THE MANAGEMENT OF CONCUSSION IN AUSTRALIAN FOOTBALL

This document has been published by the AFL as a position statement on the management of concussion in Australian Football. It is based on guidelines developed by the AFL Medical Officers’ Association which incorporate research that has been funded by the AFL Research Board and which was undertaken by Dr Michael Makdissi and Assoc Prof Paul McCrory.

The guidelines should be adhered to at all times. Decisions regarding return to play after concussive injuries should only be made by a medical doctor with experience in concussive injuries.

April, 2011
THE MANAGEMENT OF CONCUSSION IN AUSTRALIAN FOOTBALL

For trainers, first-aid providers, coaches, club officials and parents

Summary

» In the best practice management of concussion in sport, the critical element remains the welfare of the player, both in the short and long term.

» Concussion refers to a disturbance in brain function that results from trauma to the brain. The changes are temporary and the majority of players recover completely if managed correctly.

» Complications can occur if the player is returned to play before they have recovered from their concussion. This is why any player with suspected concussion must be withdrawn from playing or training immediately. Furthermore, no player with concussion should be returned to play in the same game.

» Management of head injury is difficult for non-medical personnel. In the early stages of injury it is often not clear whether you are dealing with a concussion or there is a more severe underlying structural head injury.

» Therefore, ALL players with concussion or suspected of concussion need an urgent medical assessment.

» In the days or weeks following concussion, a player should not be allowed to return to play or train until they have had a formal medical clearance.

» The key components of management of concussion include:

  a) Suspecting the diagnosis in any player with symptoms such as confusion or headache after a knock to the head;

  b) Referring the player for medical evaluation; and

  c) Ensuring the player has received medical clearance before allowing them to return to a graded training program.
Background

Introduction

In considering the best practice management of concussion in sport, the critical element remains the welfare of the player, both in the short and long term.

» Since 2001, three international conferences have been held to address key issues in the understanding and management of concussion in sport. Following each of these meetings, a summary has been published to “improve the safety and health of athletes who suffer concussive injuries during participation in sport”. The most recent conference was held in Zurich in November 2008. The summary from the Zurich meeting provides the most up-to-date knowledge on concussion in sport. It also outlines the current best practice management guidelines. (1)

The AFL Medical Officers’ Association (AFLMOA) has recently modified its guidelines for the evaluation and management of concussion. These guidelines are based on the Zurich summary as well as research conducted on concussion in Australian football over a number of decades. Following the guidelines will help ensure that the health and wellbeing of players is protected.

What is concussion?

“Traumatic brain injury” is the broad term used to describe injuries to the brain that are caused by trauma. The more severe injuries typically involve structural damage, such as fractures of the skull and bleeding in the brain. Structural injuries require urgent medical attention. Concussion typically falls into the milder spectrum of traumatic brain injury and reflects a disturbance in brain function. Concussion does not involve structural damage or any permanent injury to the brain tissue.

Concussion is caused by trauma to the brain, which can be either direct or indirect (e.g. whiplash injury). When the forces transmitted to the brain are high enough, they can “stun” the nerves and affect the way in which the nerves function. This results in a range of symptoms and signs depending on the area of the brain that is affected. Common symptoms of concussion include headache, blurred vision, dizziness, nausea, balance problems, fatigue and feeling “not quite right”. Other common features of concussion include confusion, memory loss and reduced ability to think clearly and process information. Loss of consciousness is seen in only 10-20% of cases of concussion in Australian football. That is, the footballer does not have to
lose consciousness to have a concussion.

Because we are dealing with a functional injury rather than structural damage, the changes are temporary and recover spontaneously if managed correctly. The recovery process however, is variable from person to person and injury to injury. Most cases of concussion in Australian football recover within 10-14 days of injury, however in a small number of cases, recovery is delayed over weeks to months.

**How common is concussion in Australian football?**

Concussion is a relatively common injury in Australian football. The overall incidence rate is 5-6 concussions per 1000 player hours, which equates to an average of 6-7 injuries per team per season. The rate of concussion is similar in all levels of competition.

**What are the potential complications following concussion?**

A number of complications can occur following concussion. These include:

- Higher risk of injury or repeated concussion on return to play;
- Prolonged symptoms (lasting > 14 days);
- Symptoms of depression and other psychological problems;
- Severe brain swelling (particularly in young players); and
- Long term damage to brain function.

