POLICY & GUIDELINES FOR MANAGEMENT OF SPORT RELATED CONCUSSION

NATIONAL PROGRAMS & SUNCORP SUPER NETBALL COMPETITION

Version 2 - September 2021

BACKGROUND

In considering the best practice management of sport-related concussion (SRC), the priority remains the short and long-term welfare of the player.

The Netball Policy and Guidelines for the management of SRC have continued to be modified and enhanced. The basic concepts however adhere to the general principles of management outlined in the Consensus Statement from the 5th International Conference on Concussion in Sport (Berlin, 2016).

They have been refined to ensure they are applicable to the sport of Netball.

In following the Guidelines, the diagnosis of concussion and subsequent return to play remains an individual decision by the doctor, following the protocols and principles set forth in this document, utilising good clinical judgment and the evaluation of all the information available to the doctor at the time of the player's assessment.

These National Programs and Suncorp Super Netball (***SSN***) Guidelines specifically apply to National Programs and the SSN, where National Programs includes the Australian Netball Diamonds Squad, Australian Development Squad, Australian 21/U Squad and National Underage Squads. Separate, but related guidelines are in place for the National Netball Championships and Australian Netball Championships (the ***NNC/ANC Guidelines***) (collectively, with the National Programs and SSN Guidelines, referred to as the ***Guidelines***).

The Guidelines are supported by Netball Australia's Policy & Position Statement on Concussion in Netball dated xx August 2021 (the ***Policy & Position Statement on Concussion***).

CLINICAL CONSIDERATIONS

SRC is a traumatic brain injury induced by biomechanical forces. There are several common features that may be utilised in clinically assessing for the presence of a concussive episode:

- SRC may be caused by a direct blow to the head, face, neck or elsewhere on the body with an impulsive force transmitted to the head.
- SRC typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. In some cases, signs and symptoms evolve over a number of minutes to hours.
- The acute clinical symptoms and signs generally reflect a functional disturbance rather than a structural injury, and as such, no abnormality is seen on neuroimaging.

Diagnosis in this setting can be challenging for the clinician because:

- Clinical symptoms and signs may evolve over time.
- Many of the features are not specific to concussion, and may represent other injury.
- Structural brain injury can present with identical clinical features and cannot always be ruled out on initial assessment.
- Athletes may not always be forthcoming with symptom reporting due to a desire to remain on court.

In practical terms, a player with any neurological symptoms or signs, or video signs of concussion, and/or a disturbance of cognitive function or mental disturbance following a trauma (including indirect trauma with the potential for force translation) is considered to have a concussion requiring medical assessment and management. Consideration should always be given to a structural head injury, and the athlete assessed accordingly. If concussion is diagnosed appropriate, clinical management should follow and return to play protocols, as outlined in this document, should be completed.

PRE-SEASON SCREENING

Assessment of players during pre-season medical review for: number of concussions, history of prolonged recovery from concussion, and the player's previous management is essential.

It is recommended that all players have pre-season baseline neurological assessment and SCAT5. Baseline testing facilitates education of players and interpretation of post-injury test scores, which ultimately enhances decisions regarding diagnosis and assessment of recovery. Without baseline tests for comparison, a more conservative approach to diagnosis and return to play must be used.

More detailed baseline testing (including formal neuropsychological testing) is strongly recommended for any player with a significant concussion history (either number of concussions or history of prolonged recovery).

EDUCATION

It is important to provide concussion education to players, coaches and other medical staff (e.g. trainers).

Players should be provided with information so that they can recognise the common symptoms of concussion and know to report them, both during a match and in the subsequent days. Players, coaches and team physios also need to understand Suncorp Super Netball protocols including requirement for immediate removal for assessment if there is any suspicion of concussion (observed directly, observed on video or reported by other players/staff).

GAME DAY MANAGEMENT

1. OBSERVATION

A doctor is in attendance at all National Programs and SSN games (in the SSN, usually the home team's doctor or may be an independent doctor).

The doctor will be observing play. The doctor can also be notified of a concerning incident by the team physiotherapist or other bench staff. The incident can be reviewed in the Netball App which allows for replays. Other National Programs/SSN medical staff watching the game may also notify the team doctor of a possible concussive event.

2. INITIAL RESPONSE

After observing, or being notified of a possible SRC, the doctor must decide whether the player requires immediate removal from play for further assessment.

In the event that a concussion is sustained during an SSN Match, the Match Day Doctor (whether Home team doctor or independent doctor appointed for the match) has the authority to call time and remove any athlete from the court for assessment and management of concussion. National Programs are subject to World Netball Rules.

If an athlete is removed by the doctor, the athlete must not re-enter the court, until cleared by the doctor, without interference of the physiotherapist or other support staff.

This decision can be difficult, as it may involve stopping play, or recommending the player is substituted off. If a player requires removal from play, this must be clearly communicated with the club physiotherapist and coach on the bench. Coaches should be aware that this may occur in the interests of player welfare.

