# Guidelines for the Management of Concussion in Rugby League.

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| **TYPE OF POLICY** | Participation |
| **EFFECTIVE DATE** | 26th February 2019 |
| **POLICY OWNER** | Australian Rugby League Commission |
| **POLICY CONTACT** | NRL Participation & Game Development Operations Manager |

## A. REASON FOR GUIDELINES

These guidelines have been developed based on the Consensus Statement produced from the 5th International Conference on Concussion in Sport to ensure that First Responders, Medical Practitioners, Coaches and Parents have an awareness of how to appropriately manage concussion in Rugby League.

## B. GUIDELINES STATEMENT

These guidelines will provide the opportunity for First Responders and Medical Practitioners to have an awareness recognising the signs and symptoms of concussion, the appropriate management of a suspected concussion and the graduated return to sport process once a concussion has been diagnosed.

## C. SCOPE

This policy is applicable to District, Division, Group or Leagues that participate in Rugby League under the Community On-field Policy.

# Guidelines for the Management of Concussion in Rugby League.

## 1.0. INTRODUCTION

These Guidelines are based on the Consensus Statement produced following the 5th International Conference on Concussion in Sport held in Berlin in October 2016. The Guidelines should be followed at all times and any decision regarding return to play after concussive injuries should only be made by a doctor with experience in dealing with such injuries.

The NRL also supports the Concussion in Sport Australia Position Statement and recommends it as a valuable resource for First Responders, Medical Practitioners, coaches, parents and others involved in community rugby league (https://www.concussioninsport.gov.au).

## 2.0. SUMMARY

• The most important element in the management of concussion must always be the welfare of the player - in both the short and long term. All players with concussion, or suspected of having a concussion, should seek urgent medical assessment.

• Concussion is a disturbance in brain function resulting from trauma that is transmitted to the brain either directly or indirectly. There is no absolute need for direct head impact for a concussion to occur. There are no structural changes (e.g. brain bleeds) and the changes that do occur are temporary and recover spontaneously.

• Complications can occur if a player continues playing before they have fully recovered from a concussion. Therefore, a player who is suspected of having a concussion must be taken out of the game or training session immediately. A player who has suffered a concussion or potential concussion or exhibits the symptoms of concussion should not return to play in the same game (or on the same day), even if they appear to have recovered. Concussion is an evolving condition which may develop over minutes to hours (and sometimes days). Some symptoms or signs may resolve only to be replaced by others later. The management of head injuries may be difficult for non-medical personnel. It is often unclear whether you are dealing with concussion, or there is a more severe structural head injury, especially in the early phases of an injury. Concussion is considered a medical condition and therefore needs to be assessed and managed by an appropriately qualified doctor.

• In the period following a concussion, a player should not be allowed to return to play or train until they have had a formal medical clearance using the NRL Head Injury Recognition and Referral form by a doctor.

• A Graduated Return to Play Program (as outlined below) should be followed to manage the return to training and/or play following a concussion. Children and adolescents generally take longer to recover from a concussion and additional time (around double that of an adult) should be allowed in developing a return to play/training program for a child or adolescent.

• Players suspected of having a concussion must not be allowed to drive, operate machinery, drink alcohol, take anti-inflammatory medication (including aspirin and Ibuprofen), or use strong painkillers or sleeping tablets until they have been medically cleared to do so by a doctor.

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## 3.0. BACKGROUND

When considering the management of concussion, the welfare of the player - both in the short and long term - must always remain paramount.

Since 2001, there have been five international conferences addressing the key issues in the understanding and management of concussion. After each meeting, a summary has been published to improve the safety and health of athletes who suffer concussive injuries during participation in sport. The most recently published conference was held in Berlin in October 2016. The summary from the Berlin meeting provides consensus guidelines for current best practice management of concussion(1). The NRL's current guidelines for the management of concussion are based on the Berlin conference, as well as research conducted on concussion in the NRL, World Rugby, AFL and other international sports over a number of years.

The NRL also supports the Concussion in Sport Australia Position Statement and recommends it as a valuable resource for trainers, first aid providers, coaches, parents, medical practitioners and others involved in community rugby league (https://www.concussioninsport.gov.au).

## 4.0. WHAT IS CONCUSSION?

"Traumatic Brain Injury" (TBI) is the term used to describe injuries to the brain that are caused by trauma. The most severe injuries involve structural damage e.g. fractures of the skull, bleeding in or around the brain. These structural injuries require urgent medical attention.

