage.

Rehabilitation Stage	Functional Exercise	Objectives
1. No activity	Complete physical and cognitive rest**	Recovery
2. Light aerobic exercise	Walking, swimming, stationary bicycle; intensity <70% max heart rate; no resistance training	Increase HR
3. Sport-specific exercise	Running, individual exercise	Add movement
4. Non-contact training drills	Complex sports specific drills individual and group	Exercise, coordination, and cognitive load
5. Full contact practice	Following medical clearance, participate in normal training activities	Restore confidence and assess functional skills by coaching staff
6. Return to play	Normal game play	

** Cognitive rest-no activities that require concentration and attention (school work, video/computer games, TV, texting)

- Team physicians, PA's, NP's, and athletic trainers should continue to take into account certain symptoms and signs that have been associated with a delayed recovery when making return to play decisions. These include confusion, fogginess, problems with immediate recall, disorientation to time, place and person, anterograde and retrograde amnesia, fatigue, blurred vision, and presence of three or more signs and symptoms of concussion.
- Team physicians, PA's, NP's, and athletic trainers should continue to consider the player's history of concussions, including number and time between incidents, type and severity of "blow", and time to recover -- with emphasis that younger athletes recover slower.

Resources

1. McCrory P et al. Consensus Statement on Concussion in Sport, 3rd International Conference on Concussion in Sport, Zurich 2008. Clin J Sport Med 2009;19:185-200.
2. Lovell, M. The management of sports-related concussion: current status and future trends. Clin J Sport Med 2009;28:95-111.
3. 2009 NFL Conference on player health and safety and the NFL MTBI Committee.
4. Kissick J, Johnston KM. Return to play after concussion, principles and practice. Clin J Sport Med 2005;15:426-431.
5. Guiskiewicz KM et al. National Athletic Trainers' Association Position Statement: Management of Sports Related Concussion. Journal of Athletic Training 2004;39(3):280-297.

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