BASKETBALL AUSTRALIA CONCUSSION POLICY

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	19 September 2019	Dr Peter Harcourt	Previous – Concussion Guidelines
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Acronyms	Full form
BA	Basketball Australia
SRC	Sport Related Concussion
SCAT6	Sports Concussion Assessment Tool 6
SCOAT6	Sport Concussion Office Assessment Tool 6

1. Purpose

To provide guidance in the management of sport related concussion (SRC) for all levels of Australian basketball and protect the short- and long-term health of players.

2. Introduction

Concussion is a traumatic brain injury that results in short-lived neurological impairment and symptoms that will usually evolve over hours or days following the injury. Rest, followed by a gradual return to school (in the case of children), gradual return to sporting activity, training and competition is the recommended management and this will usually take several days to a few weeks (about a week longer for children 18 years and younger).

The diagnosis and return to play should be undertaken or overseen by a medical practitioner ideally with experience in the management of concussion such as a sports doctor or sports physician.

Any basketball player with a diagnosed concussion must not continue to play or train until cleared by a medical practitioner. The doctor is expected to utilise the guidance and resources of the 6th International Conference on Concussion in Sport, Amsterdam 2022 (see reference 1) and the Australian Sports Commission (see reference 9).

The international Consensus was drafted by concussion experts who undertook an extensive review of the scientific literature followed by expert opinion. This body of work has resulted in an update of clinical resources and includes:

- CRT6 (recognition of suspected concussion by non-healthcare personnel) (see reference 2)
- SCAT6 (enhanced acute assessment for concussion; valid for up to 7 days post injury; a tool to be used by concussion trained healthcare personnel) (see reference 3)
- SCOAT6 (new office based neurological assessment aligned with the SCAT6 but allowing for a more detailed clinical assessment; to be used 3-30 days post injury; its' purpose primarily to assess return to play decisions and as a guide the management of difficult concussion cases; allows the integration of additional neurological assessment resources such as cognitive testing, special brain function tests not included in the SCAT6, neuropsychological testing, etc) (see reference 4)
- Child SCAT6 and Child SCOAT6 (for the 2-12 age group) (see references 5 and 6)

3. Diagnosis

The diagnosis of concussion is medical, with the presence of symptoms and signs suggestive of neurological dysfunction following direct trauma to the head or a transmitted force to the head. These might include loss of consciousness, which is relatively uncommon, convulsions or difficulty balancing or walking. Other symptoms and signs may be less obvious but include headache, dizziness, tinnitus, sensitivity to light or noise, nausea, poor concentration or memory. A full list of possible symptoms and signs can be found in the Sports Concussion Assessment Tool 6 (SCAT6). All Club medical staff should be familiar with the SCAT6.

The Concussion Recognition Tool 6 (CRT6) is a simple guide outlining how to recognize and manage potential concussion. This can be used by non-medically trained team members including coaches, team managers, high performance staff, referees and parents.

4. Game/Training management – Community level

At the community level competition, where no routine medical support is provided, any player with a suspected or confirmed concussion should be removed from play for a medical assessment. The CRT6 is the best tool for this initial assessment by non-medically trained individuals (2). Any player suspected of concussion should not participate further in a game or training until cleared by a doctor.

The same principles apply to training, and if there is no medical support available, a player with a suspected or confirmed concussion should cease training and be referred for an assessment by a medical practitioner

5. Game management – Medical support present

At levels of competition where medical support is available, such as professional league competitions, where a concussion is diagnosed, or suspected, by a doctor based on observing the player at the time or following a neurological assessment which includes the SCAT6, the player must be immediately withdrawn from the game.

If a player during a game is suspected of concussion, is assessed and cleared by a doctor's neurological assessment, the player may return to play but requires regular monitoring and a further SCAT6 assessment post-game to exclude delayed onset concussion.

The SCAT6 is an enhanced multimodal assessment and its' use, alongside a medical neurological examination, is considered best practice.

All club medical staff working in basketball should be familiar with current best practice, the use of the SCAT6 and return to play guidance (refer the Appendix 'Concussion Management Guidelines for Professional Leagues').

