

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

29 types of joint replacements. It is therefore important that people understand
30 the implications of joint replacement, particularly in younger people.

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

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

40 **Associated programmes**

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

51 **2 Who the guideline is for**

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

55 This guideline is for:

- 56 • Healthcare professionals in primary, secondary and tertiary settings.

- 57 • Non-NHS organisations commissioned to provide services for the NHS or
58 local authorities.

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

62 ***Equality considerations***

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

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

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

71 **3 What the guideline will cover**

72 **3.1 Who is the focus?**

73 **Groups that will be covered**

- 74 • Adults having primary elective joint replacement.

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

77 **Groups that will not be covered**

- 78 • Adults having joint replacement as immediate treatment following fracture.
79 • Adults having revision joint replacement.
80 • Adults having joint replacement as treatment for primary or secondary
81 cancer affecting the bones.

82 **3.2 Settings**

83 **Settings that will be covered**

- 84 • Primary, secondary and tertiary healthcare.

85 **3.3 Activities, services or aspects of care**

86 **Key areas that will be covered**

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

89 1 Information and support needs (for people and their families).

90 2 Preoperative rehabilitation.

91 3 Anaesthesia.

92 4 Tranexamic acid.

93 5 Infection prevention.

94 6 Wrong implant selection (left, right and incompatible components).

95 7 Hip replacement surgery.

96 8 Knee replacement surgery.

97 9 Shoulder replacement surgery.

98 10 Post-operative rehabilitation.

99 11 Long-term follow-up and monitoring.

100 **Areas that will not be covered**

101 1 Indications for joint replacement.

102 2 Assessment and diagnosis

103 3 Revision of joint replacement.

104 **Related NICE guidance**

- 105 • [Venous thromboembolism in over 16s: reducing the risk of hospital-](#)
106 [acquired deep vein thrombosis or pulmonary embolism \(update\)](#)

107 (Publication expected March 2018) NICE guideline.

- 108 • [Autologous chondrocyte implantation for treating symptomatic articular](#)
109 [cartilage defects of the knee](#) (2017) NICE technology appraisal guidance
110 TA477.
- 111 • [Hip fracture in adults](#) (2017) NICE quality standard QS16.
- 112 • [Biodegradable subacromial spacer insertion for rotator cuff tears](#) (2016)
113 NICE interventional procedures guidance IPG558.
- 114 • [Microstructural scaffold \(patch\) insertion without autologous cell](#)
115 [implantation for repairing symptomatic chondral knee defects](#) (2016) NICE
116 interventional procedures guidance IPG560.
- 117 • [Implantation of a shock or load absorber for mild to moderate symptomatic](#)
118 [medial knee osteoarthritis](#) (2015) NICE interventional procedures guidance
119 IPG512.
- 120 • [Joint distraction for ankle osteoarthritis](#) (2015) NICE interventional
121 procedures guidance IPG538.
- 122 • [Osteoarthritis](#) (2015) NICE quality standard QS87.
- 123 • [Platelet-rich plasma injections for osteoarthritis of the knee](#) (2014) NICE
124 interventional procedures guidance IPG491.
- 125 • [The OSCAR 3 ultrasonic arthroplasty revision instrument for removing](#)
126 [bone cement during prosthetic joint revision](#) (2014) NICE medtech
127 innovation briefing MIB13.
- 128 • [Total hip replacement and resurfacing arthroplasty for end-stage arthritis of](#)
129 [the hip](#) (2014) NICE technology appraisal guidance TA304.
- 130 • [Total prosthetic replacement of the temporomandibular joint](#) (2014) NICE
131 interventional procedures guidance IPG500.
- 132 • [Osteoarthritis: care and management](#) (2014) NICE guideline CG177.
- 133 • [Apixaban for the prevention of venous thromboembolism after total hip or](#)
134 [knee replacement in adults](#) (2012) NICE technology appraisal guidance
135 TA245.
- 136 • [Partial replacement of the meniscus of the knee using a biodegradable](#)
137 [scaffold](#) (2012) NICE interventional procedures guidance IPG430.
- 138 • [Arthroscopic femoro–acetabular surgery for hip impingement syndrome](#)
139 (2011) NICE interventional procedures guidance IPG408.

