



RESPONSIBLE APPROACH TO CONCUSSION IN THE AFL

This document is divided into the following sections:

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1. BACKGROUND

Concussion is an issue which the AFL has always taken very seriously, and for that reason we have been at the forefront of global efforts in sport to better understand and address the issue in the interests of past and present players' health and welfare. The AFL, in conjunction with medical experts in the field, has been active for approximately 25 years in monitoring and researching concussion in our game, including more intensively since the AFL Research Board was founded in 1999.

In addition, more recently significant steps have been taken to modify the rules of the game to better protect the head and neck of players, and more conservative guidelines have been introduced for the management of potential concussion cases both at AFL and community level.

Concussion has received recent media attention both in Australia and overseas following developments in the US where the NFL has been under scrutiny regarding the possible long term effects on players of repeated hits to the head. The concerns relate to a possible increased likelihood of the development of depression, dementia and other forms of cognitive impairment later in life, as a result of impacts to the head during games or practice, and not just those hits resulting in concussion.

Significantly, Australian Football is played in a markedly different manner from the other football codes, including the NFL, however our game is a contact sport where concussion is a relatively common injury (6-7 concussions per team per season). For this reason we are committed to enhancing our understanding of concussion and to further improving our current approach to concussion management, including by building on our extensive body of research, especially on the subject of potential longer term effects.

Some relevant background on concussion in the AFL is as follows:

- Concussion rates have been relatively steady for over a decade in the AFL
- Current rates of concussion are approximately 6-7 per AFL team per season (including 1 concussion per team per season to miss a match)
- Research has been ongoing since 1985 and more intensively since 2007 following Dr. Michael Makdissi's AFL-funded project on post-concussive outcomes after return to play in Australian Football and the 2008 Concussion Consensus Meeting in Zurich where AFL was represented and revised guidelines were developed and introduced (McCrory, Makdissi & Davis)
- Continuous injury surveillance has been conducted since the mid-1990s (Prof Paul McCrory throughout 1990's and Dr Makdissi, University of Melbourne throughout 2000's)

- Previous research on cognitive function of players (Dr David Maddocks, 1985-95) provides a unique longitudinal picture of the possible longer term effects of concussion
- AFL was featured in an American Journal of Sports Medicine for a leading approach to concussion management in 2008, and the Makdissi research was highlighted
- Revised guidelines were introduced for AFL and community level at the start of 2011 to encourage a more conservative management approach (based on expert opinion at the time)
- History of head injury and concussion incidence is included in Talent Pathway Medical Screening
- State Government funding and support has led to Victoria being an International centre of excellence for research into neuroscience and neurotrauma

2. AFL CONCUSSION PERSONNEL

The AFL established a concussion working group in 2010 to assist the AFL Research Board in steering the current suite of concussion projects, and identifying which further steps were necessary to ensure we are doing all that we can to consolidate the current best practice approach.

These personnel include the following (bios available on request):

- **Dr Peter Harcourt, Dr Harry Unglik, Dr Anik Shawdon** – AFL Administration
- **Dr Hugh Seward** – AFL Medical Officers Association
- **Prof Paul McCrory** – Chair of International Concussion in Sport Consensus Group and has organised the major international concussion consensus meetings Vienna 2001, Prague 2004, Zurich 2008 and Zurich 2012; Editor British Journal Sports Medicine; Associate Editor Clinical Journal Sports Medicine; 400+ scholarly works; Current appointments with University of Melbourne, Melbourne Brain Centre and Florey Neurosciences Institute
- **Dr Michael Makdissi** – AIS/AFL Academy Medical Officer; NHMRC Research Fellow with Melbourne Brain Centre; Panel member of the International Symposium on Concussion in Sport; British Journal of Sports Medicine; Clinical Journal of Sports Medicine and member IRB PitchSide Concussion Working Group
- **Assoc Prof Gavin Davis** – Senior Neurosurgeon at the Austin, Box Hill and Cabrini Hospitals with appointments at University of Notre Dame and University of Melbourne; Member of international panel of experts for development of concussion in sport guidelines (Zurich 2008); Co-author AFL Management of Concussion Guidelines 2011
- **Dr David Maddocks** – Neuropsychologist and Concussion researcher who’s pioneering research on AFL footballers in 1989 developed the concussion assessment questions still used by international sport today (“Maddocks questions”)
- All initiatives are well supported by experienced **AFL Club Medical Staff**
- All research coordinated by **AFL Research Board** (Chair – Dr Ross Smith)

We are fortunate to have individuals of this calibre involved with our work in this area, who have dealt specifically with the issue of concussion for a number of years. Concussion is a specialist area of neuroscience, dealing with mild traumatic brain injury (MTBI).

3. CHANGES TO PROTECT AGAINST HEAD & NECK INJURY

Player welfare is a key focus of the Laws of the Game process, especially with regard to head and neck injury. This has been facilitated by a strong relationship with AFL Club Medical and Conditioning staff, AFL Players Association and AFL Coaches Association, who work collaboratively with the AFL in the interests of player welfare.

Recent Laws and Tribunal changes to protect the head and neck include the following:

- New definition of charging (2000)
- Emphasis on protecting player on ground from being contacted from front on (2003)
- Bumping/making forceful contact from front on/bumping player with head over the ball (2007)
- Stricter policing of dangerous tackles (2007)
- High contact classification given to incidents where head hits the ground (2009)
- Rough conduct [head-high bump] (2009, 2010 & 2011)
- New guideline under rough conduct for dangerous tackles (2010)
- Interchange substitute rule (2011)
- Clarity on negligent and reckless dangerous tackles including sling tackles (2012)
- Increased penalty for striking incidents behind play (2012)

In addition, the AFL was one of the first professional sports to introduce a rule which prohibits clubs from playing a medically unfit player, whereby the club doctor is the only club person with the authority to make that decision. Sanctions of up to \$50,000 apply for each individual breach within this rule.

