

Evidence Sources: Osteoarthritis of the Knee Clinical Care Standard

2024

Introduction

The quality statements for the *Osteoarthritis of the Knee Clinical Care Standard* were developed in consultation with the Osteoarthritis of the Knee Clinical Care Standard Review working group based on best available evidence and guideline recommendations.

Literature searches are conducted by the Australian Commission on Safety and Quality in Health Care (the Commission) at different stages during the development and review of a clinical care standard and include searching for current and relevant:

- Australian clinical practice guidelines, standards and policies
- International clinical practice guidelines
- Other high-level evidence, such as systematic reviews and meta-analyses.

Where limited evidence is available, the Commission consults with a range of stakeholders to explore issues and develop possible solutions.

Initial searches for the *Osteoarthritis of the Knee Clinical Care Standard* (the Standard) were conducted in 2016 and 2017. A review of the key guidelines and other evidence sources underpinning the original Standard was conducted in 2023-24 to inform the review process.

An overview of the key evidence sources for the revised *Osteoarthritis of the Knee Clinical Care Standard* is presented in Table 1. A full list of the evidence sources for each of the quality statements is also included.

Table 1: Overview of the key evidence sources for the Osteoarthritis of Knee Clinical Care Standard*

| Evidence source | Relevance to the Quality Statements (QS) | | | | | | | |
|--|--|------------------------------------|---------------------------------------|--|---|--|------------------------|-----------------|
| | QS1. Comprehensive assessment and diagnosis | QS2. Appropriate use of imaging | QS3. Education and self-management | QS4. Physical activity and exercise | QS5. Weight management and nutrition | QS6. Medicines used to manage pain and mobility | QS7. Patient review | QS8. Surgery |
| Australian guidelines and standards | | | | | | | | |
| Royal Australian and New Zealand College of Radiologists. Clinical radiology written report guidelines. Sydney: RANZCR; 2020 Nov. | | ✓ | | | | | | |
| Royal Australian College of General Practitioners. Clinical guidance for MRI referral. East Melbourne: RACGP; 2013 Oct. | | ✓ | | | | | | |
| Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug]. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| International guidelines and standards | | | | | | | | |
| Bannuru RR, Osani MC, Vaysbrot EE, Arden NK, Bennell K, Bierma-Zeinstra SMA, et al. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis Cartilage [Internet]. 2019 Jul;27(11):1578–89. | | | ✓ | ✓ | ✓ | | | |
| Brophy RH, Fillingham YA. AAOS Clinical Practice Guideline Summary: Management of osteoarthritis of the knee (nonarthroplasty), Third edition. J Am Acad Orthop Surg. 2022 May 1;30(9):e721–9. | | | | | ✓ | | | ✓ |

| Evidence source | Relevance to the Quality Statements (QS) | | | | | | | |
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| Geenen R, Overman CL, Christensen R, Asenlof P, Capela S, Huisinga KL, et al. EULAR recommendations for the health professional's approach to pain management in inflammatory arthritis and osteoarthritis. <i>Ann Rheum Dis</i> 2018 Jun;77(6):797–807. | ✓ | | | ✓ | | | ✓ | |
| Kolasinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. <i>Arthritis Care Res.</i> 2020 Jan 6;72(2):149–62. | ✓ | ✓ | | | | ✓ | | |
| National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226 . | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| National Institute for Health and Care Excellence. Osteoarthritis in over 16s Quality standard [QS87] [Internet]. NICE; 2015 [updated 2022 Oct 19]. Available from: www.nice.org.uk/guidance/qs87 . | | ✓ | | | | | | |
| Other sources | | | | | | | | |
| Australian Knee Society and Australian Orthopaedic Association. Position Statement from the Australian Knee Society on Arthroscopic Surgery of the Knee, including reference to the presence of Osteoarthritis or Degenerative Joint Disease [Internet] 2016. Available from https://www.kneesociety.org.au/resources/AKS-AOA-Arthroscopy-Position-Statement-Final-Oct-2016.pdf | | | | | | | | ✓ |