Removal from play can be considered under the following categories:

A. **Clear diagnosis of concussion. Requires immediate removal and no return to game**

- Loss of consciousness
- No protective action on falling to the ground
- Impact seizure
- Motor incoordination
- Dazed or vacant look or player not her normal self
- Behaviour change atypical of the player
- Confusion or disorientation

B. **Possible (likely) diagnosis of concussion. Requires removal from play for further assessment and decision on return to game**

- Lying motionless for > 2 seconds
- Possible tonic posturing or impact seizure
- Possible motor incoordination
- Any clinical impression from doctor that the player is not quite right following a trauma
- Facial injury

C. **Unclear but concerned. Requires assessment at next available opportunity (rotate off or break in game) and decision on return to play**

The doctor should be alert to other signs that have been validated as correlating with a possible diagnosis of concussion. These signs include:

- Clutching at head/face
- Slow to get up
- Poor decision making/unusual errors on court

3. ASSESSMENT AND MANAGEMENT

A. **Where there is a clear diagnosis of concussion:**

- The athlete should be medically evaluated in accordance with standard emergency management principles, with attention given to excluding a cervical spine injury.
- Assessment for a structural head injury should be undertaken, and the athlete transported to hospital via an ambulance if there are abnormal neurological signs or signs of a structural head/neck injury.
- The player must be re-assessed for deterioration.
- **The player must not be returned to the court on the day of injury.**

B. **Where the diagnosis is possible/likely:**

- The player should be removed from the court.
- Assessment should take place in a quiet, distraction free environment.
- The player should be allowed to rest for a couple of minutes prior to assessment if feasible.
- Video review can be undertaken where available (Netball app).

- The player should be fully assessed, using the SCAT5* and compared with baseline.

  (Note: baseline SCATs should be accessible by home team doctor on AMS and be available as a hard copy from the away team physio.)

- In the case that a full assessment has taken place (history, full assessment +/- video review where available) and no diagnosis of concussion is made, the doctor can then make the decision to return the athlete to play.

  (*The SCAT5 is not in itself diagnostic, but a tool to assist with decision making. If there is any clinical suspicion by the assessing doctor, but the player has recorded a 'normal' SCAT5, a cautious approach is recommended. The diagnosis of concussion remains a clinical decision based on the serial assessment in a range of domains including symptoms, signs, cognitive impairment and neuro-behavioural changes.)

C. Unclear but some concerns:

- Assess at next available opportunity.
- Obtain history of the incident from player (symptoms, memory impairment).
- Maddock's Questionnaire - Full assessment if cannot answer.
- Continue to monitor throughout the game, and remove from play for further assessment if clinical concerns evolve regarding a possible concussion.

4. FOLLOW UP

A. For diagnosed concussion

If an away team player: Home team doctor to discuss initial management with physiotherapist and then hand over to Club Doctor (if not in attendance) as soon as able.

Home team player: doctor to organise follow up review.

National Programs: team doctor will manage the concussion.

B. If concussion is not diagnosed and player returned to play on the day

Because symptoms can evolve over time, the athlete must be observed and reassessed throughout, after, and in the days following the match for symptoms, with appropriate hand over and follow up with the club physiotherapist and doctor.

RETURN TO PLAY

Decisions regarding return to sport (training or match play) following SRC rely on a multi-faceted clinical approach managed by the Team/Club Doctor. The Team/Club Doctor must provide clearance for the athlete to resume training and match play in line with these Guidelines.

The minimum requirement is that a player must have: returned to baseline level of symptoms and cognitive performance (if available), had resolution of all neurological signs, and have completed a graded loading program without recurrence of symptoms or signs of SRC.

Early management following SRC is focused on relative rest to allow the player to recover from their injury. This is followed by a graded loading program which is designed to allow a conservative approach to recovery, with incremental increases in physical +/- cognitive load to ensure that concussion-related symptoms or signs do not recur.

A player with SRC cannot commence a graded loading program without recording a SCAT5 that has returned to baseline (without the requirement for pharmacotherapy to treat concussion-related symptoms).

In following these guidelines, the earliest that a player can return to play after a concussion is 12 days.

For players with concussion-related symptoms or clinical signs that persist beyond 48 hours a slower return to play strategy should be adopted (e.g. by extending the number of non-contact, limited contact and full contact training sessions that the player participates in before clearance for unrestricted return to play).

A more conservative approach is important in cases where symptoms or clinical features persist beyond 48 hours; or those with any "modifying" factors i.e. young players, multiple concussions, learning disabilities, high symptom burden in the first few days after injury etc. In these cases, a greater period of initial rest may be required; and each stage of the graduated loading program should be conducted over a longer period of time (e.g. by extending the number days between progressions, or increasing the number of days held at each stage of the graded return to play).

DIFFICULT OR COMPLICATED CASES

Cases in which symptoms or clinical features (e.g. cognitive deficit) persists for more than seven days; complicated cases; second or subsequent concussions in one season or cases involving decisions regarding retirement due to SRC, should be managed in a multi-disciplinary manner. In any such case, it is strongly recommended that the Team/Club Doctor involve an independent clinician with expertise in concussion management, to assist in management decisions.

INVESTIGATIONS

The Netball Australia Chief Medical Officer, in their absolute discretion, may initiate an investigation into any alleged breaches of the Guidelines.