4. SUMMARY OF CONCUSSION MANAGEMENT GUIDELINES

Revised concussion management guidelines were introduced at the beginning of the 201 Season which require a more conservative approach to the management of concussion and return to play decisions. Along with setting a positive example at AFL level, these guidelines have also had a significant positive impact at community level.

The AFL guidelines prior to this were in line with the most recent Consensus Statement on Concussion in Sport, and whilst there was no scientific basis for the AFL to make these guidelines more conservative, on the basis of taking a proactive approach to player welfare issues, and on expert advice, we felt it was prudent in the circumstances. It is often difficult for people watching a game to comprehend that a player exhibiting transient symptoms might not be concussed, and even a player with concussion can recover very quickly.

Several other sports including the NRL have since introduced revised guidelines which promote a similar more conservative approach.

AFL Level guidelines:

- Player diagnosed with concussion cannot take any further part in the game
- Players with transient symptoms are assessed to determine if they are due to concussion (e.g. blurred vision, dizziness, unsteadiness)
- If brain function is normal they may be allowed to continue playing, with ongoing monitoring for signs of concussion
- Post-concussion management in week following injury through:

- A period of rest to allow recovery
- Monitoring for recovery of symptoms and signs
- Use of cognitive tests to estimate recovery of brain function
- Graduated return to activity with monitoring for recurrence of symptoms
- Final medical clearance before resuming full contact training and/or playing
- All players to undergo computerised baseline tests during pre-season and following injury

Community level guidelines:

- Any player with suspected concussion must be withdrawn from playing or training immediately
- All players suspected of concussion need urgent medical assessment
- In days or weeks following concussion, player should not be allowed to return to play or train until they have had formal medical clearance
- At community level, the minimum requirement for injury support at Auskick/junior level is to have someone present with first aid qualifications. The minimum requirement at youth and senior level is to have someone present with AFL Emergency Response Coordinator training. It is recommended at all levels that clubs have accredited trainers present, and this is the case at many clubs, with several using physiotherapists and doctors along with their sports trainers
- All Senior, Youth & Junior coaching accreditation programs involve a module on injury prevention and management in which concussion is covered as a key area of responsibility, including the steps to be taken when a player is suspected of having concussion

Under both policies, if a player is unconscious and taken from the field on a stretcher they are unable to take any further part in the match.

5. RESEARCH & PROJECTS UNDERWAY

There are a range of projects underway to build our knowledge, increase awareness and further enhance our concussion management strategies.

The AFL's overarching research questions are as follows:

- a) What is the optimal approach to the detection and management of concussion?
- b) What are the long term health ramifications of concussion?
- c) What is the risk to player health and welfare in the AFL?

The full suite of current and pending projects can be categorised as follows:

Build Knowledge:

- Evaluation of impact of guidelines at community Level (Finch)
- Detailed review of all head injuries during 2011/12 seasons (Makdissi/Davis/AFLMOA)
- E-survey of current and past player health issues (AFLPA/McCrory)
- AFL Injury Report (Orchard/Seward)
- Monitoring the cognitive function of past players – follow-up to 1989 study (Maddocks)
- AFL Medical Director attendance at next Concussion Consensus Meeting in October 2012 in Zurich where the current guidelines will be reviewed (AFL)
- Comparison of health & wellness indicators in AFL players with general population (AFL)

Increase Awareness/Education:

- Updated Community Management guidelines (AFL)
- Development of joint AFL-AFLMOA position statement on helmets & mouthguards (AFLMOA)
- Update of relevant sections of AFL and Community website to provide detailed information on AFL rule changes, research projects, and health & wellness programs and policies (AFL)
- Inclusion of concussion awareness module as part of coach accreditation (AFL)
- Pre-season education workshops conducted by club doctors with AFL playing groups (AFLMOA)
- Laws of the game briefings with AFL club match committees and player leadership groups (AFL)
- Government briefings (Federal, State & Local)
- Face-to-face education of parents and community level players about symptoms of concussion to be potentially incorporated into current suite of broader community education sessions (AFL)
- Development of player and parent concussion information sheets (AFL)

Enhance Concussion Management:

- Roll-out of AFL concussion guidelines to other community level sports (Finch/Monash)
- Development of on-line player and parent/medical officer concussion education module (AFL)
- Review of clinical application of guidelines at community level in 2012 including use of video analysis and computerised assessment (AFLMOA)
- Computerised baseline testing for players when drafted and every pre-season to detect changes and abnormalities in cognitive function and assist with return to play decisions following injury (AFLMOA)
- Further establishment of support protocols for past or current players who have had head injuries during their career (McCrory/AFLPA)
- Further improvements to talent pathway screening programs (AFL)
- Update of revised AFL and Community level concussion guidelines following Concussion (AFL) Consensus Meeting in Zurich later this year (AFLMOA)

Potential AFL-Florey Neurosciences Institute concussion collaborate partnership

Discussions are at an advanced stage regarding a proposed partnership with the Florey Neurosciences Institute (FNI), one of the World's leading brain research centres based in Melbourne. The partnership would be used to leverage significant third party funding for advanced longer term concussion research including use of advanced functional MRI imaging technology.

6. FURTHER RESOURCES

The following concussion resources are provided as attachments:

1. *Management of Concussion in Australian Football* (brochure outlining community level concussion management guidelines)
2. Concussion Recognition & Management Guidelines for players
3. Concussion Recognition & Management Guidelines for parents
4. Sports Trainers in Community Australian Football Policy

Further information and hard copies of the concussion management brochure, posters, and pocket SCAT2 card are available for dissemination by contacting shane.mccurry@afl.com.au.