- 140 • [Hip fracture: management](#) (2011) NICE guideline CG124.
- 141 • [The EOS 2D/3D imaging system](#) (2011) NICE diagnostics guidance DG1.
- 142 • [Mini-incision surgery for total knee replacement](#) (2010) NICE interventional
143 procedures guidance IPG345.
- 144 • [Minimally invasive total hip replacement](#) (2010) NICE interventional
145 procedures guidance IPG363.
- 146 • [Shoulder resurfacing arthroplasty](#) (2010) NICE interventional procedures
147 guidance IPG354.
- 148 • [Venous thromboembolism: reducing the risk for patients in hospital](#) (2010)
149 NICE guideline CG92.
- 150 • [Individually magnetic resonance imaging-designed unicompartmental
151 interpositional implant insertion for osteoarthritis of the knee](#) (2009) NICE
152 interventional procedures guidance IPG317.
- 153 • [Rivaroxaban for the prevention of venous thromboembolism after total hip
154 or total knee replacement in adults](#) (2009) NICE technology appraisal
155 guidance TA170.
- 156 • [Dabigatran etexilate for the prevention of venous thromboembolism after
157 hip or knee replacement surgery in adults](#) (2008) NICE technology
158 appraisal guidance TA157.
- 159 • [Total wrist replacement](#) (2008) NICE interventional procedures guidance
160 IPG271.
- 161 • [Arthroscopic knee washout, with or without debridement, for the treatment
162 of osteoarthritis](#) (2007) NICE interventional procedures guidance IPG230.
- 163 • [Artificial trapeziometacarpal joint replacement for end-stage osteoarthritis](#)
164 (2005) NICE interventional procedures guidance IPG111.
- 165 • [Artificial metacarpophalangeal and interphalangeal joint replacement for
166 end-stage arthritis](#) (2005) NICE interventional procedures guidance
167 IPG110.

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

169 NICE has produced the following guidance on the experience of people using
170 the NHS. This guideline will not include additional recommendations on these

171 topics unless there are specific issues related to hip, knee and shoulder joint
172 replacement:

- 173 • [Medicines optimisation](#) (2015) NICE guideline NG5
- 174 • [Patient experience in adult NHS services](#) (2012) NICE guideline CG138
- 175 • [Service user experience in adult mental health](#) (2011) NICE guideline
176 CG136
- 177 • [Medicines adherence](#) (2009) NICE guideline CG76

178 **3.4 Economic aspects**

179 We will take economic aspects into account when making recommendations.
180 We will develop an economic plan that states for each review question (or key
181 area in the scope) whether economic considerations are relevant, and if so
182 whether this is an area that should be prioritised for economic modelling and
183 analysis. We will review the economic evidence and carry out economic
184 analyses, using a NHS and personal social services (PSS) perspective.

185 **3.5 Key issues and draft questions**

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

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

190 1 Information and support needs:

191 1.1 What information, including information about surgical risks and
192 benefits, and support do people who are having elective joint
193 replacement and their families or carers need?

194 1.2 What is the effectiveness of decision aids in helping people who are
195 referred for elective joint replacement make decisions about their
196 treatment (for example, the type of procedure and implant)?

197 2 Preoperative rehabilitation:

198 2.1 Is preoperative rehabilitation clinically and cost effective for people
199 having elective joint replacement?

- 200 3 Anaesthesia:
- 201 3.1 In adults having elective joint replacement, what is the clinical and
- 202 cost effectiveness of nerve blocks, periarticular infiltration and general
- 203 anaesthesia compared with each other alone or in combination?
- 204 4 Tranexamic acid:
- 205 4.1 In adults having elective joint replacement, what is the clinical and
- 206 cost effectiveness of tranexamic acid for minimising blood loss from
- 207 surgery?
- 208 5 Infection preventions:
- 209 5.1 In adults having elective joint replacement, what is the clinical and
- 210 cost effectiveness of wound lavage during the procedure?
- 211 5.2 In adults having elective joint replacement, what is the clinical and
- 212 cost effectiveness of using laminar flow?
- 213 6 Wrong implant selection (left, right and incompatible components):
- 214 6.1 What would reduce the number of implant selection errors (never
- 215 events), including systems and processes for selection, in adults having
- 216 elective joint replacement?
- 217 7 Hip replacement surgery:
- 218 7.1 In adults having elective hip replacement, what is the clinical and
- 219 cost effectiveness of cemented implants versus uncemented implants
- 220 versus hybrid implants?
- 221 7.2 In adults having elective hip replacement, what is the clinical and
- 222 cost effectiveness of bearing surfaces: ceramic-on-polyethylene versus
- 223 ceramic-on-ceramic versus metal-on-polyethylene?
- 224 8 Knee replacement surgery:
- 225 8.1 In adults having elective knee replacement, what is the clinical and
- 226 cost effectiveness of total knee replacement versus partial knee
- 227 replacement?
- 228 9 Shoulder replacement surgery:
- 229 9.1 In adults having elective shoulder replacement for osteoarthritis,
- 230 what is the clinical and cost effectiveness of hemiarthroplasty versus
- 231 conventional total arthroplasty?

232 9.2 In adults having elective shoulder replacement for osteoarthritis,
233 what is the clinical and cost effectiveness of conventional total shoulder
234 arthroplasty versus reverse total shoulder arthroplasty?

235 9.3 In adults having elective shoulder replacement for pain and
236 functional loss after a previous proximal humeral fractures (not acute
237 trauma), what is the clinical and cost effectiveness of reverse total
238 shoulder replacement versus hemiarthroplasty?

239 10 Post-operative rehabilitation:

240 10.1 In adults having elective joint replacement, what is the clinical and
241 cost effectiveness of self-directed rehabilitation versus supervised
242 rehabilitation?

