# Netball Australia

# POLICY & POSITION STATEMENT ON CONCUSSION IN NETBALL

3 September 2021

# NETBALL AUSTRALIA POLICY & POSITION STATEMENT ON CONCUSSION IN NETBALL

*Netball Australia pays respect to the traditional custodians of our ancient continent, Aboriginal and Torres Strait Islander peoples, we honour their continuing connection to country and their custodianship of the world's oldest living culture.*

*Where relevant, in this Position Statement – reference to Netball Australia includes Suncorp Super Netball and the Confident Girls Foundation.*

***Netball Australia's Purpose**: Netball empowers girls and women to shine, while enriching and connecting communities.*

***Suncorp Super Netball's Purpose**: Inspire generations and strengthen netball.*

***Confident Girls Foundation's Purpose**: Empowering marginalised girls through netball.*

## 1. PURPOSE

1.1. Netball Australia (***NA***) recognises the need for a Policy & Position Statement on Concussion in Netball to guide the response and treatment of concussion at national level events and competitions through competition specific guidelines for the Australian Netball Diamonds, Australian Development Squad, Australian 21/U Squad, National Underage Squads (***National Programs***), Suncorp Super Netball (***SSN***), NA's pathway programs (National Netball Championships (***NNC***) and the Australian Netball Championship (***ANC***)).

1.2. NA also recognises a need for advice and information to assist netball's member organisations, associations and clubs address concussion at the community level.

1.3. Although the prevalence of concussion in netball is low, concussion in sport has increasingly become a significant public health issue. The primary purpose of this Policy & Position Statement and the related Guidelines is to protect the welfare of netballers. Accurate diagnosis and management are needed to ensure that a concussed netballer is appropriately identified, managed and safely returned to play.

1.4. NA acknowledges peak medical bodies with expertise in the area of concussion identification and management have produced valuable resources accessible to all the different stakeholders within sport including netballers, parents and coaches and medical staff. These resources will be referred to in this document and are available at www.concussioninsport.gov.au.

## 2. WHAT IS SPORT RELATED CONCUSSION?

2.1. Sport related concussion (***SRC***) is a traumatic brain injury induced by biomechanical forces.

2.2. SRC may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an impulsive force transmitted to the head.

2.3. SRC typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. However, in some cases, signs and symptoms evolve over a number of minutes to hours.

2.4. SRC may result in neuropathological changes, but the acute clinical signs and symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.

2.5. SRC results in a range of clinical signs and symptoms that may or may not involve loss of consciousness.

2.6. Resolution of the clinical and cognitive features typically follows a sequential course. However, in some cases, symptoms may be prolonged.

2.7. The clinical signs and symptoms cannot be explained by drug, alcohol, or medication use, other injuries (such as cervical injuries, peripheral vestibular dysfunction, etc) or other comorbidities (eg, psychological factors or coexisting medical conditions).

## 3. RECOGNISING CONCUSSION

3.1. Concussion can be very difficult to detect.

3.2. Concussion symptoms and signs can be varied, non-specific and subtle.

3.3. Recognising concussion is critical to ensure appropriate management and prevention of further injury.

3.4. ***Non-medical assessment tool:*** The Concussion Recognition Tool 5 (CRT5) is recommended to help ***non-medical practitioners*** recognise the signs and symptoms of concussion (Concussion recognition tool 5© (bmj.com)).

## 4. MANAGING CONCUSSION

4.1. Use first aid principles in the management of the netballer with suspected concussion – including first aid principles for protection of the cervical spine.

4.2. Remove any netballer with a suspected concussion from the sport immediately – they should not return to sport that day.

4.3. Seek medical care from a medical practitioner.

4.4. Refer any serious injuries (such as neck pain, increased confusion, agitation or irritability, repeated vomiting, seizure, weakness or tingling/burning in the arms or legs, reduced level of consciousness, severe or increasing headache, or unusual behaviour) to the closest emergency department.

4.5. Concussion is a condition that evolves. Netballers suspected of, or diagnosed with, concussion require close monitoring and repeated assessment.

## 5. MEDICAL ASSESSMENT OF CONCUSSION

5.1. Any netballer with a suspected concussion requires a medical assessment.

5.2. There is no single test that can determine whether someone has sustained a concussion.

5.3. The diagnosis of concussion should be based on a clinical history and examination that includes a range of domains such as mechanism of injury, symptoms and signs, cognitive functioning and neurology, including balance assessment.

