

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Joint replacement (primary): hip, knee and shoulder

NHS England has asked NICE to develop a clinical guideline on primary hip, knee and shoulder joint replacement.

The guideline will be developed using the methods and processes outlined in [Developing NICE guidelines: the manual](#).

This guideline will also be used to develop the NICE quality standard for primary hip, knee and shoulder joint replacement.

1 Why the guideline is needed

Hip, knee and shoulder joint replacements are among the most common orthopaedic operations performed in the UK. They are performed to reduce pain and restore function in people with severe disability, most commonly from osteoarthritis (approximately 90% of replacements). In 2016, the National Joint Registry for England, Wales, Northern Ireland and the Isle of Man recorded 101,651 hip replacements 108,713 knee replacements and 6,967 shoulder replacements, an annual increase of 3.5%, 3.8% and 12.3% respectively. Of these, 87,733 were primary hip replacements, 98,147 were primary knee replacements and 5,944 were primary shoulder replacements.

The operations offered vary and include a wide range of joint implants with differing designs, materials for implants (for example, metals, plastics and ceramics), and bone fixation methods. This variability may produce different outcomes, both in short-term function (for example, pain and complications) and in long-term joint survival (that is, how long and well the implant works before revision surgery to replace it with another joint replacement is needed). Many joint replacements can last 10 to 20 years before a revision procedure is

needed, although this is not the case for all types of joint replacements. It is therefore important that people understand the implications of joint replacement, particularly adults who are likely to outlive the implant.

There is also variation in the services provided after hip, knee and shoulder joint replacements, particularly during recovery and rehabilitation. This may affect a person's quality of life, function and satisfaction after a joint replacement. Identifying the best approach for recovery and rehabilitation will enable all healthcare professionals to offer more effective and efficient treatment.

It is important that all healthcare professionals, including surgeons and allied health professionals, and commissioners are involved in the entire care pathway (from community to hospital) to ensure people receive the best care, recovery, rehabilitation and follow-up monitoring after these common orthopaedic procedures.

Associated programmes

Getting It Right First Time (GIRFT) is a national programme designed to improve medical care within the NHS by reducing unwarranted variations. The GIRFT programme in trauma and orthopaedics has been adopted by the Department of Health and Social Care, and NHS England. The British Orthopaedic Association (BOA) report 'Professional guidance to implement Getting it Right First Time in England' identified both variation and scope for quality improvement in the areas of procedure volumes, implant selection and infection rates. GIRFT has identified changes that aim to improve care and patient outcomes, as well as delivering efficiencies, such as reducing unnecessary procedures, and cost savings.

2 Who the guideline is for

People using services, their families and carers, and the public will be able to use the guideline to find out more about what NICE recommends and help them make decisions.

This guideline is for:

- Healthcare professionals in primary, secondary and tertiary settings.
- Non-NHS organisations commissioned to provide services for the NHS or local authorities.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the [Welsh Government](#), [Scottish Government](#), and [Northern Ireland Executive](#).

Equality considerations

NICE has carried out [an equality impact assessment](#) during scoping. The assessment:

- lists equality issues identified, and how they have been addressed
- explains why any groups are excluded from the scope.

The guideline will look at inequalities relating to older people, people with cognitive impairments including dementia and learning disabilities, and people with religious beliefs that are incompatible with certain aspects of surgery, such as blood transfusions.

3 What the guideline will cover

3.1 Who is the focus?

Groups that will be covered

- Adults referred for consideration of primary elective hip, knee or shoulder joint replacement.

No specific subgroups have been identified as needing specific consideration.

Groups that will not be covered

- Children.
- Adults having joint replacement as immediate treatment following fracture.
- Adults having revision joint replacement.

- Adults having joint replacement as treatment for primary or secondary cancer affecting the bones.

3.2 Settings

Settings that will be covered

- Primary, secondary and tertiary healthcare.

3.3 Activities, services or aspects of care

Key areas that will be covered

We will look at evidence in the areas below when developing the guideline, but it may not be possible to make recommendations in all the areas.