In general, complications are not common. The risk of complications is thought to be increased by allowing a player to return to play before they have recovered. This is why it is important to recognise concussion, make the diagnosis and keep the player out of training and competition until the player has recovered.
Management guidelines

An outline of the overall management approach is summarised in figure 1 below.

Presence of any concussion symptoms or signs (e.g. stunned, confusion, memory problems, balance problems, headache, dizziness, not feeling right)

Remove from the ground
Assess using pocket SCAT2

NO
Diagnosis of concussion confirmed

YES

Presence of any factors for urgent hospital referral (e.g. confusion, vomiting, worsening headache)

YES

Call for ambulance and refer to hospital

NO

Do not allow player to return to play
Refer to medical doctor for assessment (at venue, local general practice or hospital emergency department)

Figure 1. Summary of the management of concussion in Australian football.

*Note: for any player with loss of consciousness, basic first aid principles should be used (i.e. Airways, Breathing, CPR...). Care must also be taken with the player’s neck, which may have also been injured in the collision. An ambulance should be called, and these players transported to hospital immediately for further assessment and management.
A. Game-day management

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

1. Recognising the injury;
2. Removing the player from the game; and
3. Referring the player to a medical doctor for assessment.

1. RECOGNISING THE INJURY
(MAKING A DIAGNOSIS OF CONCUSSION)

» Loss of consciousness, confusion and memory disturbance are classical features of concussion. The problem with relying on these features to make a diagnosis of concussion is that they are not present in every case.

» Other symptoms that should raise suspicion of concussion include: headache, blurred vision, balance problems, dizziness, feeling “dinged” or “dazed”, “don’t feel right”, drowsiness, fatigue, difficulty concentrating or difficulty remembering.

» Tools such as the pocket Sport Concussion Assessment Tool (SCAT2, see appendix) can be used to help make the diagnosis of concussion.

» It is important to note however that brief sideline evaluation tools (such as the pocket SCAT2 and SCAT2) are designed to help make a diagnosis of concussion. They are not meant to replace a more comprehensive medical assessment and should never be used as a stand-alone tool for the management of concussion.

2. REMOVING THE PLAYER FROM THE GAME

» Any player with a suspected concussion must be removed from the game. This allows the first aid provider time and space to assess the player properly.

» Any player who has suffered a concussion should not be allowed to return to play in the same game. Do not be swayed by the opinion of the player, trainers, coaching staff or others suggesting premature return to play.
3. REFERRING THE PLAYER TO A MEDICAL DOCTOR FOR ASSESSMENT

» Management of head injury is difficult for non-medical personnel. In the early stages of injury, it is often not clear whether you are dealing with a concussion or there is a more severe underlying structural head injury.

» For this reason, ALL players with concussion or a suspected concussion need an urgent medical assessment (with a registered medical doctor). This assessment can be provided by a medical doctor present at the venue, local general practice or hospital emergency department.

» If a doctor is not available at the venue, then the player should be sent to a local general practitioner or hospital emergency department.

» It is useful to have a list of local doctors and emergency departments in close proximity to the ground in which the game is being played. This resource can be determined at the start of each season (in discussion with the local medical services).

» A pre-game checklist can be printed on the back of the SCAT2 assessment card and provided to trainers and other staff involved in the match-day care of players. The checklist should include contact details for:

a) Local general practices;

b) Local hospital emergency departments; and

c) Ambulance services.

» The pre-game checklist can also be provided to trainers and medical staff of the away team, who are likely to be less familiar with local medical services.
MANAGEMENT OF AN UNCONSCIOUS PLAYER AND WHEN TO REFER TO HOSPITAL

» Basic first aid principles should be used when dealing with any unconscious player (i.e. Airway, Breathing, CPR...). Care must be taken with the player’s neck, which may have also been injured in the collision.

» Urgent hospital referral is necessary if there is any concern regarding the risk of a structural head or neck injury.

» Indications for urgent referral to hospital include:

a) Any player with loss of consciousness or seizures

b) Any player with persistent confusion

c) Any player who deteriorates after their injury (e.g. increased drowsiness, headache or vomiting)

d) Any player who reports neck pain or spinal cord symptoms (e.g. numbness, tingling, weakness)

» Overall, if there is any doubt, the player should be referred to hospital.

B. Follow-up management

» Any concussed player must not be allowed to return to play before having a medical clearance.