5.4. ***Medical assessment tools:***

5.4.1. ***ADULTS (INCLUDING CHILDREN AGED 13 – 18 YEARS):*** SCAT5 is the internationally recommended concussion assessment tool for ***medical practitioners*** and covers the above-mentioned assessments. This should not be used in isolation, but as part of the overall clinical assessment (Sport concussion assessment tool - 5th edition (bmj.com)).

5.4.2. ***CHILDREN AGED 5 TO 12 YEARS:*** Child SCAT3 has been developed for use in children aged 5 to 12 years old to accommodate for physical, cognitive and language development (263.full.pdf (bmj.com)).

## 6. TREATMENT AND RETURN TO PLAY

6.1. The main treatment for concussion is rest (physical and cognitive).

6.2. This includes physical rest as well as time off school or work and deliberate rest from cognitive activity, for at least 24–48 hours.

6.3. After this period and subject to medical advice, the netballer may return to light intensity physical activity as long as such activity does not cause a significant and sustained deterioration in symptoms. You should seek medical advice should there be a deterioration in symptoms. (https://www.concussioninsport.gov.au/__data/assets/pdf_file/0008/683648/Return_to_Sport_Protocol_-_adults_over_18_years_of_age.pdf)

*6.4.* ***CHILDREN AND ADOLESCENTS (U18):*** Children and adolescents take longer to recover from concussion. They should be advised to wait a minimum of 14 days from when symptoms cease before returning to full contact/collision activities in line with medical advice. (https://www.concussioninsport.gov.au/__data/assets/pdf_file/0009/683649/Return_to_Sport_Protocol_-_children_18_years_of_age_and_under.pdf)

6.5. There should be a graduated return to school/work and increased physical activity as long as this does not cause a deterioration of symptoms.

6.6. The time to return to full contact sport will vary depending on the netballer's symptoms, in line with medical advice.

6.7. The long-term consequences of concussion, and especially multiple concussions, are not yet clearly understood.

## 7. SPECIFIC COMPETITION GUIDELINES

7.1. NA Competitions

7.1.1. Guidelines for the management of concussion have been prepared by the NA CMO in consultation with concussion medical experts, SSN and NA medical staff for use during NA competitions:

- Policy & Guidelines for the Management of Sports Related Concussion – National Programs & SSN
- Policy & Guidelines for the Management of Sports Related Concussion – NNC/ANC

7.2. Community Netball

7.2.1. Community Netball competitions are encouraged to follow the community advice provided below to educate participants in their netball programs about concussion and its safe management:

https://www.concussioninsport.gov.au/coaches_and_support_staff#how_to_recognise_concussion

https://www.concussioninsport.gov.au/parents_and_teachers

https://www.concussioninsport.gov.au/athlete

## 8. USEFUL LINKS/RESOURCES

Concussion in Sport Australia Website resource
https://www.concussioninsport.gov.au/

AIS/ACSEPSMA/ Combine Position statement on concussion in sport
https://www.concussioninsport.gov.au/__data/assets/pdf_file/0005/683501/February_2019_-_Concussion_Position_Statement_AC.pdf

NICE: Head injury assessment & management in children
https://www.nice.org.uk/guidance/cg176/chapter/1-recommendations

Pocket Recognition Tool
http://bjsm.bmj.com/content/47/5/267.full.pdf

SCAT5 Adult – Sport Concussion Assessment Tool
http://bjsm.bmj.com/content/47/5/259.full.pdf

SCAT5 Child – Sport Concussion Assessment Tool
http://bjsm.bmj.com/content/47/5/263.full.pdf

## 9. POLICY & POSITION STATEMENT REVIEW

This Policy & Position Statement is subject to ongoing monitoring and review by NA at its sole discretion and depending on the needs of the business.

## 10. REFERENCES


1. McCrory P, Meeuwisse W, Dvorak J, et al. Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October. Br J Sports Med 2017; https://bjsm.bmj.com/content/bjsports/early/2017/04/26/bjsports-2017-097699.full.pdf
2. Makdissi M, McCrory P, Ugoni A, Darby D, Brukner P. A prospective study of postconcussive outcomes after return to play in Australian football. Am J Sports Med 2009;37:877–83.
3. Kemp SP, Hudson Z, Brooks JH, Fuller CW. The epidemiology of head injuries in English professional rugby union. Clin J Sport Med 2008;18:227–34.
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5. Aubry M, Cantu R, Dvorak J, et al. Summary and agreement statement of the First International Conference on Concussion in Sport, Vienna 2001. Recommendations for the improvement of safety and health of athletes who may suffer concussive injuries. Br J Sports Med 2002;36:6–10.

