



**SPORTS  
MEDICINE  
AUSTRALIA**



# ***Concussion in Sport Policy***

*Issued by Sports Medicine Australia  
V1.0 January 2018*

## **Acknowledgements**

Sports Medicine Australia (SMA) developed this policy with the support of the New South Wales Office of Sport. SMA would like to acknowledge the following people that assisted developing this resource:

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(Clinical Neuropsychologist, University of Newcastle)

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(Chief Medical Officer, Australian Institute of Sport)

### ***Dr Warren McDonald***

(Chief Medical Officer, Australian Rugby Union)

## **Disclaimer**

The information in this policy is general. Reading or using this policy is not the same as getting medical advice from your doctor or health professional. All reasonable attempts have been made to ensure the information is accurate. However, SMA is not responsible for any loss, injury, claim or damage that may result from using or applying the information in this policy.

The information in this policy should be considered and interpreted in the context of other risk management, insurance, governance and compliance frameworks and obligations relevant to sporting organisations. Familiarity with relevant International Sports Federation (ISF), National Sporting Organisation (NSO) and State Sporting Organisation (SSO) policies and requirements is essential to enable appropriate interpretation and application of the information in this policy.

For more information about risk management and legal issues in sport, see the following NSW Office of Sport website:

### **Risk management:**

<https://sport.nsw.gov.au/clubs/ryc/governance/risk>

### **Legal issues:**

<https://sport.nsw.gov.au/clubs/ryc/legal>

**Concussion is a significant and complex health issue. This policy will enable all sporting codes to know how to recognise and manage concussion at all levels of play.**

This policy is an educational and practical resource for State Sporting Organisations. It will help them to create safe sporting environments by providing important information about how to recognise and manage concussion in their sport.

All the information in this policy is in line with the latest findings from the 5th International Conference on Concussion in Sport, and the 2017 Concussion in Sport Group (CISG) consensus statement.

The aim of this policy is to ensure that all players with a suspected concussion - in all sports and at all levels - receive timely and appropriate advice and care to enable them to safely return to everyday activities and sport.

It will help players, coaches, officials and parents:

- understand what concussion is and why it is important, particularly for children
- recognise concussion
- manage a suspected concussion
- manage return to participation after concussion
- know where to get more information about concussion.

## Who Should Use this Policy

All stakeholders involved in sport including players, parents, coaches, officials, teachers, first aid providers, sports trainers and administrators, should know about and meet the requirements of this policy.

## How to Use this Policy

The policy addresses recognition and management of sport-related concussion:

For each area, recommendations are provided, along with:

**Who** - Who are the people that play a key role to implement the recommendation in this area.

**How** - What are the key tools and documents people can use to implement the recommendations in this area. All relevant tools are included in this policy.

***The aim of this policy is to ensure that all players with a suspected concussion - in all sports and at all levels - receive timely and appropriate advice and care to safely return them to everyday activities and sport.***

To keep players healthy and safe, clubs and everyone involved in sport - players, parents, coaches, officials, teachers, first aid providers, sports trainers and administrators - must take steps to reduce the risks and prevent an incident before it occurs.

**Key steps to do this are:**

## 1. Education

**Educate everyone** about how to recognise and manage concussion

## 2. Information

**Gather information** about previous concussions

## 3. Designation

**Appoint someone** to be responsible for ensuring this policy is implemented

### 1. Education

One of the best ways to build a healthy and safe sporting environment is to educate all stakeholders. This can increase knowledge, change attitudes and improve culture.

Despite the recent focus on concussion, we still need to improve concussion awareness and knowledge. State Sporting Organisations, regional associations and clubs should have an annual process to educate everyone involved in their sport about concussion. This should include the most up to date information about how to recognise and manage concussion.

Concussion education should include information about:

- What concussion is;
- The causes of concussion;
- Common signs and symptoms;
- Steps to reduce the risk of concussion;
- What to do if an athlete has a suspected concussion or head injury;
- What should be done to ensure a proper medical assessment;
- Return to school or work, return to sport and medical clearance requirements.

Potential education strategies may include provision of appropriate fact sheets to all stakeholders when they register with a club at the start of each season or when they register for an event. Clubs and event organisers should ensure that all stakeholders understand the concussion protocols for their sport at the beginning of each season. They should organise a pre-season face-to-face education session for players, parents, coaches and other stakeholders.