| Evidence source | Relevance to the Quality Statements (QS) | | | | | | | |
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| | QS1. Comprehensive assessment and diagnosis | QS2. Appropriate use of imaging | QS3. Education and self-management | QS4. Physical activity and exercise | QS5. Weight management and nutrition | QS6. Medicines used to manage pain and mobility | QS7. Patient review | QS8. Surgery |
| Chu IJH, Lim AYT, Ng CLW. Effects of meaningful weight loss beyond symptomatic relief in adults with knee osteoarthritis and obesity: a systematic review and meta-analysis. <i>Obes Rev.</i> 2018 Nov;19(11):1597–607. | | | | | ✓ | | | |
| Holden MA, Hattle M, Runhaar J, Riley RD, Healey EL, Quicke J, et al. Moderators of the effect of therapeutic exercise for knee and hip osteoarthritis: a systematic review and individual participant data meta-analysis. <i>Lancet Rheumatology.</i> 2023;5(7):e386–400. | | | | ✓ | | | | |
| O'Connor D, Johnston RV, Brignardello-Petersen R, Poolman RW, Cyril S, Vandvik PO, et al. Arthroscopic surgery for degenerative knee disease (osteoarthritis including degenerative meniscal tears). <i>Cochrane Database Syst Rev [Internet].</i> 2022 Mar 3;2022(3). Available from: doi.org/10.1002/14651858.CD014328. | | | | | | | | ✓ |
| Villadsen A, Overgaard S, Holsgaard-Larsen A, Christensen R, Roos EM. Postoperative effects of neuromuscular exercise prior to hip or knee. | | | | ✓ | | | | ✓ |

* Only key Australian and International sources are included in this table. Other evidence sources are listed in the following tables for each quality statement.

EVIDENCE SOURCES FOR EACH QUALITY STATEMENT

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| Quality Statement 1: Comprehensive assessment and diagnosis | A patient with suspected knee osteoarthritis receives a comprehensive, person-centred assessment which includes a detailed history of the presenting symptoms, comorbidities, a physical examination, and a psychosocial evaluation of factors affecting quality of life and participation in activities. A diagnosis of knee osteoarthritis can be confidently made based on this assessment. |
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EVIDENCE SOURCES

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|---|
| Australian guidelines and standards |
| Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018. |
| Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug]. |
| International guidelines and standards |
| Geenen R, Overman CL, Christensen R, Asenlof P, Capela S, Huisinga KL, et al. EULAR recommendations for the health professional's approach to pain management in inflammatory arthritis and osteoarthritis. <i>Ann Rheum Dis</i> 2018 Jun;77(6):797–807. |
| Kolasinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. <i>Arthritis Care Res.</i> 2020 Jan 6;72(2):149–62. |
| National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226 . |

**Quality Statement 2:
Appropriate use of
imaging**

Imaging is not routinely used to diagnose knee osteoarthritis and is not offered to a patient with suspected knee osteoarthritis. When clinically warranted, X-ray is the first-line imaging. Magnetic resonance imaging (MRI), computerised tomography (CT) and ultrasound are not appropriate investigations to diagnose knee osteoarthritis. The limited value of imaging is discussed with the patient, including that imaging results are not required for effective non-surgical management.

EVIDENCE SOURCES

Australian guidelines and standards

Royal Australian and New Zealand College of Radiologists. Clinical radiology written report guidelines. Sydney: RANZCR; 2020 Nov.

Royal Australian College of General Practitioners. Clinical guidance for MRI referral. East Melbourne: RACGP; 2013 Oct.

Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018.

Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug].

International guidelines and standards

Kolasinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. *Arthritis Care Res.* 2020 Jan 6;72(2):149–62.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s Quality standard [QS87] [Internet]. NICE; 2015 [updated 2022 Oct 19]. Available from: www.nice.org.uk/guidance/qs87.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management | Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226.

Additional sources

Englund M, Guermazi A, Gale D, Hunter DJ, Aliabadi P, Clancy M, et al. Incidental meniscal findings on knee MRI in middle-aged and elderly persons. *N Engl J Med.* 2008 Sep 11;359(11):1108–15.

