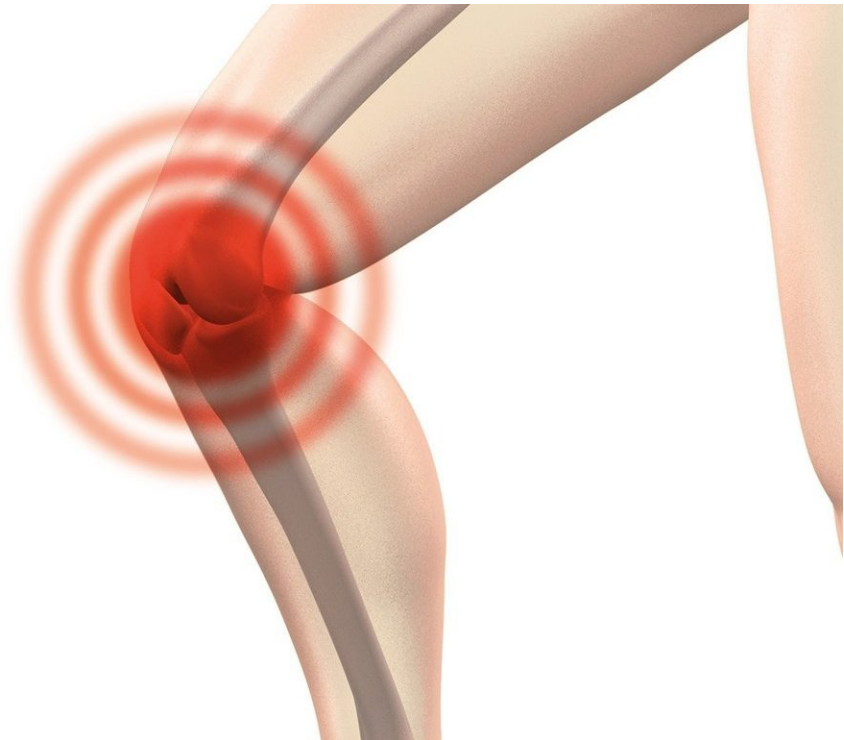


Study reveals hip and knee replacement performance in England and Wales

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The performance of different prosthetic implant combinations used in patients undergoing hip and knee replacements in England and Wales over the last 14 years have, for the first time, been directly compared in two new studies. The University of Bristol findings, published in the *BMJ Open* today, reveal substantial variability in the performance of

different joint replacements, and the number of patients requiring a second surgery.

Using data from the the largest joint replacement register in the world—the National Joint Registry (NJR) for England, Wales, Northern Ireland and the Isle of Man, researchers from Bristol's Musculoskeletal Research Unit and Wrightington Hospital, assessed 4,442 different hip implants used in 797,178 hip replacements, and 449 different types of knee implants used in 947,686 knee replacements between 1 April 2003 and 31 December 2016.

Failure estimates (the number of procedures requiring a second surgery) of each hip or knee [implant](#) brand were compared to the best performing hip or knee implant in the ten years following surgery. The large data set allowed the analysis to be performed for men and women of different ages.

Two thresholds were used for defining the performance of an implant, the first being that implants were at least 100 per cent worse (double the failure rate) than the benchmark implant, the second being that they were at least 20 per cent worse than the benchmark implant.

In analyses of hip replacements at ten years following surgery, it was found that of the 26 implant combinations, with enough data to enable analysis, one had at least a 100 per cent higher risk of revision than the benchmark implant and 11 others had at least 20 per cent higher risk. For knee replacements of the 27 that could be compared at ten years, two implants had at least 100 per cent higher risk of revision and 16 had at least 20 per cent higher risk of revision. Separate analyses of men and women and of different ages illustrate that some implants perform well in some groups, but not others.

Kevin Deere, Senior Research Associate from Bristol's Musculoskeletal

Research Unit and lead author on the studies, commented: "We have shown that commonly used hip and [knee](#) replacements can have excellent results with very low failure rates. However, there is variation in performance and many implants have been used in too few cases to allow meaningful comparison."

Adrian Sayers, the studies' senior author from Bristol's Musculoskeletal Research Unit in the Bristol Medical School; Translational Health Sciences (THS), added: "This is first time that all the different implant combinations used in England and Wales in the last 14 years have been directly compared, and results are available to everyone. This gives patients the opportunity to discuss with their surgeon the choice of implants they intend to use and see how they perform in comparison to other implants. This research will empower patients and surgeons and help in the decision-making process."

Martyn Porter, hip surgeon and previous President of the British Orthopaedic Association, said: "The data produced by this study is very powerful. It allows patients, surgeons and others interested in the care of patients undergoing joint replacement to have a contemporary and relevant reference for comparison of revision rates. Whilst the rate of revision is only one of the metrics by which the success of joint replacement is judged, it is one that is often important to patients. This data is the beginning of a discussion that [patients](#) can have with their surgeon around the type of joint replacement that they might have."

More information: 'Assessing the non-inferiority of prosthesis constructs used in hip replacement using data from the National Joint Registry of England, Wales, Northern Ireland and the Isle of Man: A Benchmarking study' by Kevin Deere, Michael R Whitehouse, Martyn L Porter, Ashley W Blom, Adrian Sayers in *BMJ Open* 2019.

'Assessing the non-inferiority of prosthesis used in total and unicondylar

knee replacements using data from the National Joint Registry of England, Wales, Northern Ireland and the Isle of Man: A benchmarking study' by Kevin Deere, Michael R Whitehouse, Martyn L Porter, Ashley W Blom, Adrian Sayers in *BMJ Open* 2019.

Provided by University of Bristol

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