***One of the best ways to build a healthy and safe sporting environment is to educate all stakeholders.***

## 2. Information - about previous concussions

Knowing about an athlete's previous concussions can help to identify players who fit into a high-risk category. It also provides an opportunity to educate the athlete and their parents or family about the significance of concussion injuries. If anyone is concerned about an athlete's concussion history, refer the athlete to a medical practitioner for a full review. As with any other personal athlete information collected by a club, this should be handled and treated with full confidentiality.

Parents and players should be encouraged to report any history of previous concussions to coaches, officials, teachers, trainers and administrators.

## 3. Designation: appoint a Concussion Coordinator

While everyone has a role to play in recognising and managing concussion, having a person(s) - a Concussion Coordinator - within a club or at an event who can ensure that the concussion protocol is communicated and followed, is highly recommended. Ideally and when resources permit, a medical practitioner, first aid provider or sports trainer should be assigned this task. If resources are limited, consider assigning a coach, official, teacher or administrator to this role. Once a Concussion Coordinator has been identified:

- give them the authority to make decisions and be proactive;
- encourage them to keep their knowledge up to date; and
- tell everyone who they are via the club website/newsletters, and concussion-specific information (policy, fact sheet, posters etc).



*Knowing about an athlete's previous concussions can help to identify players who fit into a high-risk category*

*Designate a Concussion Coordinator within a club or at an event who can ensure that the concussion protocol is communicated and followed.*

## The Roles of the Main Stakeholders

The main stakeholders all have a role in recognising and managing concussion:

### **Players should:**

- report any potential concussion symptoms they experience;
- report if they suspect a team mate or fellow player has concussion;
- follow any medical advice they receive.

### **Parents should:**

- watch carefully for immediate and delayed signs and symptoms of concussion;
- obtain proper care for their child;
- inform other stakeholders of their child's health.

### **Designated Concussion Coordinator should:**

- ensure all stakeholders are aware of the concussion policy;
- coordinate all concussion education activities;
- organise and distribute concussion resources (posters, fact sheets etc, Concussion Recognition Tool 5);
- ensure all stakeholders follow game day and practice concussion protocols;
- notify parents of concussed junior player's as quickly as possible and provide advice about further management of their child;
- ensure concussed players follow appropriate protocols and medical assessment when resuming participation;
- Identify and liaise with a network of local medical practitioners and concussion management experts.

***Players, parents and Concussion Coordinators all have a role in recognising and managing concussion.***



## What is Concussion?

Concussion is a disturbance in brain function rather than a structural injury to the brain. It is caused by direct or indirect force to the head, face, neck or elsewhere with the force transmitted to the head. A player does not have to be knocked unconscious to have a concussion. Loss of consciousness is seen in only 10-15% of cases of concussion.

Concussion is difficult to diagnose and only medical doctors can definitively diagnose a concussion. However, recognising a suspected concussion at the time of injury is extremely important to ensure appropriate management and to prevent further injury.

Recovery from concussion varies from person to person, and injury to injury. If recognised and appropriately managed most people will recover from their symptoms.

## Who Gets Concussion?

Concussions occurs in almost every sport or recreational physical activity. It is more common in sports and activities with full physical contact between players (like the full contact football codes and combat sports like martial arts and boxing) or where players can hit their head forcefully on the ground (for example, snow sports, cycling, horse riding and skateboarding).

## The Three Most Important Steps of Concussion Management

### 1. Recognise

Recognise an injury has occurred

### 2. Remove

Remove the player from the game or activity

### 3. Refer

Refer the player to a qualified doctor for assessment.

These initial steps should be followed by appropriate rest, recovery, return to school or work, and return to sport.

*Recognising a suspected concussion at the time of injury is extremely important to ensure appropriate management and to prevent further injury.*

## 1. Recognising Concussion

Although a medical practitioner should formally diagnose a concussion, all sport stakeholders including players, parents, coaches, officials, teachers and trainers are responsible for recognising and reporting players with visual signs of a head injury or who report concussion symptoms. This is particularly important when a medical practitioner is not at the venue.

Watch for when a player collides with:

- another player;
- a piece of equipment; or
- the ground.