» In every case, the decision regarding the timing of return to training should be made by a medical doctor with experience in managing concussion.

» In general, a more conservative approach (i.e. longer time to return to sport) is used in cases where there is any uncertainty about the player’s recovery (“if in doubt sit them out”).

» A more conservative approach should also be used for younger players (under 18) as there is some evidence that concussion in this group is more severe, longer lasting and associated with higher risk of complications.
RETURN TO PLAY

» Players should be returned to play in a graduated fashion.

» The “concussion rehabilitation” program should follow a step-wise symptom limited progression, for example:

1) Rest until symptoms recover (includes physical and mental rest)

2) Light aerobic activity (e.g. walking, swimming or stationary cycling) – can be commenced 24-48 hours after symptoms have recovered

3) Light, non-contact training drills (e.g. running, ball work)

4) Non-contact training drills (i.e. progression to more complex training drills, may start light resistance training. Resistance training should only be added in the later stages)

5) Full contact training – only after medical clearance

6) Return to competition (game play)

» There should be approximately 24 hours (or longer) for each stage.

» Players should be symptom-free during their rehabilitation program. If they develop symptoms at any stage, then they should drop back to the previously symptom-free level and try to progress again after a further 24 hour period of rest.

REFERENCES

SCAT2

Sport Concussion Assessment Tool 2

What is the SCAT2?¹
This tool represents a standardized method of evaluating injured athletes for concussion and can be used in athletes aged from 10 years and older. It supersedes the original SCAT published in 2005². This tool also enables the calculation of the Standardized Assessment of Concussion (SAC)³, ⁴ score and the Maddocks questions⁵ for sideline concussion assessment.

Instructions for using the SCAT2
The SCAT2 is designed for the use of medical and health professionals. Preseason baseline testing with the SCAT2 can be helpful for interpreting post-injury test scores. Words in italics throughout the SCAT2 are the instructions given to the athlete by the tester.

This tool may be freely copied for distribution to individuals, teams, groups and organizations.

What is a concussion?
A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific symptoms (like those listed below) and often does not involve loss of consciousness. Concussion should be suspected in the presence of any one or more of the following:

- Symptoms (such as headache), or
- Physical signs (such as unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behaviour.

Any athlete with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration (i.e., should not be left alone) and should not drive a motor vehicle.

Symptom Evaluation

How do you feel?
You should score yourself on the following symptoms, based on how you feel now.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Pressure in head”</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Neck Pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Dizziness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Balance problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling slowed down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling like “in a fog”</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Don’t feel right”</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty remembering</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fatigue or low energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Confusion</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Drowsiness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Trouble falling asleep</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>More emotional</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Irritability</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sadness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nervous or Anxious</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total number of symptoms (Maximum possible 22)
(Add all scores in table, maximum possible: 22 x 6 = 132)

<table>
<thead>
<tr>
<th>Symptom severity score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the symptoms get worse with physical activity?</td>
</tr>
<tr>
<td>Do the symptoms get worse with mental activity?</td>
</tr>
</tbody>
</table>

Overall rating
If you know the athlete well prior to the injury, how different is the athlete acting compared to his / her usual self? Please circle one response.

<table>
<thead>
<tr>
<th>Rating</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>no different</td>
<td></td>
</tr>
<tr>
<td>very different</td>
<td></td>
</tr>
<tr>
<td>unsure</td>
<td></td>
</tr>
</tbody>
</table>
Cognitive & Physical Evaluation

Symptom score (from page 1)
22 minus number of symptoms

Physical signs score
Was there loss of consciousness or unresponsiveness?  
Y  N
If yes, how long?  
minutes
Was there a balance problem/unsteadiness?  
Y  N

Physical signs score (1 point for each negative response)

Glasgow coma scale (GCS)

Best eye response (E)
No eye opening  
1
Eye opening in response to pain  
2
Eye opening to speech  
3
Eyes opening spontaneously  
4

Best verbal response (V)
No verbal response  
1
Incomprehensible sounds  
2
Inappropriate words  
3
Confused  
4
Oriented  
5

Best motor response (M)
No motor response  
1
Extension to pain  
2
Abnormal flexion to pain  
3
Flexion/Withdrawal to pain  
4
Locализes to pain  
5
Obeyes commands  
6

Glasgow Coma score (E + V + M)

Cognitive assessment

Standardized Assessment of Concussion (SAC)

Orientation (1 point for each correct answer)
What month is it?  
0  1
What is the date today?  
0  1
What is the day of the week?  
0  1
What year is it?  
0  1
What time is it right now? (within 1 hour)  
0  1

Orientation score

Immediate memory

“I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.”

