

# CONCUSSION RESEARCH PROVES **GAME-CHANGING**



Considered one of Australia's top concussion researchers, Associate Professor Andrew Gardner is leading one of the world's largest longitudinal studies to help reduce the risk of concussive injury in sport and improve care for current and retired athletes.

Contact sports are a big part of Australian life. Men, women and children of all ages regularly take part in sports like rugby, AFL, boxing and martial arts.

These sports provide a range of physical and social benefits but also come with the risk of concussive injuries.

In fact, rugby and AFL have some of the highest rates of head injury of any contact sport in the world, averaging five concussive injuries per team per season at all levels of competition.<sup>1</sup>

While a single concussion rarely has lasting effects, there is growing evidence that repeated concussions may be associated with chronic and devastating neurological conditions in some retired athletes, including dementia and chronic traumatic encephalopathy (CTE) which has been reported to affect memory, thinking, and mood.

Despite growing public attention about concussion in sport, the global sports community does not have a universal approach to preventing and better managing concussive injuries.

University of Newcastle researcher and clinical neuropsychologist Dr Andrew Gardner is looking to change that by building one of the world's largest longitudinal studies involving retired professional athletes.

## **Creating new knowledge about sports-related head injuries**

In late 2019, Australia's National Rugby League (NRL) announced it would partner with the University of Newcastle and the Spaulding Research Institute at Harvard Medical School in one of the world's largest studies into head injuries and brain health in collision sport.

<sup>1</sup> [Neurology 2014](#)



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The Retired Professional Rugby League Players Brain Health Study is a multi-national, multi-year research program that will transform our understanding of sport-related head injuries. Outcomes will be used to influence policy, practice and care not just for rugby league players but for athletes in other contact and collision sports.

The research will involve around 100 retired NRL players a year and include:

- detailed health surveys to examine the physical, psychological and cognitive health of former NRL players
- a comprehensive study of the brain health of former players through in-person neuropsychological assessment and multimodal brain imaging
- a brain donation program for deceased NRL players, in partnership with the Sydney Brain Bank and funded by Neuroscience Research Australia (NeuRA) and the University of NSW.

The research program is expected to carry on for decades and will provide Gardner and his international collaborators with robust and comprehensive data sets to drive positive change.

When the collaboration was announced, Professor Grant Iverson of Harvard Medical School said the combined expertise and resources will “accelerate the pace of this science, disseminate the findings to the medical and scientific community, and translate the knowledge gained to improve health care for retired NRL players and other former athletes worldwide.”

### **Building concussion research capacity**

Gardner is among the five most prominent sports concussion researchers in Australia and among the top 50 in the world. His work has helped position the University of Newcastle as having the second most prominent and productive concussion research program in Australia.

In 2013 Gardner co-founded Australia’s first public health sports concussion clinic for adults in Newcastle, which provides free evaluation and medical recommendations to athletes suffering concussion.

His expertise has influenced policy papers from Alzheimer’ Australia NSW and Brain Injury

### **Research excellence**

Andrew Gardner’s ability to forge national and international collaborations of relevance has been driven by his exceptional research track record.

**2011:** Awarded the *Most Outstanding Dissertation from the National Academy of Neuropsychology (USA)* – the first and only time this award has been given to a student who studied outside North America

**2013:** Invited member of the Australian Academy of Science *Theo Murphy High Flyers Think Tank*

**2014:** Received an *Australian Endeavour Research Fellowship* to visit Harvard Medical School

**2015:** Received the national *Discovery Award* from Research Australia for outstanding work by an early-career researcher

**2016:** Received a commendation in the national Bupa Foundation *Emerging Health Researcher of the Year Award*

**2017:** Received an AMP Foundation *Tomorrow Makers Fund Award*

**2018:** Awarded a *Fulbright Postdoctoral Award* to Harvard Medical School to work on its Football Players Health Study

**2018:** Recipient of the *NSW Tall Poppy Science Award*

Australia. In 2018 he worked with Sports Medicine Australia to develop a concussion policy to help NSW sporting codes, parents, players, coaches, and trainers better recognise the early signs of head injury and better manage concussion.

Fellowships to Harvard Medical School in 2014 and again in 2018 have resulted in Gardner’s ongoing collaboration with the world-renowned institution. This includes a \$2.2 million research program funded by America’s National Football League (NFL) in 2018 to look at the diagnosis and treatment of concussion and associated co-existing conditions like chronic traumatic encephalopathy (CTE) in former NFL players.

Gardner is a concussion consultant to Rugby Australia, and his expertise is sought by collision sports nationally and internationally.

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