6. Emergency care

A player diagnosed with concussion should have a through neurological examination to exclude more serious structural injuries to the brain, head and neck. If there are signs of a more serious condition being present, then the player should be immediately transferred to a hospital with a neurosurgical unit.

Signs suggesting a more serious injury might include repeated vomiting, altered conscious state, convulsions, severe headache, altered sensation in the arms of legs, double or blurred vision or a deterioration of any of these with time.

7. Return to training and play

The latest Consensus describes a period of rest for symptoms to settle followed by a 2nd stage of symptom free return to normal daily activities. The 3rd stage is graded return activity, a staged return to training, full training and then return to competition with a formal medical clearance.

Graduated Return to Play (GRTP) – each stage to take at least 24 hours, can be longer.

The GRTP starts AFTER the 24-48 hours of relative cognitive and physical rest

1. Light/moderate aerobic exercise (up to approx. 70% max HR), such as walking, slow jog or stationary bike
2. Simple basketball skills such as free throws and shooting as well as *jumping, sprints change of direction including head and neck movements*, away from team

ONLY progress to Step 3 once symptom free at rest and with exertion

3. Full intensity team training, for a limited duration, with no body contact, e.g. half court scrimmage for 20 to 30 minutes followed by basketball skills
4. Full *training*, including possible contact, ~~with~~ *following* medical clearance ~~to train and play~~
5. Return to play

Any return of symptoms requires a return stage 2

Generally, concussion symptoms will settle within 2-3 days and a player diagnosed with concussion is ready to return in about 2 weeks but individuals can vary significantly and the time required may be shorter or longer and must be guided by trained healthcare professionals.

For management in professional leagues see Appendix 'Concussion Management Guidelines for Professional Leagues'.

8. Baseline testing

Baseline testing is strongly recommended for players participating in professional competitions such as the WNBL. It is not recommended for lower levels of competition. It may include computerized cognitive testing such as CogState, ImPACT or the SCAT6 itself. The testing must return to baseline before a player can return to play.

9. Young players

Players 18 years of age or younger require a more conservative approach (1) and will usually require a longer recovery time, typically 3 weeks or longer. The primary aim of rehabilitation of a younger player is to ensure cognitive recovery and consideration of their educational needs.

A graded return to play for a child or young player is as follows:

- An initial period of 24-48 hours relative cognitive and physical rest
- Return to school in a staged approach, possibly starting with half days, longer breaks or deferring assignments
- Once successfully returned to school without any issues, can commence return to sport:
    - Light aerobic exercise and easy basketball skills such as shooting, dribbling and passing
    - Light training for a limited time and with no body contact, e.g. half court scrimmage
    - Full scrimmage with medical clearance
    - Return to play with final medical clearance

This means that to compete in a Basketball Australia Underage Competition such as the Nationals, a player who has been diagnosed with concussion will be required to have completed a recovery period of at least 3 weeks.

10. Difficult concussion

If concussion symptoms continue for more than 3 weeks, then the player should be referred to a neurologist or SEM physician who is experienced in the management of concussion. More than likely the player will be referred for a full neuropsychological assessment and other investigations such as imaging.

In difficult cases the specialist is responsible for clearing the player to return to full training and competition.

11. References and useful links

1. Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport - https://bjsm.bmj.com/content/57/11/695
2. CRT6 - https://bjsm.bmj.com/content/bjsports/57/11/692.full.pdf
3. SCAT6 - http://www.sportsconcussion.co.za/sportconcussion/wp-content/uploads/2023/07/SCAT6-v6.pdf
4. SCOAT6 - http://www.sportsconcussion.co.za/sportconcussion/wp-content/uploads/2023/07/SCOAT6-Instructions-v6.pdf
5. Child SCAT6 - http://www.sportsconcussion.co.za/sportconcussion/wp-content/uploads/2023/07/Child-SCAT6-v5.pdf
6. Child SCOAT - https://bjsm.bmj.com/content/bjsports/57/11/672.full.pdf
7. Dr Ruben Echemendia, PhD, University of Michigan Concussion Centre Clinic: presentation on the 2022 Consensus and changes to the concussion recognition and assessment tools - https://www.youtube.com/watch?v=5P0Jj5wT9GY
8. Clark & Olson SCAT6 Application Demonstration: a useful example of the SCAT6 examination - https://www.youtube.com/watch?v=ASA-o29HWHI
9. Australian Sports Commission guidelines - https://www.concussioninsport.gov.au

Appendix: Concussion Management Guidelines for Professional Leagues

1. Introduction

These Guidelines are applicable to professional and semi-professional competitions under the control of Basketball Australia and includes WNBL and NBL1.