Disciplinary action under contract or the Suncorp Super Netball Team Participation Agreement may be pursued by Netball Australia on the advice of the Netball Australia Chief Medical Officer, in consultation with the Netball Australia Head of Integrity.

Table 1: Guideline for minimum return to play following concussion

STEP	REST	RECOVERY	GRADED LOADING – INDIVIDUAL PROGRAM			GRADED LOADING - FULL TEAM TRAINING					
Components	Rest	Symptom-limited activity	Light aerobic exercise	Moderate aerobic exercise	Sport-specific exercise	Non-contact training	Recovery	Limited contact training	Recovery	Full contact	Recovery
Goal		Daily activities that do not provoke symptoms	Light aerobic exercise (e.g. walking / jog / cycling at slow to medium pace) No resistance training	Moderate aerobic exercise (i.e. Increased heart rate) No resistance training	Increased intensity and duration of activity Add sports specific drills (e.g. passing, shooting) Commence light resistance training	Return to full team training sessions – non-contact only	Can participate in other components of the training program (e.g. weights)	Full team training – but able to participate in drills with incidental contact	Can participate in other components of the training program (e.g. weights)	Full team training	Can participate in other components of the training program (e.g. weights)
Duration	24-48 hours	Minimum 24 hours	Minimum 24 hours	Minimum 24 hours	Minimum 24 hours	At least 1 day between sessions to monitor for recurrence of symptoms		At least 1 day between sessions to monitor for recurrence of symptoms		At least 1 day between sessions to monitor for recurrence of symptoms	
Requirements to move to next stage		24 hours completely free of concussion related symptoms and medical clearance to enter graded loading program	Remain completely free of any concussion-related symptoms	Remain completely free of any concussion-related symptoms	Remain completely free of any concussion-related symptoms and medical clearance to commence full team training	Remain completely free of any concussion-related symptoms – and player confident to participate in training		Remain completely free of any concussion-related symptoms – and player confident		Remain completely free of any concussion-related symptoms – player confident to participate in training – and medical clearance for unrestricted return to play	

SUMMARY

- Player welfare must remain at the centre of decision making.
- In the event that a concussion is sustained during an SSN Match, the Match Day Doctor has the authority to call time and remove any athlete from the court for assessment and management of concussion. If an athlete is removed by the Match Day Doctor, the athlete must not re-enter the court, until cleared by the Match Day Doctor.
- If a concussion has been diagnosed, then that player cannot return to play the same day and must be cleared by the Club Doctor to resume training and match play.
- The SCAT5 is a diagnostic tool, and must be assessed along with the mechanism of injury and overall clinical impression to make a decision on a diagnosis.
- If in doubt, a cautious approach is recommended.
- Video review of the incident is strongly recommended, where possible.
- Follow up with the Club Doctor must be arranged for all athletes with a head impact, regardless of whether a concussion was diagnosed.
- The game day and subsequent assessment should be included in AMS notes by club practitioners.

DEFINITIONS

Lying Motionless

Lying without purposeful movement on the playing surface for more than two seconds. Does not appear to move or react purposefully, respond or reply appropriately to the game situation (e.g. team mates, umpires or medical staff). Concern may be shown by other players or match officials

Tonic Posturing

Involuntary sustained contraction of one or more limbs (typically upper limbs), so that the limb is held stiff despite the influence of gravity or the position of the player. The tonic posturing could involve other muscles such as the cervical, axial, or lower limb muscles. Tonic posturing can be observed whilst the player is on the playing surface, or in the motion of falling.

No Protective Action

Falls to the playing surface in an unprotected manner without stretching out hands or arms to minimise the impact of the fall, after direct or indirect contact to the head. The player demonstrates loss of motor tone before landing on the playing surface.

Impact Seizure

Involuntary clonic movements that comprise periods of asymmetric and irregular rhythmic jerking of axial or limb muscles.

Slow to get up

Remains sitting or lying on the court despite play continuing.

Motor Incoordination

Appears unsteady on feet including losing balance, staggering/stumbling, struggling to get up or falling. This may also occur in the upper limbs which will be observed as fumbling. Incoordination can occur both in the motion of getting up off the court or in the motion or walking or running.

Blank/Vacant Look

Player exhibits no facial expression or apparent emotion in response to environment.

Facial injury

Any facial laceration, facial bleeding, blood coming from mount, epistaxis or apparent eye injury.

REFERENCES

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2. Patricios J, Fuller GW, Ellenbogen R, et al. What are the critical elements of sideline screening that can be used to establish the diagnosis of concussion? A systematic review. Br J Sports Med 2017 doi: 10.1136/bjsports-2016-09744

Reference Number:	HP005.01
Title:	Policy & Guidelines for Management of Sport Related Concussion – National Programs and SSN
Effective Date:	3 September 2021
Author:	Chief Medical Officer
Owner:	EGM Performance (or comparable position)
Approval Level:	NA Board
Date Last Reviewed:	July 2021
Scheduled Review Date:	Annual (February 2022)
Supersedes:	All previous policies, guidelines and/or statements