Concussion falls into the milder spectrum of TBI (mTBI = mild traumatic brain injury) and involves a disturbance of brain function with no structural damage and no probable permanent injury to the brain.

Concussion is caused by trauma to the brain, which can be either direct contact with the head (e.g. head clash) or indirect by a force to any part of the body transmitted to the head (e.g. shoulder charge or tackle). When the force is transmitted to the brain it can "stun" the nerve tissue and affect the way the nerves work. This can result in a number of symptoms and signs depending on the area of brain that is affected. Concussions, therefore, present in many different ways and the symptoms and signs often change or evolve over time.

Symptoms include but are not limited to headache, blurred vision, dizziness, nausea, poor balance, fatigue and feeling "not quite right". A concussed player may also exhibit confusion, memory loss and reduced ability to think clearly and process information. Loss of consciousness is not common and occurs in less than 10% of cases of concussion. ***A player does not have to lose consciousness to have concussion.***

The essential injury in concussion is functional disturbance rather than structural damage. The changes that occur are temporary and usually recover spontaneously if managed correctly. The recovery period and process varies from person to person and injury to injury.

Most cases of concussion in Rugby League recover within 7-14 days from the time of injury, although in a small number of cases the recovery time may be weeks to months. Children and adolescents (18 years old and younger) may take longer to recover.

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## 5.0. HOW COMMON IS CONCUSSION IN RUGBY LEAGUE?

Concussion is relatively common in Rugby League. In the past 4-5 years the incidence in the NRL's elite competition has been 5-7 concussions per team per season.

## 6.0. WHAT ARE THE POTENTIAL COMPLICATIONS FOLLOWING CONCUSSION?

The complications which can possibly occur following a concussion include:

- Increased risk of other musculoskeletal injury (possibly due to reduction in reaction time) or repeated concussion (with the second injury often much more severe than the first);
- Prolonged symptoms;
- Symptoms of depression, anxiety and other psychological problems;
- Severe brain swelling (especially in young players); and
- Potential long-term brain malfunction/degeneration (not currently definitively proven).

Complications are not common, however, the risk of complications from a concussion is increased by allowing the player to return to play (or training) before they have recovered completely. It is therefore essential to recognise a possible concussion, confirm the diagnosis with a doctor, and keep the player out of training and competition until the player has recovered completely.

Concussion can cause problems with memory and processing of information, which interferes with the player's ability to learn in the classroom, therefore, a child or adolescent should not return to school until cleared by a medical practitioner to do so. A successful return to school should occur before attempting a return to training or sport.

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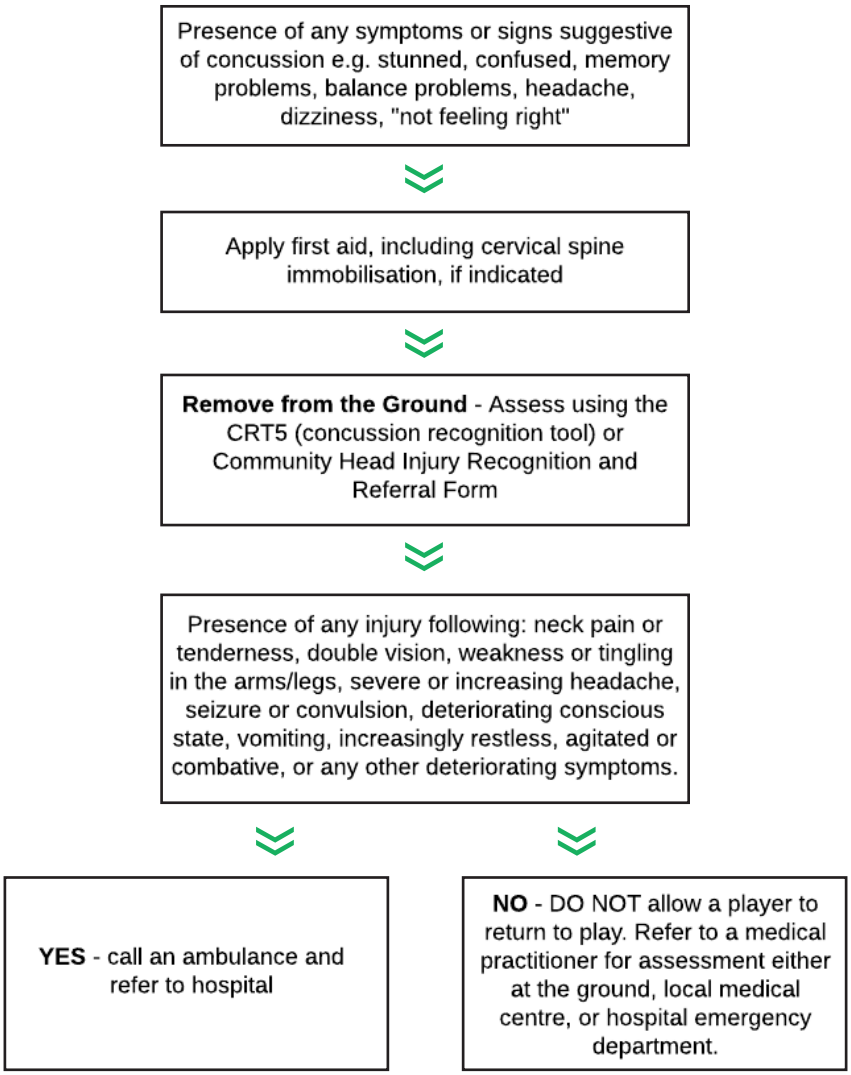
## 7.0. STEPS IN THE MANAGEMENT OF CONCUSSION




