

Client: Leeds Metropolitan University
Source: The Times (Main)
Date: 21 May 2014
Page: 60
Reach: 384459
Size: 659cm2
Value: 20086.32



One in three suffer 'car crash' back injuries in collision sport

New research shows spinal injuries endured by players in both codes are at alarming levels, Daniel Schofield writes

A third of professional rugby players have suffered spinal injuries equivalent to those of a car-crash victim, a pioneering study has revealed. Researchers at Leeds Metropolitan University, Newcastle University and Griffith University in Australia examined 95 active professional union and league players to establish the prevalence of vertebral fractures. Using X-ray imaging technology, they found that 33 per cent had suffered a moderate or severe vertebral fractures.

"Really, these are the types of the injuries that you would see in somebody who had suffered a fall off a high height or in a serious car accident," Karen Hind, of the Carnegie Research Institute at Leeds Metropolitan, said. "It is not something you would expect to see at such a high rate in a sport."

From the 95 players they examined, 120 vertebral fractures were found in 51 of the participants, who were drawn from Aviva Premiership and Super League clubs, with 39 per cent suffering multiple fractures. The rate of clinically diagnosed vertebral fractures in the general young adult population is between one and four per 10,000.

"The rate in our study is abnormally high," Hind said. "Our study is the first to have looked at the prevalence of fractures in rugby players competing at the highest level. Previously, the assumption is that fractures to the spine are rare in rugby. What we have found is that they are not rare."

"We know that rugby players have extremely high bone marrow density, so they are at very low risk of developing osteoporosis. These type of frac-

tures are often associated with brittle bones but these guys have got really strong bones, so that is an indication of the forces at work."

Hind's findings will again raise alarming questions regarding the increasing size and power of professional rugby players. The average England union international is 20kg heavier than his 1995 counterpart. And they are getting bigger. The front row of the England Under-20 team who won the Junior World Championship last year were heavier than the front row that won the 2003 World Cup.

It stands to reason that the bigger the player, the bigger the impact, with the inevitable consequence of more injuries. At any one time in a season, a club coach can expect to be without a quarter to a third of his squad. "Rugby used to be a sport for all shapes and sizes and now it is a sport for freaks," John Fairclough, the former president of the British Sports Trauma Association, said. To many others, rugby is no longer a contact, but a collision sport.

However, the research did show that union forwards did not suffer a higher prevalence of injury, suggesting that tackles, which have been recorded at forces of 7-10 G in another study, rather than the scrum are responsible for the damage. "We actually found there was no difference in the prevalence of fractures between the two codes or between backs and forwards, and what we are suggesting is this has come from the trauma associated with collisions rather than the static pushing in the scrum," Hind said.

Mercifully, catastrophic injuries

within rugby are rare. Nevertheless, they do occur. In March, Alex McKinnon, a back-row forward for Newcastle Knights, the Australian National Rugby League team, underwent surgery to remove his C4 and C5 discs and have anterior fusion after he was subject to a lifting tackle. He may never walk again.

Tom Croft, the England and Leicester flanker, also suffered a triple fracture of his neck after a mistimed tackle in a match against Harlequins two years ago. His surgeon, Peter Hamlyn, said that he could have died from his injuries. The fractures in Hind's study

mostly occurred in the middle of the spine, but both the short-term and long-term consequences are uncertain. "We really don't know because we have never looked at this before," Hind said.

"We [only] know the prevalence of vertical fractures in this cohort. However, to establish relative risk in one season for one player, ideally we would like to look at the players in pre-season and scan them again at the end of the season."

An RFU spokesman said: "We take player welfare extremely seriously and welcome research into the game. This paper will be considered carefully by the Professional Game Board's Medical Advisory Group."

Q&A

How were the fractures detected?
Dual-energy X-ray absorptiometry (DXA) is employed to provide an



Client: Leeds Metropolitan University
Source: The Times (Main)
Date: 21 May 2014
Page: 60
Reach: 384459
Size: 659cm2
Value: 20086.32



accurate picture of vertebral fractures in the spine. Professional clubs also use this technology to measure muscle-to-fat ratios.

How surprising is this research?

Very. Previous studies into spinal

injuries in rugby players focused only on individual cases, usually catastrophic injuries, rather than the overall prevalence.

The incidence of symptomatic spinal injuries has previously been put at 10.9 per 1,000 match hours. However, this research suggests the actual undetected rate will be far higher. Yet the affected players in the study were unsurprised. "Most of the players kind of expected it," Karen Hind said. "Their attitude was, 'This is my job, this is my career and there's nothing I can do about it – so be it.'"

What next?

The players' attitudes, while admirable for their stoicism, reveal that they sometimes need to be protected from themselves.

The visceral physicality of rugby is one of its enduring qualities, but management of injuries (as seen in the recent Florian Fritz incident in the match between Toulouse and Racing Métro) sometimes leaves a lot to be desired, particularly when painkilling cortisone injections are a go-to option for many physios. Hind believes that every professional player should have

their spines examined using DXAs before and after every season, while clearly further research is needed.

Should parents or amateur players be worried?

No. This study was purely focused on the elite spectrum of the game, and the collisions at school and amateur level are in no way comparable to the impacts created between 120kg wrecking balls. The health benefits of playing rugby continue vastly to outweigh the risks.

Words by Daniel Schofield



Client: Leeds Metropolitan University
Source: The Times (Main)
Date: 21 May 2014
Page: 60
Reach: 384459
Size: 659cm2
Value: 20086.32



Breaking point: McKinnon needed anterior fusion and may never walk again after a heavy tackle caused severe injury