### Visual Signs

Players who sustain an impact to the head, face, neck, or body can demonstrate visual signs of a concussion such as:

- Lying motionless on the playing surface
- Getting up slowly after a direct or indirect blow to the head
- Being disoriented or unable to respond appropriately to questions
- Having a blank or vacant stare
- Having balance and coordination problems such as stumbling or slow laboured movements
- Having a face or head injury

### Symptoms

An athlete may report symptoms of a concussion to a team mate, parent, teacher, official or coach. Symptoms that suggest a concussion include:

- Headache
- Feeling “Pressure in the head”
- Balance problems
- Nausea or vomiting
- Drowsiness
- Dizziness
- Blurred vision
- Sensitivity to light
- Sensitivity to noise
- Fatigue or low energy
- “Don’t feel right”
- Feeling more emotional than usual
- Being more irritable than usual
- Sadness
- Being nervous or anxious
- Neck pain
- Difficulty concentrating
- Difficulty remembering
- Feeling slow
- Feeling like “in a fog”

***If an athlete is suspected of sustaining a severe head or spinal injury, call an ambulance immediately to take the player to the nearest emergency department***

***If any of these signs are present, remove the player from the activity immediately. The player should not return to activity until assessed by a medical practitioner, even if they seem okay.***

***If any of these symptoms are reported to anyone, remove the player from the activity immediately. The player should not return to activity until assessed by a medical practitioner, even if they feel okay.***



## Memory Assessment

If a player is more than 12 years old, the questions listed on the Concussion Recognition Tool 5 (modified appropriately for each sport) can be used to recognise a suspected concussion.

An incorrect answer to any of these questions indicates the player may have sustained a concussion:

- “What venue are we at today?”
- “Which half is it now?”
- “Who scored last in the game?”
- “What team did you play last week/game?”
- “Did your team win the last game?”

Appropriately modified questions can include:

- “What month is it?”
- “What is the date today?”
- “What is the day of the week?”
- “What year is it?”
- “What is the time right now?”

**Who: Players, parents, coaches, officials, teachers and trainers.**

**How: Concussion Recognition Tool - 5th Edition (CRT5).**

**(see Appendix 3 of this document)**

*Please note: Although tools like the Pocket Concussion Recognition Tool 5 can help to recognise concussion, they are not a replacement for a comprehensive medical assessment.*

## Red Flags

In some cases, a player may have signs or symptoms of a severe head or spinal injury. These should be considered “Red Flags”.

If a player has any of the “Red Flags” set out in the Concussion Recognition Tool 5, a severe head or spine injury should be suspected.

Red Flags include:

- Neck pain or tenderness
- Double vision
- Weakness or tingling/burning in arms or legs
- Severe or increasing headaches
- Seizure or convulsion
- Loss of consciousness
- Deteriorating consciousness
- Vomiting
- Increasing restless, agitation or aggression

***If the player answers any of these questions incorrectly, remove the player from the activity immediately. The player should not return to activity until assessed by a medical practitioner, even if they feel or appear okay.***

## Practice and Game Day Management

Clubs and event organisers should develop and implement protocols for managing concussion at practices and on game days.

## If a medical practitioner is present at the Venue

If there is a medical practitioner at the venue, they should assess the injured player. If they decide the player is concussed, the player must not resume participating on the same day, under any circumstances. The player must adhere to the return-to-participation protocols.

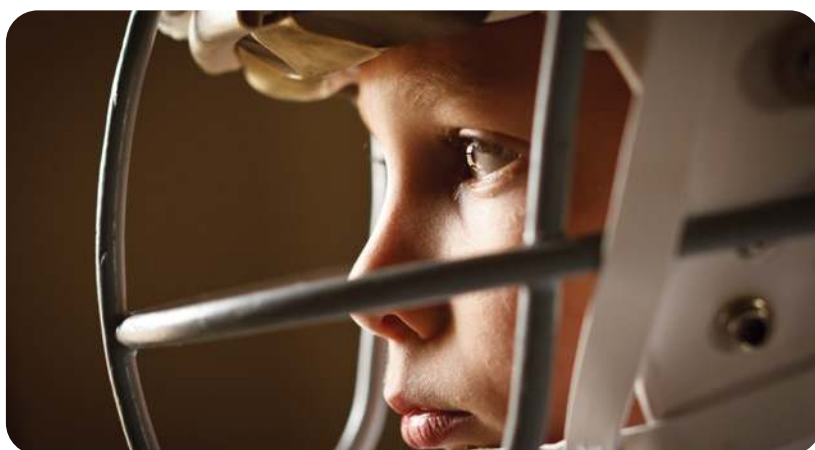
If the medical practitioner decides the player is not concussed, the player can resume participating as soon as they feel ready. However, they should be monitored in case any signs or symptoms of concussion develop.