Trials 2 & 3:

“I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before.”

Complete all 3 trials regardless of score on trial 1 & 2. Read the words at a rate of one per second. Score 1 pt. for each correct response. Total score equals sum across all 3 trials. Do not inform the athlete that delayed recall will be tested.

Immediate memory score

Concentration

Digits Forward:

“I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.”

If correct, go to next string length. If incorrect, read trial 2. One point possible for each string length. Stop after incorrect on both trials. The digits should be read at the rate of one per second.

Immediate memory score

Concentration

“I am going to ask you a few questions, please listen carefully and give your best effort.”

Modified Maddocks questions (1 point for each correct answer)
At what venue are we at today?  
0  1
Which half is it now?  
0  1
Who scored last in this match?  
0  1
What team did you play last week/game?  
0  1
Did your team win the last game?  
0  1

Maddocks score  

Maddocks score is validated for sideline diagnosis of concussion only and is not included in SCAT 2 summary score for serial testing.


Balance examination

This balance testing is based on a modified version of the Balance Error Scoring System (BESS). A stopwatch or watch with a second hand is required for this testing.

**Balance testing**

“I am now going to test your balance. Please take your shoes off, roll up your pant legs above ankle (if applicable), and remove any ankle taping (if applicable). This test will consist of three twenty second tests with different stances.”

(a) Double leg stance:

“The first stance is standing with your feet together with your hands on your hips and with your eyes closed. You should try to maintain stability in that position for 20 seconds. I will be counting the number of times you move out of this position. I will start timing when you are set and have closed your eyes.”

(b) Single leg stance:

“If you were to kick a ball, which foot would you use? [This will be the dominant foot] Now stand on your non-dominant foot. The dominant leg should be held in approximately 30 degrees of hip flexion and 45 degrees of knee flexion. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes.”

(c) Tandem stance:

“Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes.”

Balance testing – types of errors

1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into > 30 degrees abduction
5. Lifting forefoot or heel
6. Remaining out of test position > 5 sec

Each of the 20-second trials is scored by counting the errors, or deviations from the proper stance, accumulated by the athlete. The examiner will begin counting errors only after the individual has assumed the proper start position. The modified BESS is calculated by adding one error point for each error during the three 20-second tests. The maximum total number of errors for any single condition is **10**. If an athlete commits multiple errors simultaneously, only one error is recorded but the athlete should quickly return to the testing position, and counting should resume once subject is set. Subjects that are unable to maintain the testing procedure for a minimum of **five seconds** at the start are assigned the highest possible score, ten, for that testing condition.

Which foot was tested: Left Right

(i.e. which is the non-dominant foot)

**Condition**

**Total errors**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Leg Stance (feet together)</td>
<td>of 10</td>
</tr>
<tr>
<td>Single leg stance (non-dominant foot)</td>
<td>of 10</td>
</tr>
<tr>
<td>Tandem stance (non-dominant foot at back)</td>
<td>of 10</td>
</tr>
<tr>
<td>Balance examination score (30 minus total errors)</td>
<td>of 30</td>
</tr>
</tbody>
</table>

Coordination examination

**Upper limb coordination**

Finger-to-nose (FTN) task: “I am going to test your coordination now. Please sit comfortably on the chair with your eyes open and your arm (either right or left) outstretched (shoulder flexed to 90 degrees and elbow and fingers extended). When I give a start signal, I would like you to perform five successive finger to nose repetitions using your index finger to touch the tip of the nose as quickly and as accurately as possible.”

Which arm was tested: Left Right

Scoring:

<table>
<thead>
<tr>
<th>5 correct repetitions in &lt; 4 seconds = 1</th>
</tr>
</thead>
</table>

Note for testers: Athletes fail the test if they do not touch their nose, do not fully extend their elbow or do not perform five repetitions. Failure should be scored as 0.

**Coordination score**

| of 1 |

Cognitive assessment

**Standardized Assessment of Concussion (SAC)**

**Delayed recall**

“Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order.”

Circle each word correctly recalled. Total score equals number of words recalled.