- 1 Assessment and shared decision-making.
- 2 Preoperative rehabilitation.
- 3 Anaesthesia.
- 4 Tranexamic acid.
- 5 Preventing infection.
- 6 Wrong implant selection (left, right and incompatible components).
- 7 Joint replacement surgery.
- 8 Postoperative rehabilitation.
- 9 Long-term follow-up and monitoring.

Areas that will not be covered

- 1 Indications for referral for joint replacement.
- 2 Diagnosis.
- 3 Revision of joint replacement.

Related NICE guidance

Published

- [Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism](#) (2018) NICE guideline NG89.

- [Autologous chondrocyte implantation for treating symptomatic articular cartilage defects of the knee](#) (2017) NICE technology appraisal guidance TA477.
- [Hip fracture in adults](#) (2017) NICE quality standard QS16.
- [Spondyloarthritis in over 16s](#) (2017) NICE guideline NG65.
- [Biodegradable subacromial spacer insertion for rotator cuff tears](#) (2016) NICE interventional procedures guidance IPG558.
- [Microstructural scaffold \(patch\) insertion without autologous cell implantation for repairing symptomatic chondral knee defects](#) (2016) NICE interventional procedures guidance IPG560.
- [Implantation of a shock or load absorber for mild to moderate symptomatic medial knee osteoarthritis](#) (2015) NICE interventional procedures guidance IPG512.
- [Osteoarthritis](#) (2015) NICE quality standard QS87.
- [Rheumatoid arthritis in adults](#) (2015). NICE guideline CG79.
- [Platelet-rich plasma injections for osteoarthritis of the knee](#) (2014) NICE interventional procedures guidance IPG491.
- [The OSCAR 3 ultrasonic arthroplasty revision instrument for removing bone cement during prosthetic joint revision](#) (2014) NICE medtech innovation briefing MIB13.
- [Total hip replacement and resurfacing arthroplasty for end-stage arthritis of the hip](#) (2014) NICE technology appraisal guidance TA304.
- [Osteoarthritis: care and management](#) (2014) NICE guideline CG177.
- [Apixaban for the prevention of venous thromboembolism after total hip or knee replacement in adults](#) (2012) NICE technology appraisal guidance TA245.
- [Partial replacement of the meniscus of the knee using a biodegradable scaffold](#) (2012) NICE interventional procedures guidance IPG430.
- [Arthroscopic femoro–acetabular surgery for hip impingement syndrome](#) (2011) NICE interventional procedures guidance IPG408.
- [Hip fracture: management](#) (2011) NICE guideline CG124.
- [The EOS 2D/3D imaging system](#) (2011) NICE diagnostics guidance DG1.

- [Mini-incision surgery for total knee replacement](#) (2010) NICE interventional procedures guidance IPG345.
- [Minimally invasive total hip replacement](#) (2010) NICE interventional procedures guidance IPG363.
- [Shoulder resurfacing arthroplasty](#) (2010) NICE interventional procedures guidance IPG354.
- [Individually magnetic resonance imaging-designed unicompartmental interpositional implant insertion for osteoarthritis of the knee](#) (2009) NICE interventional procedures guidance IPG317.
- [Rivaroxaban for the prevention of venous thromboembolism after total hip or total knee replacement in adults](#) (2009) NICE technology appraisal guidance TA170.
- [Dabigatran etexilate for the prevention of venous thromboembolism after hip or knee replacement surgery in adults](#) (2008) NICE technology appraisal guidance TA157.
- [Arthroscopic knee washout, with or without debridement, for the treatment of osteoarthritis](#) (2007) NICE interventional procedures guidance IPG230.
- [Artificial trapeziometacarpal joint replacement for end-stage osteoarthritis](#) (2005) NICE interventional procedures guidance IPG111.
- [Artificial metacarpophalangeal and interphalangeal joint replacement for end-stage arthritis](#) (2005) NICE interventional procedures guidance IPG110.

In development

- [Rheumatoid arthritis \(update\)](#) NICE guideline. Publication expected July 2018.