6. McCrory P, Johnston K, Meeuwisse W, et al. Summary and agreement statement of the 2nd International Conference on Concussion in Sport, Prague 2004. Br J Sports Med 2005;39:196–204.

7. McCrory P, Meeuwisse W, Johnston K, et al. Consensus Statement on Concussion in Sport: the 3rd International Conference on Concussion in Sport held in Zurich, November 2008. Br J Sports Med 2009;43 Suppl 1:i76–90.

8. http://bjsm.bmj.com/content/47/5/259.full.pdf

9. Makdissi M, Davis G, Jordan B, Patricios J, Purcell L, Putukian M. Revisiting the modifiers: how should the evaluation and management of acute concussions differ in specific groups? Br J Sports Med 2013;47:314–20.

10. Davis GA, Purcell LK. The evaluation and management of acute concussion differs in young children. Br J Sports Med 2014;48:98–101.

11. http://bjsm.bmj.com/content/47/5/263.full.pdf

## END

| | |
|---|---|
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# 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)<br>No resistance training | Moderate aerobic exercise (i.e. Increased heart rate)<br>No resistance training | Increased intensity and duration of activity<br>Add sports specific drills (e.g. passing, shooting)<br>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 | |

- Regular monitoring is essential. If symptoms recur, the player athlete should go back to the previous symptom-free step.
- Medical clearance is required before entry into the graded loading program; progression to team training; and final clearance to 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

1. McCrory P, Meeuwisse W, Dvorak J, et al. Consensus statement on concussion in sport-the 5th international conference on concussion in sport held in Berlin, October 2016. Br J Sports Med 2017 doi: 10.1136/bjsports-2017-097699
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

| | |
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| **Supersedes:** | All previous policies, guidelines and/or statements |

# POLICY & GUIDELINES FOR MANAGEMENT OF SPORT RELATED CONCUSSION

## NATIONAL NETBALL CHAMPIONSHIPS & AUSTRALIA NETBALL CHAMPIONSHIPS

Version 1 - 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, and the rules of the 2021 National Netball Championships (***NNC***) and 2021 Australian Netball Championships (***ANC***), referred to as the ***NNC/ANC Guidelines***.

In following the Guidelines, the diagnosis of concussion and subsequent return to play remains an individual decision by a 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 NNC/ANC Guidelines specifically apply to the NNC and the ANC. Separate, but related guidelines are in place for National Programs and the Suncorp Super Netball (***SSN***) (collectively, with the NNC/ANC 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, an athlete 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:

- the number of concussions;
- history of prolonged recovery from concussion; and
- the athlete'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 athlete with a significant concussion history (either number of concussions or history of prolonged recovery).

## EDUCATION

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

Athletes 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. Athletes, coaches and team physios also need to understand the NNC/ANC Guidelines including requirement for immediate removal for assessment if there is any suspicion of concussion (observed directly, observed on video or reported by other athletes/staff).

## GAME DAY MANAGEMENT

### 1. OBSERVATION

Each Team participating in the NNC and ANC will travel with a team physiotherapist, who is in attendance at all NNC/ANC games.

Each physiotherapist is responsible for observing play. The physiotherapist can also be notified of a concerning incident by the other team or bench staff. Other medical staff watching the game may also notify the team physiotherapist of a possible concussive event.

### 2. INITIAL RESPONSE

After observing, or being notified of a possible SRC, the physiotherapist must decide whether the athlete requires immediate removal from play for further assessment. This decision can be difficult, as it may involve stopping play, or recommending the athlete is substituted off. If an athlete requires removal from play, this should be clearly communicated with the Team coaching staff on the bench. Coaches should be aware that this may occur in the interests of player welfare.