<table>
<thead>
<tr>
<th>List</th>
<th>Alternative word list</th>
</tr>
</thead>
<tbody>
<tr>
<td>elbow</td>
<td>candle</td>
</tr>
<tr>
<td>apple</td>
<td>paper</td>
</tr>
<tr>
<td>carpet</td>
<td>sugar</td>
</tr>
<tr>
<td>saddle</td>
<td>sandwich</td>
</tr>
<tr>
<td>bubble</td>
<td>wagon</td>
</tr>
<tr>
<td>sunset</td>
<td>iron</td>
</tr>
<tr>
<td>lemon</td>
<td>insect</td>
</tr>
</tbody>
</table>

**Delayed recall score**

| of 5 |

Overall score

<table>
<thead>
<tr>
<th>Test domain</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom score</td>
<td>of 22</td>
</tr>
<tr>
<td>Physical signs score</td>
<td>of 2</td>
</tr>
<tr>
<td>Glasgow Coma score (E + V + M)</td>
<td>of 15</td>
</tr>
<tr>
<td>Balance examination score</td>
<td>of 30</td>
</tr>
<tr>
<td>Coordination score</td>
<td>of 1</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>of 70</td>
</tr>
<tr>
<td>Orientation score</td>
<td>of 5</td>
</tr>
<tr>
<td>Immediate memory score</td>
<td>of 5</td>
</tr>
<tr>
<td>Concentration score</td>
<td>of 15</td>
</tr>
<tr>
<td>Delayed recall score</td>
<td>of 5</td>
</tr>
<tr>
<td><strong>SAC subtotal</strong></td>
<td>of 30</td>
</tr>
<tr>
<td><strong>SCAT2 total</strong></td>
<td>of 100</td>
</tr>
<tr>
<td><strong>Maddocks Score</strong></td>
<td>of 5</td>
</tr>
</tbody>
</table>

Definitive normative data for a SCAT2 “cut-off” score is not available at this time and will be developed in prospective studies. Embedded within the SCAT2 is the SAC score that can be utilized separately in concussion management. The scoring system also takes on particular clinical significance during serial assessment where it can be used to document either a decline or an improvement in neurological functioning.

**Scoring data from the SCAT2 or SAC should not be used as a stand alone method to diagnose concussion, measure recovery or make decisions about an athlete’s readiness to return to competition after concussion.**
Any athlete suspected of having a concussion should be removed from play, and then seek medical evaluation.

### Signs to watch for
Problems could arise over the first 24-48 hours. You should not be left alone and must go to a hospital at once if you:
- Have a headache that gets worse
- Are very drowsy or can’t be awakened (woken up)
- Can’t recognize people or places
- Have repeated vomiting
- Behave unusually or seem confused; are very irritable
- Have seizures (arms and legs jerk uncontrollably)
- Have weak or numb arms or legs
- Are unsteady on your feet; have slurred speech

**Remember, it is better to be safe.**
**Consult your doctor after a suspected concussion.**

### Return to play
Athletes should not be returned to play the same day of injury. When returning athletes to play, they should follow a stepwise symptom-limited program, with stages of progression. For example:
1. rest until asymptomatic (physical and mental rest)
2. light aerobic exercise (e.g. stationary cycle)
3. sport-specific exercise
4. non-contact training drills (start light resistance training)
5. full contact training after medical clearance
6. return to competition (game play)

There should be approximately 24 hours (or longer) for each stage and the athlete should return to stage 1 if symptoms recur. Resistance training should only be added in the later stages.
**Medical clearance should be given before return to play.**

### Concussion injury advice (To be given to concussed athlete)

This patient has received an injury to the head. A careful medical examination has been carried out and no sign of any serious complications has been found. It is expected that recovery will be rapid, but the patient will need monitoring for a further period by a responsible adult. Your treating physician will provide guidance as to this timeframe.

If you notice any change in behaviour, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please telephone the clinic or the nearest hospital emergency department immediately.

**Other important points:**
- Rest and avoid strenuous activity for at least 24 hours
- No alcohol
- No sleeping tablets
- Use paracetamol or codeine for headache. Do not use aspirin or anti-inflammatory medication
- Do not drive until medically cleared
- Do not train or play sport until medically cleared

### Additional comments

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**Patient's name**

**Date/time of injury**

**Date/time of medical review**

**Treating physician**

**Clinic phone number**

Contact details or stamp