NICE guidance about the experience of people using services

NICE has produced the following guidance on the experience of people using services. This guideline will not include additional recommendations on these topics unless there are specific issues related to primary hip, knee and shoulder joint replacement:

- [People's experience in adult social care services](#) (2018) NICE guideline NG86
- [Medicines optimisation](#) (2015) NICE guideline NG5.
- [Patient experience in adult NHS services](#) (2012) NICE guideline CG138.
- [Service user experience in adult mental health](#) (2011) NICE guideline CG136.
- [Medicines adherence](#) (2009) NICE guideline CG76.

3.4 Economic aspects

We will consider economic aspects when making recommendations. We will develop an economic plan that identifies in each review question (or key area in the scope) whether economic considerations are relevant and, if so, whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses using a NHS and personal social services (PSS) perspective, as appropriate.

3.5 Key issues and draft questions

While writing this scope, we have identified the following key issues and draft questions related to them, which are subject to change following committee discussion:

- 1 Assessment and shared decision-making:
 - 1.1 How helpful are decision aids for assessing whether joint replacement is likely to offer the best possible outcomes for an individual adult?
 - 1.2 How useful are decision aids in helping adults who are recommended for elective joint replacement make decisions about their treatment (for example, the type of procedure, timing and implant choice)?
- 2 Preoperative rehabilitation:
 - 2.1 Is preoperative rehabilitation clinically and cost effective for adults having elective joint replacement?

- 3 Anaesthesia:
 - 3.1 In adults having elective joint replacement, what is the clinical and cost effectiveness of nerve blocks, periarticular infiltration and general anaesthesia compared with each other alone or in combination?
- 4 Tranexamic acid:
 - 4.1 In adults having elective joint replacement, what is the clinical and cost effectiveness of tranexamic acid for minimising blood loss from surgery?
- 5 Preventing infections:
 - 5.1 In adults having elective joint replacement, what is the clinical and cost effectiveness of wound lavage during the procedure?
 - 5.2 In adults having elective joint replacement, what is the clinical and cost effectiveness of using laminar flow?
- 6 Wrong implant selection (left, right and incompatible components):
 - 6.1 What would reduce the number of implant selection errors (never events), including systems and processes for selection, in adults having elective joint replacement?
- 7 Joint replacement surgery:
 - 7.1 In adults having elective knee replacement, what is the clinical and cost effectiveness of total knee replacement versus partial knee replacement?
 - 7.2 In adults having elective shoulder replacement for osteoarthritis, what is the clinical and cost effectiveness of hemiarthroplasty versus conventional total arthroplasty?
 - 7.3 In adults having elective shoulder replacement for osteoarthritis, what is the clinical and cost effectiveness of conventional total shoulder arthroplasty versus reverse total shoulder arthroplasty?
 - 7.4 In adults having elective shoulder replacement for pain and functional loss after a previous proximal humeral fracture (not acute trauma), what is the clinical and cost effectiveness of reverse total shoulder replacement versus hemiarthroplasty?
- 8 Postoperative rehabilitation:

8.1 In adults having elective joint replacement, what is the clinical and cost effectiveness of self-directed rehabilitation versus supervised rehabilitation?

8.2 In adults having elective hip replacement, what is the most clinical and cost effective timing and duration for rehabilitation?

8.3 In adults having elective knee replacement, what is the most clinical and cost effective timing and duration for rehabilitation?

8.4 In adults having elective shoulder replacement, what is the most clinical and cost effective timing and duration for rehabilitation?

9 Long-term follow-up and monitoring:

9.1 In adults having elective joint replacement, what is the most clinical and cost-effective monitoring or surveillance strategy?

3.6 Main outcomes

The main outcomes that may be considered when searching for and assessing the evidence are:

- 1 Mortality.
- 2 Quality of life.
- 3 Revision of joint replacement.
- 4 Patient-reported outcome measures (PROMs).
- 5 Pain.
- 6 Length of stay.
- 7 Hospital readmission.
- 8 Surgical site infection.

4 NICE quality standards and NICE Pathways

4.1 NICE Pathways

[NICE Pathways](#) bring together everything we have said on a topic in an interactive flowchart. When this guideline is published, the recommendations will be included in the NICE Pathway on joint replacement (in development).