## If there is no medical practitioner present at the Venue

If there is not a medical practitioner at the venue, once there has been recognition of signs and symptoms of a potential concussion, the player in question should be removed from play immediately and referral of the player to a medical practitioner for assessment should take priority. At this time, ensure the player is closely monitored and escorted for referral.

No one can decide that it is okay for someone with suspected concussion to resume participating on the same day other than a medical practitioner. This includes the player themselves, parents of junior players, coaches or officials.

***Clubs and event organisers should develop and implement protocols for managing concussion at practices and on game days.***



## 2. Removal from Play & Immediate Management

Initial management must adhere to first aid rules, including airway, breathing, circulation and spinal immobilisation.

Anyone with a suspected concussion must be removed from the game. This will enable the player to be properly assessed. Anyone who has a suspected concussion must not be allowed to return to participation in the same game/day unless cleared by a medical practitioner. Do not be influenced by the player, coaching staff, trainers, parents or others suggesting that they should return to play.

Players with suspected concussion should:

- Be immediately removed from participation
- Not be left alone initially (at least for the first 1-2 hours)
- Not drink alcohol
- Not use recreational drugs
- Not take certain prescription medications including aspirin, anti-inflammatory medications, sedative medications or strong pain-relieving medications
- Not be sent home by themselves.
- Not drive a motor vehicle
- Be referred for appropriate medical assessment

## 3. Referral for Medical Assessment

All players with concussion or suspected concussion need a medical assessment by a medical practitioner. If one is not present at an event, the player should be referred to a local general practice or hospital emergency department.



*A player who is removed from an activity because of a suspected concussion **must not resume the activity for at least 48 hours, even if there are no signs or symptoms of concussion. An absence of signs or symptoms immediately after an incident is not a reliable indicator, because the signs and symptoms of a concussion may emerge up to 48 hours after the impact.***

***If an athlete is suspected of sustaining a severe head or spinal injury (“Red Flag”), call an ambulance immediately.***

## Concussion in Children and Adolescents

The management of sport related concussion in children (aged 5 to 12 years) and adolescents (aged 13 to 18 years) requires special paradigms suitable for the developing child. Children have physical and developmental differences - less developed neck muscles; increased head to neck ratio; and brain cells and pathways that are still developing. Children and adolescents may have greater susceptibility to concussion, they may also take longer to recover and they may be at risk of severe consequences such as second impact syndrome.

Managing concussion in children and adolescents therefore requires different standards and a more conservative approach.

Children typically take longer to recover from concussion than adults (up to four weeks).

### **Return to Learn**

The priority when managing concussion in children should be returning to school and learning, ahead of returning to sport.

Concussion symptoms can interfere with memory and information processing. This can make it hard for children to learn in the classroom. Parents should discuss with their doctor and child's school, an appropriate return-to-school strategy.

## Concussion in Women

Research shows that women report more concussions than men when they participate in the same sports with similar rules (like basketball or soccer). Women may also have more symptoms and more severe outcomes than men following a concussion.

## Concussion in Athletes with Physical Disabilities

Little research has been conducted in athletes with physical disability, however there is no evidence or theoretical underpinnings to suggest that a physically disabled athlete requires a modified management strategy to an able-bodied athlete of the same age and gender. Therefore, there are no specific recommendations above and beyond the guidelines set up in this policy.

## Concussion in Athletes with Intellectual Disabilities

Although, concussion research in athletes with intellectual disability sport classification is virtually non-existent, studies in athletes with a learning disorder have shown that they take longer to recover than athletes without a learning disorder. Therefore, an athlete with an intellectual disability should be managed conservatively.

***If the player is a child, inform the parents of the situation as quickly as possible. Tell them that rest, supervision and appropriate medical assessment is required.***

## Rest and Recovery

Most people will recover from a concussion within 10 to 14 days. However, recovery will vary from person to person, and from injury to injury.

