Improving patients’ experience and outcome of total joint replacement: the RESTORE programme

Ashley W Blom,1* Neil Artz,2 Andrew D Beswick,1 Amanda Burston,1 Paul Dieppe,3 Karen T Elvers,1 Rachael Gooberman-Hill,1 Jeremy Horwood,4 Paul Jepson,5 Emma Johnson,1 Erik Lenguerrand,1 Elsa Marques,4 Sian Noble,4 Mark Pyke,6 Catherine Sackley,7 Gina Sands,8 Adrian Sayers,1 Victoria Wells1 and Vikki Wylde1

1Musculoskeletal Research Unit, School of Clinical Sciences, University of Bristol, Bristol, UK
2School of Health Professions, Faculty of Health and Human Sciences, Plymouth University, Plymouth, UK
3Medical School, University of Exeter, Exeter, UK
4School of Social and Community Medicine, University of Bristol, Bristol, UK
5School of Sport, Exercise and Rehabilitation Sciences, Birmingham, UK
6North Bristol NHS Trust, Bristol, UK
7Department of Physiotherapy, King’s College London, London, UK
8School of Health Sciences, Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, UK

*Corresponding author

Declared competing interests of authors: Ashley Blom reports grants from National Institute for Health research during the conduct of the study; and grants from Stryker, Orthimo and Azellon outside the programme.

Published August 2016
DOI: 10.3310/pgfar04120

Plain English summary

The RESTORE programme
DOI: 10.3310/pgfar04120

NIHR Journals Library www.journalslibrary.nihr.ac.uk
Many people with pain and disability caused by osteoarthritis receive hip or knee replacement. In around 10% of patients with hip replacement and 20% with knee replacement, pain and disability persist.

In the REsearch STudies into the ORthopaedic Experience (RESTORE) programme, we applied appropriate research methods including literature reviews, interviews with patients and health-care professionals, studies observing patient recovery over time, and randomised trials to assess new methods. Research studies were developed in collaboration with patient representatives.

Patients with worse psychological health, disability or pain before surgery are more likely to have a poor long-term recovery. Patients describe the importance of support by health and social professionals throughout the joint replacement pathway and may benefit from education, pain management, counselling, exercise and management of health conditions before surgery.

Previous small randomised trials suggested that patients might have short-term benefit from exercise or education before surgery, and supply of aids and home modifications and physiotherapy after surgery. We conducted studies that demonstrated the feasibility of trials evaluating the provision of aids and home modifications before surgery and group-based exercise after surgery.

In a literature review and randomised trial we assessed whether or not local anaesthetic injections during surgery improve recovery. In patients with hip replacement, long-term pain was reduced and the treatment was cost-effective. In patients receiving knee replacement, we could not confirm a reduction in pain, probably because patients receive extensive pain control during surgery.

In conclusion, the RESTORE programme has provided important information to guide the development of methods to improve long-term recovery after hip and knee replacement.
Criteria for inclusion in the Programme Grants for Applied Research journal
Reports are published in Programme Grants for Applied Research (PGfAR) if (1) they have resulted from work for the PGfAR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Programme Grants for Applied Research programme
The Programme Grants for Applied Research (PGfAR) programme, part of the National Institute for Health Research (NIHR), was set up in 2006 to produce independent research findings that will have practical application for the benefit of patients and the NHS in the relatively near future. The Programme is managed by the NIHR Central Commissioning Facility (CCF) with strategic input from the Programme Director.

The programme is a national response mode funding scheme that aims to provide evidence to improve health outcomes in England through promotion of health, prevention of ill health, and optimal disease management (including safety and quality), with particular emphasis on conditions causing significant disease burden.

For more information about the PGfAR programme please visit the website: http://www.nihr.ac.uk/funding/programme-grants-for-applied-research.htm

This report
The research reported in this issue of the journal was funded by PGfAR as project number RP-PG-0407-10070. The contractual start date was in December 2008. The final report began editorial review in September 2014 and was accepted for publication in August 2015. As the funder, the PGfAR programme agreed the research questions and study designs in advance with the investigators. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The PGfAR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, CCF, NETSCC, PGfAR or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the PGfAR programme or the Department of Health.

© Queen’s Printer and Controller of HMSO 2016. This work was produced by Blom et al. under the terms of a commissioning contract issued by the Secretary of State for Health. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).
Programme Grants for Applied Research Editor-in-Chief

Professor Paul Little  Professor of Primary Care Research, University of Southampton, UK

NIHR Journals Library Editor-in-Chief

Professor Tom Walley  Director, NIHR Evaluation, Trials and Studies and Director of the EME Programme, UK

NIHR Journals Library Editors

Professor Ken Stein  Chair of HTA Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

Professor Andree Le May  Chair of NIHR Journals Library Editorial Group (EME, HS&DR, PGfAR, PHR journals)

Dr Martin Ashton-Key  Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

Professor Matthias Beck  Chair in Public Sector Management and Subject Leader (Management Group), Queen's University Management School, Queen's University Belfast, UK

Professor Aileen Clarke  Professor of Public Health and Health Services Research, Warwick Medical School, University of Warwick, UK

Dr Tessa Crilly  Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin  Senior Scientific Advisor, Wessex Institute, UK

Ms Tara Lamont  Scientific Advisor, NETSCC, UK

Professor Elaine McColl  Director, Newcastle Clinical Trials Unit, Institute of Health and Society, Newcastle University, UK

Professor William McGuire  Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads  Professor of Health Sciences Research, Health and Wellbeing Research and Development Group, University of Winchester, UK

Professor John Norrie  Health Services Research Unit, University of Aberdeen, UK

Professor John Powell  Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK

Professor James Raftery  Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma  Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts  Professor of Child Health Research, UCL Institute of Child Health, UK

Professor Jonathan Ross  Professor of Sexual Health and HIV, University Hospital Birmingham, UK

Professor Helen Snooks  Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Professor Jim Thornton  Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

Professor Martin Underwood  Director, Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of members of the NIHR Journals Library Board:  
www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact:  nihredit@southampton.ac.uk