**NOTE:** Any player with a loss of consciousness, basic first aid principles should be applied i.e. **D**anger, **R**esponse, **S**end for help, **A**irway, **B**reathing, **C**PR, and **D**efibrillation (**DRSABCD**). Care must always be taken with the player's neck, as it may have also been injured in the collision. An ambulance should be called, and the player(s) transported to hospital for assessment and management.

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## 8.0. GAME DAY MANAGEMENT

The most important steps in the early management of concussion include:

A. Recognising the injury;
B. Removing the player from the game or training; and
C. Referring the player to a medical practitioner (doctor) for assessment.

**A. Recognising the injury – (suspecting concussion)**
(i) Visible clues - when to suspect concussion:

- Loss of consciousness or non-responsive
- Lying on the ground - not moving, or slow to stand
- Unsteady on feet / balance problems / poor coordination
- Grabbing / clutching at head
- Dazed, blank or vacant look
- Confused / not aware of plays or events

(ii) Loss of consciousness, confusion and disturbance of memory are classical features of concussion, but it is important to remember that they are not present in every case.

(iii) There are several non-specific symptoms that may be present, and which should raise the suspicion of concussion: headache, blurred vision, balance problems, dizziness, feeling “dazed” or “light headed”, “don’t feel right”, drowsiness, fatigue and difficulty concentrating.

(iv) Tools such as the pocket Concussion Recognition Tool 5 (see link below) (CRT5) can be used to help in the identification of a suspected concussion.
http://bjsm.bmj.com/content/bjsports/early/2017/04/26/bjsports-2017-097508CRT5.full.pdf

It is important to understand that brief sideline evaluation tools (such as Concussion Recognition Tool 5 CRT5 and SCAT5*) are designed to help in the identification of a suspected concussion. It is still imperative to arrange a more comprehensive medical assessment by an appropriately experienced medical practitioner.

*Note: the SCAT5 is a medical practitioner (doctor) only assessment tool.

**B. Removing the player from the game or training**
(i) Initial management of a head injury or suspected concussion must always follow first aid rules, including airway, breathing, CPR and spinal immobilisation.

(ii) Any player who is suspected of having a concussion must be removed from the game (or training) and be assessed by the First Responder (Sports Trainer).

(iii) A player who has suffered a concussion (or suspected concussion) must not be allowed to return to play in the same game (or at any time on the same day). The assessor should not be swayed by the opinion of the player, coaching staff, parents or anyone else suggesting premature return to play. Concussion is an evolving condition and symptoms and signs can vary over minutes to hours and days.

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**C. Referring the player to a medical practitioner for assessment**
(i) The management of a head injury is difficult for non-medical personnel. Following an injury, it is often unclear if you are dealing with a concussion or with a more severe underlying structural head injury.

(ii) ALL players with concussion - or a suspected concussion – should seek urgent medical assessment by a medical practitioner (doctor). This can be done by a doctor present at the venue (if available) or local general practice or medical centre or hospital emergency department.

(iii) It is recommended that clubs prepare a pre-game checklist of the appropriate services, including:

- local doctors or medical centres;
- local Hospital Emergency Departments; and
- ambulance services (000).