Guermazi A, Niu J, Hayashi D, Roemer FW, Englund M, Neogi T, et al. Prevalence of abnormalities in knees detected by MRI in adults without knee osteoarthritis: population based observational study (Framingham Osteoarthritis Study). *BMJ.* 2012 Aug 29;345:e5339.

McAlister S, McGain F, Breth-Petersen M, Story D, Charlesworth K, Ison G, et al. The carbon footprint of hospital diagnostic imaging in Australia. *Lancet Reg Health West Pac.* 2022 May 3;24:100459.

**Quality Statement 3:
Education and self-
management**

Information about knee osteoarthritis and treatment options is discussed with the patient. The patient participates in developing an individualised self-management plan that addresses their physical, functional, and psychosocial health needs.

EVIDENCE SOURCES

Australian guidelines and standards

Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018.

Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug].

International guidelines and standards

Bannuru RR, Osani MC, Vaysbrot EE, Arden NK, Bennell K, Bierma-Zeinstra SMA, et al. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis Cartilage [Internet]. 2019 Jul;27(11):1578–89.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management | Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226.

**Quality Statement 4:
Physical activity and
exercise**

A patient with knee osteoarthritis is advised that being active can help manage knee pain and improve function. The patient is offered advice on physical activity and exercise that is tailored to their priorities and preferences. The patient is encouraged to set exercise and physical activity goals and is recommended services or programs to help them achieve their goals.

EVIDENCE SOURCES

Australian guidelines and standards

Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018.

Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug].

International guidelines and standards

Bannuru RR, Osani MC, Vaysbrot EE, Arden NK, Bennell K, Bierma-Zeinstra SMA, et al. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis Cartilage [Internet]. 2019 Jul;27(11):1578–89.

Geenen R, Overman CL, Christensen R, Asenlof P, Capela S, Huisinga KL, et al. EULAR recommendations for the health professional's approach to pain management in inflammatory arthritis and osteoarthritis. Ann Rheum Dis 2018 Jun;77(6):797–807.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management | Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226.

Additional sources

Holden MA, Hattle M, Runhaar J, Riley RD, Healey EL, Quicke J, et al. Moderators of the effect of therapeutic exercise for knee and hip osteoarthritis: a systematic review and individual participant data meta-analysis. Lancet Rheumatology. 2023;5(7):e386–400.

Punnoose A, Claydon-Mueller LS, Weiss O, Zhang J, Rushton A, Khanduja V. Prehabilitation for patients undergoing orthopedic surgery: a systematic review and meta-analysis. JAMA Netw Open. 2023 Apr 3;6(4):e238050.

Skou ST, Roos EM, Laursen MB, Rathleff MS, Arendt-Nielsen L, Simonsen O, et al. A randomized, controlled trial of total knee replacement. N Engl J Med. 2015 Oct 22;373(17):1597–606.

Villadsen A, Overgaard S, Holsgaard-Larsen A, Christensen R, Roos EM. Postoperative effects of neuromuscular exercise prior to hip or knee arthroplasty: a randomised controlled trial. Ann Rheum Dis. 2014 Jun 1;73(6):1130–7.

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| Quality Statement 5: Weight management and nutrition | A patient with knee osteoarthritis is advised of the impact of body weight on symptoms. The patient is offered support to manage their weight and optimise nutrition that is tailored to their priorities and preferences. The patient is encouraged to set weight management goals and is referred for any services required to help them achieve these goals. |
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EVIDENCE SOURCES

