



QUESTION | I am looking after a lower grade rugby league team and we do not have medical cover on the day. What are the current recommendations for management of concussion that can assist me in looking after my players with a head knock?

ANSWER | Concussion has entered a new era of scrutiny over the last few years. Concern regarding the possibility of detrimental long-term outcomes after head trauma, such as chronic traumatic encephalopathy (CTE) in NFL players, has led to a significant tightening up of the management of concussion. The old days of sending players back on after a head knock, and being seen as a 'badge of courage', are long gone.

The current guidelines for the management of sports related concussion are drawn from a series of consensus meetings with leading experts in this area from around the world. The latest of these was staged in Berlin in 2016. This is an important document to read for any practitioner involved in the care of contact sport (1).

As a rule, concussion is diagnosed by events noted at the time of the initial head trauma, in conjunction with a sideline cognitive assessment test. It is suggested that this should include the SCAT 5 (Sport Concussion Assessment Tool) test, which includes the Maddock's questions, a sport specific measure of orientation. The test also includes measures of short term memory, concentration and balance. The SCAT 5 test is easily found online and should be available for reference at all games where there is a possibility of head trauma involved. It is helpful if all players in the playing group have undergone a baseline SCAT 5 evaluation in the pre-season. Whilst the SCAT 5 may be used as a stand-alone test, it is more helpful with a pre-existing baseline available.

When watching a potential episode of head trauma during a game, the players behaviour should be closely monitored. If there is any evidence of what is known as a 'category 1' sign, then the player should be removed and not returned to play on that day. These signs may include loss of consciousness or responsiveness, lack of protective measures falling to the ground, tonic posturing, seizure, memory disturbance (fails the Maddocks tests) or balance disturbance (stumbles, falls over). This is irrespective of if they regain normal mental function or if they pass a subsequent SCAT 5 test on the same day.

If there is any concern regarding a possible concussion, but without direct observation of a category 1 sign, then the player should be removed from play for a sideline evaluation with a SCAT 5 test. If this is passed and there are no other symptoms of concussion, then the player may be returned to play on that day.

Concussion is a condition that may evolve over time, so it is important that the player is monitored regularly during and post-game to make sure there is no deterioration in their symptoms. In the case of a diagnosed concussion the player must be discharged into the care of a responsible person with a plan in place for follow-up if there is any worsening of their clinical state. This may include increasing drowsiness, headache or vomiting. If there is any concern, then the player is best monitored in hospital.

The management of return to play is also important in the concussed athlete. It is essential that the player is reviewed by a medical doctor with some experience in the diagnosis and treatment of sports related concussion. Guidelines would suggest that return to activity should be performed in a graded, stepwise fashion. An initial period of rest is paramount until complete symptom resolution occurs. This should include rest from physical but also strenuous mental activity. Once the player is completely symptom free (no headache, fatigue, sleep disturbance, concentration, memory or balance disturbance) then they may start to commence some low level aerobic exercise. A follow-up SCAT 5 should also be performed and return to baseline. The player should then upgrade their activity daily to include harder aerobic exercise, weight training and full team training, first without and then with contact. Moving through these stages requires no aggravation of concussive symptoms to allow progression. In the majority of simple and uncomplicated concussion, full resolution to normal activity will occur within 7-10 days.

A special note should be made regarding concussion in children. This seems to be a more significant condition which may take longer to resolve. A more cautious approach may be required to return to sport and many professional bodies are suggesting mandatory stand down periods for children under 18. It is important that kids return to normal schooling without symptoms before contemplating a return to sport.

The management of sports related concussion is evolving with more evidence emerging that the return to sport prior to complete resolution of symptoms could be related to detrimental outcomes. A take home measure from this question is that it is impossible to do any more harm by keeping the player on the sidelines. Coaches are now more freely acknowledging the fact that traumatic brain injury should not be taken lightly. If there are any clinical concerns of a sports related concussion, then the athlete should be removed from play for evaluation and not returned unless there is a clear indication for this to occur. This is irrespective of whether they are playing 'park footy' or competing at a professional level.

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1. Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016, [McCorry](#), [Meeuwisse](#), et al. , BJSM.