Notwithstanding the above, where the NNC/ANC Doctor is in attendance, the NNC/ANC 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 NNC/ANC Doctor, the athlete must not re-enter the court, until cleared by the NNC/ANC Doctor, without interference of the physiotherapist or other support staff. 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 athlete not her normal self
- Behaviour change atypical of the athlete
- Confusion or disorientation

**B. Possible (likely) diagnosis of concussion. Requires removal from play for further assessment and no return to game until a medical assessment is performed**

- 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. e.g. head clash. Requires assessment at next available opportunity (rotate off or break in game) and decision on return to play**

The physiotherapist 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.
- The player must not be returned to the court until a formal medical assessment is performed

**C. Unclear but some concerns:**

- Assess at next available opportunity.
- Obtain history of the incident from player (symptoms, memory impairment, use Maddocks questions).

- If concussion is suspected the athlete should be removed from play and not returned until a formal medical assessment is performed.
- Even if this initial assessment does not indicate concussion, the athlete should continue to be monitored throughout the game, and removed from play for further assessment if clinical concerns evolve regarding a possible concussion.

### 4. FOLLOW UP

A NA NNC/ANC Doctor (available at venue during specific clinic times) will be appointed to conduct all concussion assessments and to discuss initial management with the team physiotherapist at the NNC/ANC.

Because symptoms can evolve over time, the athlete must be observed and reassessed throughout, after, and in the days following the incident for symptoms, with appropriate follow up with the physiotherapist and NA NNC/ANC Doctor.

If an athlete has returned to their home state, they must be referred to their local doctor for ongoing observation and reassessment. Ideally, the doctor will have some experience in concussion management, however, this is not mandatory.

## RETURN TO PLAY

Once SRC has been formally diagnosed, decisions regarding return to sport (training or match play) rely on a multi-faceted clinical approach managed by a doctor.

The minimum requirement is that an athlete must:

- have returned to baseline level of symptoms and cognitive performance);
- 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 athlete 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.

An athlete with SRC cannot commence a graded loading program without symptoms having returned to baseline (without the requirement for pharmacotherapy to treat concussion-related symptoms), ideally with comparison to a baseline SCAT5.

In following these guidelines, the earliest that an athlete can return to play a netball game after a concussion is 12 days.

For athletes 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 athlete 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 athletes, 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 NA CMO is consulted to ensure that a clinician with expertise in concussion management is available 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 NNC/ANC Guidelines.

Disciplinary action may be pursued by Netball Australia in accordance with the Netball Integrity Framework 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)<br>No resistance training | Moderate aerobic exercise (i.e. Increased heart rate)<br>No resistance training | Increased intensity and duration of activity<br>Add sports specific drills (e.g. passing, shooting)<br>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 | |

- Regular monitoring is essential. If symptoms recur, the athlete should go back to the previous symptom-free step.
- Medical clearance is required before entry into the graded loading program; progression to team training; and final clearance to return to play.

## SUMMARY

- Athlete welfare must remain at the centre of decision making.
- Where the NNC/ANC Doctor is in attendance, the NNC/ANC 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 NNC/ANC Doctor, the athlete must not re-enter the court, until cleared by the NNC/ANC Doctor.
- Where there is no NNC/ANC Doctor in attendance, the team physiotherapist 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 team physiotherapist, the athlete must not re-enter the court, unless cleared by the team physiotherapist.
- If a concussion has been diagnosed, then that athlete cannot return to play the same day. The athlete must have a medical assessment and then progress through the graduated return to play protocols.
- If there is a possible/likely diagnosis of concussion the athlete cannot return to play until concussion has been excluded by the NA NNC/ANC Doctor or their local doctor (if returned to home state).
- If there is an incident where it is unclear whether concussion has occurred and the initial assessment by the team physiotherapist indicates no concussion, the athlete should still be monitored for the development of symptoms over the next 24 hours and a medical assessment must be performed if any symptoms develop.
- 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.
- The game day and subsequent assessment should be included in AMS notes by team physiotherapists and the NA NNC/ANC Doctor.

## 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 athlete. 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.

## RELATED DOCUMENTS

Netball Australia's Position Statement on Concussion in Netball dated 16 June 2021

Guidelines for the Management of Sports Related Concussion – Suncorp Super Netball

## REFERENCES

1. McCrory P, Meeuwisse W, Dvorak J, et al. Consensus statement on concussion in sport-the 5th international conference on concussion in sport held in Berlin, October 2016. Br J Sports Med 2017 doi: 10.1136/bjsports-2017-097699
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

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