Concussion is a traumatic brain injury, induced by biomechanical forces to the head, or anywhere on the body, which transmit an impulsive force to the head. It usually results in rapid onset and short-lived neurological impairment, but the symptoms may evolve over the minutes, hours or days following the injury. The symptoms generally resolve without specific medical intervention. A brief period of relative rest for 24-48 hours followed by gradual return to activity, is the main treatment, and return to play should be overseen by the Club Doctor, who is familiar with the guidelines for management of concussion.

Any Player with a diagnosed concussion may not continue to play in that game (or continue to train) and must be cleared by the Club Doctor before returning to full training or playing.

Any Player with a suspected concussion must be removed from training or play and be assessed by the Club Doctor or other suitably experienced Medical Practitioner prior to return to training or play.

Preseason baseline testing of all Players is required (SCAT6, Cognigram, ImPACT or other). Formal neuropsychological assessment may be considered for players with a history of multiple or complex concussions.

2. Diagnosis

(a) The diagnosis of concussion is clinical, with the presence of symptoms and signs suggestive of neurological dysfunction following direct trauma to the head or a transmitted force to the head. These might include loss of consciousness (which is relatively uncommon), convulsions or difficulty balancing or walking. Other symptoms and signs may be less obvious but include headache, dizziness, tinnitus, sensitivity to light or noise, nausea, poor concentration or memory. A full list of possible symptoms and signs can be found in the Sports Concussion Assessment Tool 6 (SCAT6). All Club medical staff should be familiar with the SCAT6

(b) The Concussion Recognition Tool 6 (CRT6) is a simple guide outlining how to recognize and manage concussion. This can be used by team medical staff as well as other non-medically trained team members including coaches, high performance staff or referees.

3. Game /Training Management

(a) Any Player with a suspected or confirmed concussion must be removed from play or training for a medical assessment. If a concussion is confirmed, the Player cannot return to play in that game or continue training. If there is any doubt, the Player must not continue to participate that day.

(b) If there is no Club Doctor on site, then any Player with suspected or confirmed concussion may **not** continue to play or train and must assessed by a doctor before being allowed to return to play

(c) In all cases of head trauma, **first aid principles** apply including consideration of emergency referral if there is suspicion of spinal injury (neck pain or weakness/tingling/burning in the arms or legs), increasing confusion, repeated vomiting, seizures or a deterioration of conscious state.

(d) The SCAT6 is the recommended concussion assessment tool. It should be used in addition to the usual medical assessment of an injured Player. Ideally it should be performed by the Club Doctor, but it is acknowledged that a physiotherapist might be the sole medical staff member in attendance. All Club Doctors and Physiotherapists should be familiar with use of the SCAT6.–The assessment should ideally be off the court, in a quiet area. If some cases, the SCAT6 assessment can be delayed to half or full time to enable a more thorough assessment as long as the Player is not permitted to play in the interim and is monitored to ensure there is no deterioration of mental state or development of symptoms.

(e) If concussion is excluded after a full assessment by the Club Doctor, the Player can return to play but must be regularly monitored for symptoms.

(f) When video of the incident is available, it should be reviewed by the assessing practitioner to confirm the mechanism of trauma and assist with detecting any subtle signs of concussion that might have been missed on the initial direct observation.

(g) Concussion is a clinical syndrome that can have a delayed onset or evolve over time. The Player should be instructed on what symptoms and signs to look for and instructed to report these should they occur.

(h) Clinical assessment notes should be stored confidentially in medical records.

