NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Hip, knee and shoulder joint replacement

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

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 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). The number of joint replacements is increasing in the UK, and the age at which they are performed is becoming younger. In 2016, the UK National Joint Registry 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.

There is variability in the operations offered, which include a wide range of joint implants with differing designs, different materials for implants (for example, metals, plastics and ceramics) and different fixation methods to bone. This variability may give rise to different outcomes, both in short-term function, pain and complications and in long-term joint survival or how long the implant works well 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 in younger people.

There is also variation in the services provided after hip, knee and shoulder
joint replacements, particularly during recovery and rehabilitation, which may
affect the person’s quality of life, function and satisfaction after a joint
replacement. Identifying the best approach for recovery and rehabilitation will
enable all clinicians to treat their patients more effectively and efficiently.

It is important that all clinicians, surgeons, 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 NHS England. The British Orthopaedic Association
(BOA) Professional Guidance to Implement Getting it Right First Time in
England report 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 the reduction of 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 prevent 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 having primary elective joint replacement.

No specific subgroups of people have been identified as needing specific consideration.

Groups that will not be covered

- 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. Information and support needs (for people and their families).
2. Preoperative rehabilitation.
3. Anaesthesia.
4. Tranexamic acid.
5. Infection prevention.
6. Wrong implant selection (left, right and incompatible components).
11. Long-term follow-up and monitoring.

Areas that will not be covered

1. Indications for joint replacement.
2. Assessment and diagnosis
3. Revision of joint replacement.

Related NICE guidance

- Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism (update)

(Publication expected March 2018) NICE guideline.
• **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.
• **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.
• **Joint distraction for ankle osteoarthritis** (2015) NICE interventional procedures guidance IPG538.
• **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.
• **Total prosthetic replacement of the temporomandibular joint** (2014) NICE interventional procedures guidance IPG500.
• **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.


• **Minimally invasive total hip replacement** (2010) NICE interventional procedures guidance IPG363.

• **Shoulder resurfacing arthroplasty** (2010) NICE interventional procedures guidance IPG354.

• **Venous thromboembolism: reducing the risk for patients in hospital** (2010) NICE guideline CG92.

• **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.


• **Total wrist replacement** (2008) NICE interventional procedures guidance IPG271.

• **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.

**NICE guidance about the experience of people using NHS services**

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

- 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 take economic aspects into account when making recommendations. We will develop an economic plan that states for 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.

3.5 Key issues and draft questions

While writing this scope, we have identified the following key issues, and key questions related to them.

All questions relate to hip, knee and shoulder joint replacement surgery unless specifically stated.

1 Information and support needs:
   1.1 What information, including information about surgical risks and benefits, and support do people who are having elective joint replacement and their families or carers need?
   1.2 What is the effectiveness of decision aids in helping people who are referred for elective joint replacement make decisions about their treatment (for example, the type of procedure and implant)?

2 Preoperative rehabilitation:
   2.1 Is preoperative rehabilitation clinically and cost effective for people having elective joint replacement?
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?

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?

Infection preventions:
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?

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?

Hip replacement surgery:
7.1 In adults having elective hip replacement, what is the clinical and cost effectiveness of cemented implants versus uncemented implants versus hybrid implants?
7.2 In adults having elective hip replacement, what is the clinical and cost effectiveness of bearing surfaces: ceramic-on-polyethylene versus ceramic-on-ceramic versus metal-on-polyethylene?

Knee replacement surgery:
8.1 In adults having elective knee replacement, what is the clinical and cost effectiveness of total knee replacement versus partial knee replacement?

Shoulder replacement surgery:
9.1 In adults having elective shoulder replacement for osteoarthritis, what is the clinical and cost effectiveness of hemiarthroplasty versus conventional total arthroplasty?
9.2 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?

9.3 In adults having elective shoulder replacement for pain and functional loss after a previous proximal humeral fractures (not acute trauma), what is the clinical and cost effectiveness of reverse total shoulder replacement versus hemiarthroplasty?

10 Post-operative rehabilitation:

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

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

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

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

11 Long-term follow-up and monitoring:

11.1 In adults having elective joint replacement, what is the most clinical and cost effective monitoring or surveillance strategy (including frequency and by whom)?

3.6 Main outcomes

The main outcomes that will 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.
4 Surgical site infection.

4 NICE quality standards and NICE Pathways

4.1 NICE quality standards

NICE quality standards that may use this guideline as an evidence source when they are being developed

- Hip, knee and shoulder joint replacement. NICE quality standard.
  Publication date to be confirmed.

4.2 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.


- Rivaroxaban for the prevention of venous thromboembolism after total hip or total knee replacement in adults (2009) NICE technology appraisal guidance TA170.


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.
Joint replacement overview

Adult having elective joint replacement

Information and support

Preoperative rehabilitation

Surgery, including:
- choice of anaesthesia
- use of tranexamic acid to reduce blood loss
- preventing VTE (TA245, TA170 and TA157)
- wound lavage and laminar flow to prevent infection
- reducing implant selection errors (left, right and incompatible components)
- hip replacement (incl. TA304 and IPG363)
- knee replacement (incl. IPG345)
- shoulder replacement

Post-operative rehabilitation

Follow-up and monitoring

5 Further information

This is the draft scope for consultation with registered stakeholders. The consultation dates are 8 January 2018 to 5 February 2018.

The guideline is expected to be published in March 2020.

You can follow progress of the guideline.
https://www.nice.org.uk/guidance/indevelopment/gid-ng10084

Our website has information about how NICE guidelines are developed.