

Study highlights high prevalence of hip and knee replacements for former elite rugby players

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Ex-elite rugby players are at greater risk of suffering from osteoarthritis, joint replacement and osteoporosis according to a significant new study co-authored by researchers in our Department for Health. Credit: University of Bath

In new research from the Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis, researchers from the University of Oxford and our Department for Health have identified that former elite, male rugby union players are at a greater risk of suffering from osteoarthritis, joint replacement and osteoporosis, than members of the general population.

The study, published today (Thursday 28 September) in the journal *Scientific Reports*, used a self-report questionnaire to compare health outcomes between 259 former elite players, and 5,186 participants of the English Longitudinal Study of Ageing. The authors also compared health-related quality of life between former players and 2,981 participants from the Health Survey for the England.

They found that rugby players aged 50 and above were more likely to suffer from physician-diagnosed osteoarthritis, site-specific [joint replacement](#) at the hip and knee, and osteoporosis. Reported problems in health-related quality of life were more prevalent for mobility, self-care, pain or discomfort and usual activities, but not for anxiety or depression.

Overwhelming support

Despite this, 95 per cent of former players reported that considering the risks and benefits of their previous participation in rugby union, they would do the same again. Players also reported that considering the risks and benefits of their previous participation, 78 per cent would recommend the sport to their children, relatives and close friends.

Lead researcher Madi Davies, from the Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Systems at the University of Oxford, explained: "Over the last few years, there has been an increasing focus on the long-term effects of sports participation,

which is crucial to inform healthy play, and aging, for former sports people. We are pleased to present our first study findings in *Scientific Reports*, to support on-going dialogue and the development of best practise for longer term athlete care, following sports participation."

Centre deputy director Professor Nigel Arden added: "The rugby study is one of several projects our Centre is undertaking to find out more about the effect of playing sports such as rugby, football and cricket on players' joints and overall health in later life. It is important to assess the effects of sport participation on all aspects of players' health and quality of life, and we have demonstrated some of the long-term benefits of exercise in this study. We will continue to determine which risk factors may be contributing to the increased risk of osteoarthritis so that we can better understand its development and ultimately design prevention strategies."

An important first step

Co-author, Professor Keith Stokes, Head of the Department for Health at Bath and who has led much of our rugby science research said: "This is an important first step in understanding the relationship between playing high level sport and long term bone and joint health. We need to be cautious about attributing cause-and-effect because we are comparing different populations, but the findings will help us to focus future research efforts in this area."

RFU chief medical officer Simon Kemp said: "Long-term player health is a key but, to date, relatively poorly understood area. We were delighted to collaborate in this important study and the findings help us to build a better understanding and more complete picture of both the short and long-term impacts of the sport, so we can continue to develop targeted and evidence based initiatives to support player welfare."

Dr Natalie Carter, head of research liaison and evaluation at Arthritis Research UK, comments: "Over 8.5 million people live with osteoarthritis in the UK. The condition is very painful to live with and affects a person's everyday life. Our charity, Arthritis Research UK, feel that it is very important for us to support studies like this. This study provides information for those who play the sport on the short and long-term risks and benefits associated with rugby. It is also hoped that further studies, building on this work, will generate better preventative advice and treatment for both professional and recreational sports players."

Over the past four years, with support from national governing body, the Rugby Football Union (RFU), the Rugby Players' Association (RPA), the England Rugby Internationals Club, and Oxford and Cambridge Universities, researchers have been recruiting retired international and elite [rugby players](#) to find out more about the long-term consequences of [rugby](#) on players' [health](#).

More information: Madeleine A. M. Davies et al. Health amongst former rugby union players: A cross-sectional study of morbidity and health-related quality of life, *Scientific Reports* (2017). [DOI: 10.1038/s41598-017-12130-y](#)

Provided by University of Bath

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