

Amateur players need to beware of long term effects of concussion

March 7 2013

Well timed to coincide with the Super Bowl, the US football final that seems to obsess the nation, President Obama raised the issue of the effects of long term damage caused by concussion in the game. In an interview with *The New Republic*, the President said: "I have to tell you, if I had a son, I'd have to think long and hard before I let him play football."

In the US there are more than 4,000 damage suits currently underway by former [National Football League](#) players who blame authorities for not reducing their risk of [brain damage](#) on the field from repeated concussions.

The issue of long term brain injury due to sport – whether professional or amateur – again hit the headlines this week when Brownlow medallist and AFL premiership player Greg Williams told Seven News that he believes his failing memory can be traced back to the heavy knocks he took while playing football. While it's important to recognise the risk of brain injury in our elite hockey, rugby, AFL, rugby union, etc players – it's also critically important to recognise these same injuries can be happening to our kids every weekend, with much more serious results.

In December last year the international journal, *Brain*, published a study showing evidence of an increased risk brain injury amongst athletes, [military veterans](#) and others who absorbed repeated hits to the head.

The study, which included brain samples taken posthumously from 85

people who had histories of repeated [mild traumatic brain injury](#), adds to a rapidly increasing body of research indicating that even mild head trauma can result in long-term [cognitive impairment](#).

Of the group of 85 people, 80 per cent (68 men)—nearly all of whom played sports—showed evidence of [chronic traumatic encephalopathy](#) (CTE), a degenerative and [incurable disease](#) whose symptoms can include memory loss, depression and dementia.

The Monash Injury Research Institute in association with the University of [New South Wales](#) and the George Institute conducted a three year study looking at the incidence of mild [traumatic brain injury](#) or [concussion](#) in rugby players. Our findings showed high numbers of concussions and relatively poor injury management. This is particularly true when you step away from the professional league. While there is an awareness of the need to rest players after a concussion at the elite level, this same caution has not flowed through to the amateur ranks.

In boxers, it's called 'punch-drunk syndrome' or dementia pugilistica, whereby repeated blows or knocks to the head can cause symptoms such as depression, [memory loss](#), personality changes such as increased irritability, paranoia and aggression, and the early onset of dementia. Media reports in recent years have highlighted ongoing health problems in professional contact sports like rugby, gridiron, wrestling, ice hockey and even soccer (attributed to 'heading' the ball).

The effects of repeated mild traumatic brain injuries culminate in CTE; abnormal proteins accumulate in the brain, causing a degeneration of brain tissue and reduced cognitive functioning. CTE does not show up during brain scans and can only be diagnosed using specific identification techniques post mortem.

Our study followed almost 3000 Sydney school-grade and suburban

rugby union players aged 15 to 48 for between one and three seasons to evaluate the frequency of concussions, injury management, and the impact on player brain function in subsequent days and weeks.

We found a high incidence of concussion among players – seven per cent of players sustained a concussion within 10 hours of play. This is about half the length of an average adult rugby union season. The incidence doubled to 14 per cent with 20 hours of play. And players who sustained one concussion were twice as likely to sustain a second.

Players with a lower body mass index were 10 per cent more likely to sustain a concussion, and those who trained for less than three hours a week were 20 per cent more likely to be concussed than those who spent more time training.

Coaches, sports doctors and physiotherapists were among those who assisted the research, recording concussion incidents during games. According to their reports, 48 per cent of players who sustained a concussion returned to play in the same game, and 34 per cent did not leave the field at all.

This is despite a recommendation from the International Rugby Union Board, supported by the Australian Rugby Union, that players who suffer a concussion take a three-week break from training and play. This regulation is mandatory for all international age-graded players under 19 years. Other players may return to play within three weeks if found to be symptom free and declared fit to play by a recognised neurological specialist.

Players who suffer some loss of cognitive function and who return to the play without fully recovering may increase their risks of further injury.

Alarming, only 22 per cent of players identified as receiving a

concussion in the study reported receiving any return-to-play advice. And 75 per cent of those players did not comply with the three-week stand-down period. No player in the study who received the recommended post-concussion advice complied - with 87 per cent of concussed players returned to either training or competition within one week and 95 per cent had returned within three weeks of injury.

While it appears there was a relatively low level of awareness of the international concussion regulations, the failure of players to follow advice presented a serious barrier to identifying and better managing mild brain injuries.

These findings indicate that return-to-play decisions and the management of sport-related concussion is a challenge for [players](#), support staff and the sporting community in general. There is a real need for sporting organisations and their regulatory bodies to ensure adequate management, particularly as there is limited information on the long-term impact of mild traumatic brain injuries.

Australians love their sport. And we have fantastic organisations, filled with volunteers that manage thousands of sports games all weekend. While we salute those mums and dads on the sidelines with a bag of ice for injuries, there has to be greater recognition that sports injuries can be very serious, with potential long term sequelae and need to be properly managed. In the absence of these risks being managed, more and more parents like the Obamas will either be glad their daughters don't play a contact sport, or refuse to let their sons do so because of the (very real) risk of [brain injury](#).

Provided by Monash University

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