Immediate and obvious signs of concussion, directly observed or on video review:

1. Loss of consciousness or prolonged immobility
2. No protective action in fall to floor
3. Impact seizure or tonic posturing one or more limbs
4. Confusion, disorientation
5. Memory impairment
6. Balance disturbance or ataxia
7. Player reports concussion symptoms
8. Dazed, blank stare, not their normal selves
9. Behaviour change atypical of the Player

The Player should be immediately removed from play and take no further part in the game.

4. Emergency Care

A Player diagnosed with concussion should have a through medical and neurological examination to exclude more serious structural injuries to the brain, head and neck. If there are signs of a more serious condition being present, then the Player should be immediately transferred to a hospital which has an emergency neurosurgical service. Signs suggesting a more serious injury might include

repeated vomiting, altered conscious state, convulsions, severe headache, altered sensation in the arms of legs, double or blurred vision or a deterioration of any of these with time.

5. Return to Play

(a) A Player diagnosed with concussion requires a clearance from a Medical Practitioner, ideally the Club Doctor, to return to full team training and playing. Under no circumstance is a Player with confirmed concussion allowed to return to play or training on the day of the injury. For the avoidance of doubt, the Club physiotherapist cannot clear a Player to return to training or playing on the day of injury or following the Graduated Return to Play (GRTP) process.

(b) In general, a Player will recover in 7 to 10 days but this can vary from individual to individual and in exceptional cases, the Player might be cleared to train and play sooner. This will only be at the clinical discretion, and upon approval from, the Club Doctor. In many cases, the return to play will take considerably longer than 10 days.

(c) An initial period of 24 – 48 hours relative physical and cognitive rest is required. Strict rest until complete resolution of symptoms has not been shown to be beneficial following sports related concussion.

(d) Following the initial 24-48 hour period of relative rest, the Player may enter the GRTP program which is outlined in Text Box 2 below. Entry to this program can start even with some mild persistent symptoms.

(e) The GRTP process, which starts after the 24-48 hours of relative rest, comprises six stages. All Players are expected to proceed through this process, with at least 24 hours per stage, and medical clearance prior to return to play.

(f) In the first two stages of the GRTP, some symptoms are acceptable, but these should be mild and short lived (ie. worsen no more than 2 points on a 10 point scale and last for less than one hour)

(g) In the final 3 stages of the GRTP, the Player must have no symptoms, either at rest or with intense activity. If there is recurrence of symptoms they should return to stage 2.

(h) The clearance to fully train and return to play should be made by the Club Doctor.

(i) Baseline testing (e.g., SCAT6, Cognigram, ImPACT or other cognitive assessment) must have returned to baseline before a Player can return to play.

(j) From a practical perspective, in rare instances where there is no Club Doctor, the Player will require at least two medical assessments. The first to confirm the diagnosis and commence the rehabilitation and the second to clear the Player for full training and play.

Graduated Return to Play (GRTP) – each stage to take at least 24 hours, can be longer (following the 24-48 hours of relative cognitive and physical rest)

1. Light/moderate aerobic exercise (up to approx. 70% max HR), such as walking, slow jog or stationary bike
2. Simple basketball skills such as free throws and shooting as well as *jumping, sprints change of direction including head and neck movements*, away from team

   ONLY progress to Step 3 once symptom free at rest and with exertion
3. Full intensity team training, for a limited duration, with no body contact, e.g. half court scrimmage for 20 to 30 minutes followed by basketball skills
4. Full *training*, including possible contact, ~~with~~ *following* medical clearance ~~to train and play~~
5. Return to play

Any return of symptoms requires a return stage 2

6. Complex Concussion Cases

If the clinical symptoms or signs resulting from a concussion persist beyond that which were anticipated, the Club Doctor could consider referral to a neurologist, neurosurgeon, SEM physician or other specialist in the management of concussion. Players with history of multiple concussions, or where the apparent mechanism of injury appears to be very low impact might also benefit from Specialist review. The Player may be referred for a full neuropsychological assessment and may require a standard MRI to exclude structural brain damage. Other investigations will be undertaken as determined by the specialist examination. The Club Doctor should facilitate referral to a specialist upon specific request by the Player.

In difficult cases, the specialist is responsible for clearing the Player to return to full training and competition.