Children and adolescents often take longer to recover from a concussion than adults, and it is not abnormal for symptoms to last up to 4 weeks or children or adolescents.

For children and adolescents, it is suggested the graduated return to play protocol should be extended such that a child does not return to contact/collision activities less than 14 days from the resolution of all symptoms.

Rest is recommended immediately following a concussion (24–48 hours). Rest means not undertaking any activity that provokes symptoms. However, anyone who has suffered a concussion should be encouraged to become gradually and progressively more active as long as they do not experience any symptoms.

***Most people recover from a concussion within 10 to 14 days, however recovery will vary from person to person.***



## Return to Play or Sport

Managing concussion is a shared responsibility between the player, coach, sports trainer, parents and medical practitioner. Open communication is essential and information should be shared.

Coaches, administrators and officials should provide players and their parents with information about the:

- immediate management of a suspected concussion;
- graduated return-to- participation protocol; and
- medical clearances needed to return to participation.

Always refer the player and, if they are a child, their parents, to a qualified medical practitioner with some expertise in the management of concussion.

A player who has suffered a concussion should return to sport gradually. They should increase their exercise progressively, as long as they remain symptom-free, following the stages outlined below:

### Following 24–48 hours of physical and mental rest

Stage	Activity	Goal of Each Stage
1. Daily activities while remaining symptom-free	Daily activities that do not provoke symptoms	Gradually reintroduce work or school activities.
2. Light aerobic exercise	Walking, swimming or stationary cycling at a slow to medium pace. No strength or weight training	Increase heart rate
3. Sport-specific exercise	Running drills in football or skating drills in ice hockey. No activities with head impact	Add movement
4. Non-contact training drills	Harder training drills, e.g. passing etc. Start progressive strength or weight training.	Exercise, coordination, and mental load
After receiving medical clearance		
5. Full contact training	Normal training activities	Restore confidence and assess skills by coach
6. Return to play	Normal game play	

Each stage of the progression should take at least 24 hours. If any symptoms worsen during exercise, the athlete should go back to the previous stage. Strength or weight training should be added only in the later stages (3 or 4 at the earliest). If symptoms persist - more than 10-14 days in adults or more than 4 weeks in children/ adolescents - refer the player to a medical practitioner with expertise in managing concussion.

*Always refer the player and, if they are a child, their parents, to a medical practitioner with some expertise in the management of concussion.*

## Example - Club Concussion Checklist Pre-Season Preparation and Education

Below is an example of some suggested measures forming part of a club concussion checklist which a club or organisation can use to ensure they have undertaken the appropriate pre-season education and preparation to recognise and manage concussion.

Where possible, clubs and event organisers should identify and develop a positive relationship with a local medical practitioner who is willing and available to:

- receive referrals of players with suspected concussion from the club
- provide concussion recognition and management information and training to the club
- work with the club and players to coordinate the return-to-participation process

### Club Concussion Checklist Pre-Season Preparation and Education 2017

Club Name:

Club Concussion Coordinator(s) and Contact Number:

To reduce the risk of concussion the following pre-season preparation and education has been implemented:

#### Concussion Fact Sheets have been:

- posted on the club website or at the club
- distributed with registration information
- emailed to all parents, coaches and officials

#### Concussion Recognition Tool 5 has been:

- provided to all coaches, officials and designated individuals
- included in all first aid kits

#### Concussion Information Posters have been:

- posted on the club website
- distributed with registration information
- emailed to all parents, coaches and officials

#### In-person concussion education has been delivered to:

- all coaches
- players
- parents

#### Concussion recognition and management training has been provided to:

- the concussion co-ordinator
- all first aid providers and sports trainers
- interested coaches and parents

A Medical Emergency Plan has been developed and communicated to all coaches, officials and designated individuals.

#### Local Medical Contacts

Medical practitioner with experience in managing concussion:

Sports Medicine Clinics:

Local Hospital:

## Example - Club Concussion Practice and Game Day Management

Below is an example of a club concussion checklist which a club or organisation can use to ensure they have undertaken the appropriate concussion recognition and management processes in place at practice and games.