**Management of an unconscious player**

1. First Aid principles of DRSABCD should be used. It is extremely important to treat all unconscious players as though they also have a neck injury (Spinal Immobilisation).
2. An unconscious player should only be moved (onto a stretcher) by qualified health professionals, trained in spinal immobilisation techniques in accordance with the NRL Neck Injury and Cervical Collar Policy. If no qualified person is present, **do not move the player** - wait for the ambulance and paramedics.
3. Urgent hospital referral is necessary if there is concern regarding the risk of a serious or structural head or neck injury --- **call 000**.
4. Any player with ANY of the following 9 RED FLAGS as outlined in the Concussion recognition Tool 5 (CRT5) in the context of a possible head injury should be referred to a hospital urgently, via Ambulance ---**call 000**:
   - Loss of consciousness
   - Seizures / fits or convulsions
   - Severe or increasing headache
   - Double vision
   - Vomiting
   - Deterioration of conscious state after being injured, e.g. increased drowsiness
   - Report of neck pain / tenderness
   - Burning, numbness, tingling or weakness in arms/legs. (potential spinal cord symptoms)
   - Increasingly restless, agitated or combative

**If, at any time, there is any doubt, the player should be referred to hospital.**

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## 9.0. FOLLOW UP MANAGEMENT

- A player who has sustained a concussion MUST NOT be allowed to return to school or play before obtaining the appropriate medical clearance.
- Return to work, learning and school should take precedence over return to sport.
- The decision regarding the timing of return to training should always be made by a medical practitioner (doctor).
- In cases of uncertainty about the player's recovery, always adopt a more conservative approach, "if in doubt sit them out".

## 10.0. RETURN TO PLAY/SPORT

- Players should not return to play until they have returned to work or school/ learning without worsening symptoms.
- Return to training or play should be gradual.
- Rehabilitation after a concussion should be supervised by a medical practitioner and should follow the stepwise symptom limited progression outlined below.
- Initially, **complete rest for the first 24 to 48 hours** – including mental and physical rest (recovery). Children and adolescents (18 years old and younger) should be treated more conservatively, so an initial 48 hours rest is recommended.
- A 6 stage Graduated Return to Sport **(GRTS)** Program can look like the following. This return to sport program should only be commenced after the initial rest period of 24 to 48 hours.

1. **Symptom-limited activity** – daily activities that do not provoke or worsen symptoms;
2. **Light Aerobic Exercise** – for example, walking, exercise bike with heart rate less than ~70% max (no resistance/weight training);
3. **Sport Specific Exercise** – for example, running drills without risk of head contact;
4. **Non-contact training** and start resistance (weight) training;
5. **Full contact training – ONLY** after medical clearance by a doctor using NRL Head Injury Recognition and Referral Form– coaching staff should assess tackling and other skills for correct technique;
6. **Return to play/games.**

Each stage should be a **minimum of 24 hours' duration**, meaning a period of 7 to 8 days as a minimum time frame for adults to return to full contact sport in the community level of the game is recommended. Longer time frames (twice as long) are suggested in children and adolescents 18 years old and younger. Contact training should only be attempted at the end of the GRTS program and only after a final doctors' assessment and clearance using NRL Head Injury Recognition and Referral Form.

If symptoms return at any stage of the Graduated Return to Sport Program, then the player should move back to the previous symptom-free stage once all symptoms have resolved.

**Player honesty** is important when questioning about symptoms. Remember that playing or training with symptoms of concussion can increase the risk of injury, result in concussion complications and prolonged symptoms, result in reduced performance, increase the risk of other injuries (musculoskeletal) and could potentially be catastrophic.

Each case of concussion is unique, so management should be individualised by the treating doctor.

## 11.0. CHILDREN AND ADOLESCENTS (18 YEARS AND YOUNGER)

The same principles regarding recognition, detection, management and return to sport apply to children and adolescents, however, it is widely accepted that children and adolescents with concussion should be managed more conservatively. This includes longer initial rest and slower return to train and play programs, usually twice as long as the recommended for adults. Additionally, a successful symptom-free return to school or learning should be completed before a graded return to play or training is commenced.

**Note:** the NRL's elite levels of the game have their own policies regarding the management of head injuries and concussion. These policies may vary from some of the principles of the Concussion in Sport Position Statement and these Guidelines when there is appropriately qualified, experienced medical staff overseeing the care and wellbeing of professional rugby league players with advanced care pathways.

Reference:
1 McCrory P, Meeuwisse W, Dvorak Jet al. Consensus statement on concussion in sport - the 5th International Conference on Concussion in Sport held in Berlin, October 2016. Br J Sports Medicine . 2017;51:838-847.