243 10.2 In adults having elective hip joint replacement, what is the most
244 clinical and cost effective timing and duration for rehabilitation?

245 10.3 In adults having elective knee joint replacement, what is the most
246 clinical and cost effective timing and duration for rehabilitation?

247 10.4 In adults having elective shoulder joint replacement, what is the
248 most clinical and cost effective timing and duration for rehabilitation?

249 11 Long-term follow-up and monitoring:

250 11.1 In adults having elective joint replacement, what is the most clinical
251 and cost effective monitoring or surveillance strategy (including
252 frequency and by whom)?

253 **3.6 Main outcomes**

254 The main outcomes that will be considered when searching for and assessing
255 the evidence are:

256 1 Mortality.

257 2 Quality of life.

258 3 Revision of joint replacement.

259 4 Patient Reported Outcome Measures (PROMs).

260 5 Pain.

261 6 Length of stay.

262 7 Hospital readmission.

263 8 Surgical site infection.

264 **4 NICE quality standards and NICE Pathways**

265 **4.1 NICE quality standards**

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

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

270 **4.2 NICE Pathways**

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

274 Other relevant guidance will also be added, including:

- 275 • Total hip replacement and resurfacing arthroplasty for end-stage
276 arthritis of the hip (2014) NICE technology appraisal guidance TA304.
- 277 • Apixaban for the prevention of venous thromboembolism after total hip
278 or knee replacement in adults (2012) NICE technology appraisal
279 guidance TA245.
- 280 • Rivaroxaban for the prevention of venous thromboembolism after total
281 hip or total knee replacement in adults (2009) NICE technology
282 appraisal guidance TA170.
- 283 • Dabigatran etexilate for the prevention of venous thromboembolism
284 after hip or knee replacement surgery in adults (2008) NICE technology
285 appraisal guidance TA157.
- 286 • Minimally invasive total hip replacement (2010) NICE interventional
287 procedures guidance IPG363.

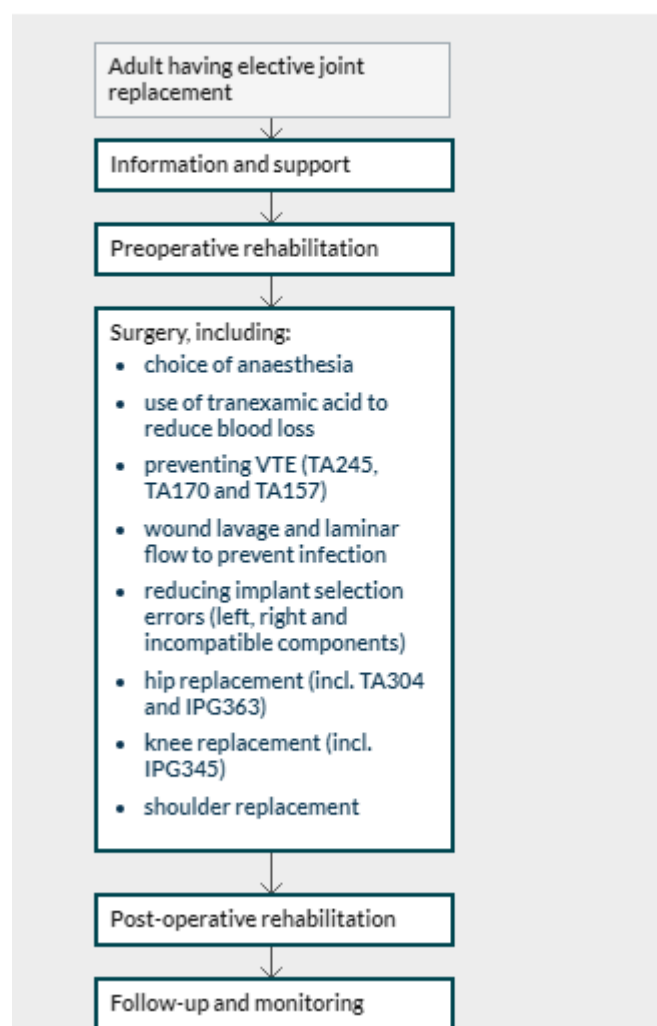
- 288 • Mini-incision surgery for total knee replacement (2010) NICE
289 interventional procedures guidance IPG345.

290 The following guidance may be added:

- 291 • Total prosthetic replacement of the temporomandibular joint (2014)
292 NICE interventional procedures guidance IPG500.
- 293 • Total wrist replacement (2008) NICE interventional procedures
294 guidance IPG271.
- 295 • Artificial trapeziometacarpal joint replacement for end-stage
296 osteoarthritis (2005) NICE interventional procedures guidance IPG111.
- 297 • Artificial metacarpophalangeal and interphalangeal joint replacement
298 for end-stage arthritis (2005) NICE interventional procedures guidance
299 IPG110.

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

Joint replacement overview



303

304 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.

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