### Club Concussion Checklist Practice and Game Day Management 2017

Club Name:

Club Concussion Coordinator(s) and Contact Number:

**The following procedure should be followed for recognising and managing concussion at practice and on game day:**

- Identify one or more people who are responsible for coordinating all concussion-related activity
- Ensure at least one person has a fully charged mobile phone and the phone number for emergency services (000)
- Ensure all coaches, officials and first aid providers have access to a Concussion Recognition Tool 5
- Ensure an ambulance is called immediately if any "Red Flags" are raised.
- Ensure all players who are suspected of having a concussion are:
  - Removed from participation immediately
  - Assessed by someone experience and trained in using the Concussion Recognition Tool 5
  - Not allowed to return to participation on the same day
  - Supervised and monitored for at least 2 hours following a suspected concussion
  - Provided with appropriate information about how to manage a concussion including return-to-play protocols
  - Provided with the contact details of a local medical practitioner with experience in managing concussion
  - Contacted within 48 hours to check they are okay and have all the information they need.

#### Local Medical Contacts

Medical practitioner with experience in managing concussion:

Sports Medicine Clinics:

Local Hospital:



## Concussion Recognition Tool 5

### CONCUSSION RECOGNITION TOOL 5<sup>®</sup>

To help identify concussion in children, adolescents and adults



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#### RECOGNISE & REMOVE

Head impacts can be associated with serious and potentially fatal brain injuries. The Concussion Recognition Tool 5 (CRT5) is to be used for the identification of suspected concussion. It is not designed to diagnose concussion.

#### STEP 1: RED FLAGS – CALL AN AMBULANCE

If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/game/activity. If no licensed healthcare professional is available, call an ambulance for urgent medical assessment:

- Neck pain or tenderness
- Double vision
- Weakness or tingling/ burning in arms or legs
- Severe or increasing headache
- Seizure or convulsion
- Loss of consciousness
- Deteriorating conscious state
- Vomiting
- Increasingly restless, agitated or combative

- Remember:**
- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
  - Assessment for a spinal cord injury is critical.
  - Do not attempt to move the player (other than required for airway support) unless trained to do so.
  - Do not remove a helmet or any other equipment unless trained to do so safely.

If there are no Red Flags, identification of possible concussion should proceed to the following steps:

#### STEP 2: OBSERVABLE SIGNS

Visual clues that suggest possible concussion include:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion, or an inability to respond appropriately to questions
- Blank or vacant look
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Facial injury after head trauma

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#### STEP 3: SYMPTOMS

- Headache
- "Pressure in head"
- Balance problems
- Nausea or vomiting
- Drowsiness
- Dizziness
- Blurred vision
- Sensitivity to light
- Sensitivity to noise
- Fatigue or low energy
- "Don't feel right"
- More emotional
- More Irritable
- Sadness
- Nervous or anxious
- Neck Pain
- Difficulty concentrating
- Difficulty remembering
- Feeling slowed down
- Feeling like "in a fog"

#### STEP 4: MEMORY ASSESSMENT

(IN ATHLETES OLDER THAN 12 YEARS)

- Failure to answer any of these questions (modified appropriately for each sport) correctly may suggest a concussion:**
- "What venue are we at today?"
  - "Which half is it now?"
  - "Who scored last in this game?"
  - "What team did you play last week/game?"
  - "Did your team win the last game?"

#### Athletes with suspected concussion should:

- Not be left alone initially (at least for the first 1-2 hours).
- Not drink alcohol.
- Not use recreational/ prescription drugs.
- Not be sent home by themselves. They need to be with a responsible adult.
- Not drive a motor vehicle until cleared to do so by a healthcare professional.

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**ANY ATHLETE WITH A SUSPECTED CONCUSSION SHOULD BE IMMEDIATELY REMOVED FROM PRACTICE OR PLAY AND SHOULD NOT RETURN TO ACTIVITY UNTIL ASSESSED MEDICALLY, EVEN IF THE SYMPTOMS RESOLVE**

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## Useful Links and Resources

### Pocket Concussion Recognition Tool 5

<http://bjism.bmj.com/content/51/11/872>

### AIS/AMA position statement on concussion in sport

<https://concussioninsport.gov.au/>

### The 5th International Conference on Concussion in Sport: Consensus Statement

<http://bjism.bmj.com/content/51/11/838>

### Sports Medicine Australia

<https://sportconcussion.com.au/>