Other relevant guidance will also be added, including:

- Total hip replacement and resurfacing arthroplasty for end-stage arthritis of the hip (2014) NICE technology appraisal guidance TA304.
- Apixaban for the prevention of venous thromboembolism after total hip or knee replacement in adults (2012) NICE technology appraisal guidance TA245.
- Rivaroxaban for the prevention of venous thromboembolism after total hip or total knee replacement in adults (2009) NICE technology appraisal guidance TA170.
- Dabigatran etexilate for the prevention of venous thromboembolism after hip or knee replacement surgery in adults (2008) NICE technology appraisal guidance TA157.
- Minimally invasive total hip replacement (2010) NICE interventional procedures guidance IPG363.
- Mini-incision surgery for total knee replacement (2010) NICE interventional procedures guidance IPG345.

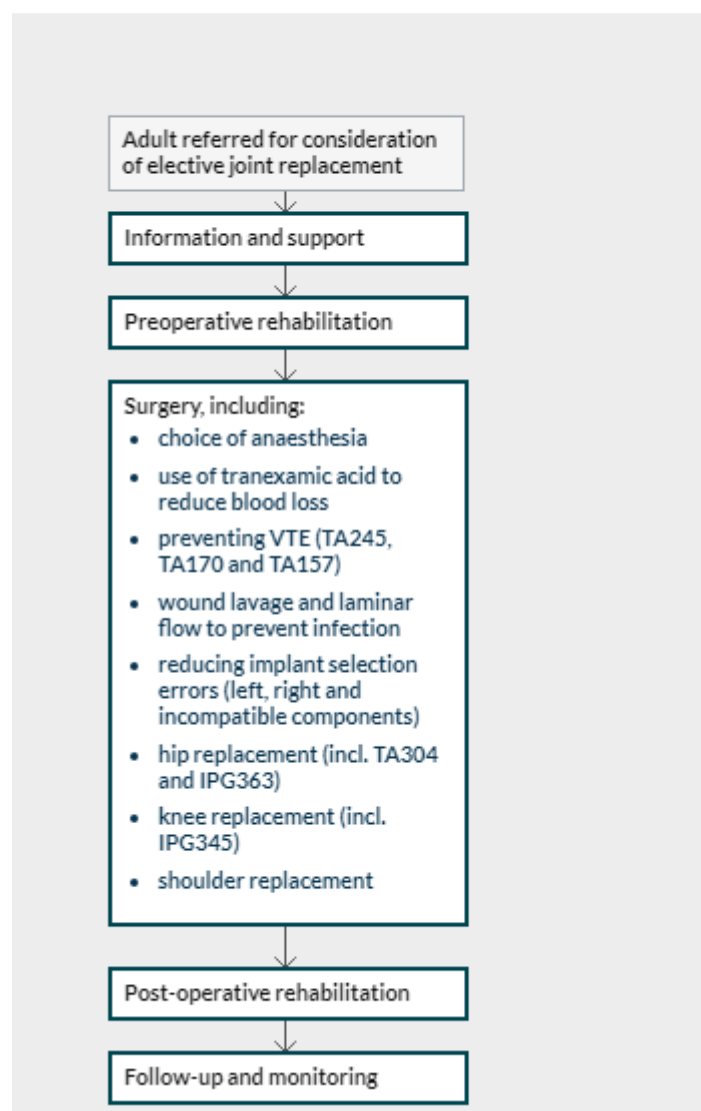
The following guidance may be added:

- Total prosthetic replacement of the temporomandibular joint (2014) NICE interventional procedures guidance IPG500.
- Total wrist replacement (2008) NICE interventional procedures guidance IPG271.
- Artificial trapeziometacarpal joint replacement for end-stage osteoarthritis (2005) NICE interventional procedures guidance IPG111.
- Artificial metacarpophalangeal and interphalangeal joint replacement for end-stage arthritis (2005) NICE interventional procedures guidance IPG110.

An outline based on this scope is included below. It will be adapted and more detail added as the recommendations are written during guideline development.

There will be a link from the NICE Pathway on osteoarthritis.

Joint replacement overview



5 Further information

This is the final scope, which takes into account comments from registered stakeholders during consultation.

The guideline is expected to be published in March 2020.

You can follow progress of the [guideline](#).

Our website has information about how [NICE guidelines](#) are developed.