

Infection after total joint replacement of the hip and knee: research programme including the INFORM RCT

Ashley W Blom,^{1,2*} Andrew D Beswick,²
Amanda Burston,² Fran E Carroll,³ Kirsty Garfield,^{3,4}
Rachael Gooberman-Hill,² Shaun Harris,^{3,4}
Setor K Kunutsor,^{1,2} Athene Lane,^{3,4}
Erik Lenguerrand,² Alasdair MacGowan,⁵
Charlotte Mallon,² Andrew J Moore,²
Sian Noble,³ Cecily K Palmer,^{3,6} Ola Rolfson,^{2,7}
Simon Strange² and Michael R Whitehouse^{1,2}
on behalf of the INFORM group

¹National Institute for Health and Care Research Bristol Biomedical Research Centre, University Hospitals Bristol and Weston NHS Foundation Trust and University of Bristol, Bristol, UK

²Musculoskeletal Research Unit, Translational Health Sciences, Bristol Medical School, University of Bristol, Bristol, UK

³Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, UK

⁴Bristol Randomised Trials Collaboration, University of Bristol, Bristol UK

⁵Department of Medical Microbiology, Southmead Hospital, Bristol, UK

⁶National Institute for Health and Care Research Applied Research Collaboration West (NIHR ARC West), University Hospitals Bristol NHS Foundation Trust and University of Bristol, Bristol, UK

⁷Department of Orthopaedics, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

*Corresponding author Ashley.Blom@bristol.ac.uk

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his institution receives market-rate payment for this teaching from DePuy Synthes (Raynham, MA, USA). He is a co-applicant on a grant from Stryker Corporation investigating the outcome of the Triathlon total knee replacement. He is a member of the National Joint Registry lot 2 contract (statistical analysis) team. He is NIHR Clinical Research Network West of England lead for Trauma and Emergencies, a member of the NIHR Bristol Biomedical Research Centre and principal investigator on two NIHR Health Technology Assessment grants (NIHR129011 and NIHR127849).

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Plain English summary

Research programme including the INFORM RCT

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Plain English summary

People with severe osteoarthritis, other joint conditions or joint injuries may undergo joint replacement to reduce pain and disability. In the UK in 2019, over 200,000 hip and knee replacements were performed. About 1 in 100 become infected. Treatment usually requires two operations to remove and replace the joint, with antibiotics between surgeries. Some surgeons treat joint infection with one operation.

Our research was needed to find out why some patients are predisposed to getting joint infections and how this affects patients and the NHS, and to evaluate treatments.

We reviewed previous research, analysed a national joint registry, interviewed patients and surgeons to find out their experiences of infection, assessed costs to the NHS and patients, and explored aspects of treatments important to patients. Treatments were compared by randomly allocating 140 patients with hip joint infection to one or two operations and assessing the impact on quality of life and health-care costs. A patient forum supported the research.

We found that, after hip and knee replacement, about 0.62% and 0.75% of patients, respectively, had joint infection requiring surgery. It costs over £30,000 to treat a hip joint infection.

We showed that risk of joint infection is greater in men, people who are overweight and those with pre-existing health conditions, and when some surgical techniques are used. Joint infection is difficult to detect, but new tests of joint fluid show promise. Patients and surgeons described the devastating effects of joint infection. Important concerns for patients were the time taken to recover and engage in valued activities and the need for support and information.

The research we reviewed indicated that hip joint infection treated in one or two operations cleared infection equally, but joint registry analysis raised concern about early problems after treatment with one operation. The randomised trial found that recovery was delayed in people receiving two operations. However, after 18 months, the levels of pain, disability and complications were similar between the groups. The NHS and patient costs were lower when treatment was with one operation.

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