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| Australian guidelines and standards |
| Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018. |
| Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug]. |
| International guidelines and standards |
| Bannuru RR, Osani MC, Vaysbrot EE, Arden NK, Bennell K, Bierma-Zeinstra SMA, et al. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis Cartilage [Internet]. 2019 Jul;27(11):1578–89. |
| Brophy RH, Fillingham YA. AAOS Clinical Practice Guideline Summary: Management of osteoarthritis of the knee (nonarthroplasty), Third edition. J Am Acad Orthop Surg. 2022 May 1;30(9):e721–9. |
| National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226 . |
| Additional sources |
| Chu IJH, Lim AYT, Ng CLW. Effects of meaningful weight loss beyond symptomatic relief in adults with knee osteoarthritis and obesity: a systematic review and meta-analysis. Obes Rev. 2018 Nov;19(11):1597–607. |
| Mechanick JI, Apovian C, Brethauer S, Timothy Garvey W, Joffe AM, Kim J, et al. Clinical practice guidelines for the perioperative nutrition, metabolic, and nonsurgical support of patients undergoing bariatric procedures – 2019 update: cosponsored by American Association of Clinical Endocrinologists/American College of Endocrinology, The Obesity Society, American Society for Metabolic and Bariatric Surgery, Obesity Medicine Association, and American Society of Anesthesiologists. Obesity. 2020 Mar 23;28(4):01–58. |
| Samuels J, Zak S, Schwartzkopf R, Ren-Fielding C, Parikh M, McLawhorn A, et al. Knee osteoarthritis outcomes in patients with severe obesity following bariatric surgery or total knee arthroplasty: the swift trial. Osteoarthr Cartilage. 2020 Apr;28:S463–64. |

**Quality Statement 6:
Medicines used to
manage pain and
mobility**

A patient with knee osteoarthritis is offered medicines to manage their pain and mobility in accordance with the current version of the *Therapeutic Guidelines* or locally endorsed, evidence-based guidelines. A patient is not offered opioid analgesics for knee osteoarthritis because the risk of harm outweighs the benefits.

EVIDENCE SOURCES

Australian guidelines and standards

Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018.

Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug].

International guidelines and standards

Kolasinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. *Arthritis Care Res.* 2020 Jan 6;72(2):149–62.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management | Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226.

Additional sources

Fisher E, Moore RA, Fogarty AE, Finn DP, Finnerup NB, Gilron I, et al. Cannabinoids, cannabis, and cannabis-based medicine for pain management. *Pain.* 2021 Jul 1;162(Suppl 1):S45–66.

Langford AV, Lin CC, Bero L, Blyth FM, Doctor JN, Holliday S, et al. Clinical practice guideline for deprescribing opioid analgesics: summary of recommendations. *Med J Aust.* 2023 Jul 17;219(2):80–9.

O’Dowd A. Update on the use of platelet-rich plasma injections in the management of musculoskeletal injuries: a systematic review of studies from 2014 to 2021. *Orthop J Sports Med.* 2022 Dec 1;10(12).

Wang L, Hong PJ, May C, Rehman Y, Oparin Y, Hong CJ, et al. Medical cannabis or cannabinoids for chronic non-cancer and cancer related pain: a systematic review and meta-analysis of randomised clinical trials. *BMJ.* 2021 Sep 9;374:n1034.

**Quality Statement 7:
Patient review**

A patient with knee osteoarthritis receives planned clinical review at agreed intervals, and management is adjusted for any changing needs. A patient who has worsening symptoms and severe functional impairment that persists despite optimal non-surgical management is referred for assessment to a non-general practitioner (GP) specialist or multidisciplinary service.

EVIDENCE SOURCES

Australian guidelines and standards

Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018.

Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug].

International guidelines and standards

Geenen R, Overman CL, Christensen R, Asenlof P, Capela S, Huisinga KL, et al. EULAR recommendations for the health professional's approach to pain management in inflammatory arthritis and osteoarthritis. *Ann Rheum Dis* 2018 Jun;77(6):797–807.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management | Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226.

**Quality Statement 8:
Surgery**

A patient with knee osteoarthritis who has severe functional impairment despite optimal non-surgical management is considered for timely joint replacement surgery or joint-conserving surgery. The patient receives comprehensive information about the procedure and potential outcomes to inform their decision. Arthroscopic procedures are not offered to treat uncomplicated knee osteoarthritis.

EVIDENCE SOURCES**Australian guidelines and standards**

Royal Australian College of General Practitioners. Guideline for the management of knee and hip osteoarthritis. 2nd edition. East Melbourne: RACGP; 2018.

Therapeutic Guidelines. Osteoarthritis [Internet]. Melbourne: Therapeutic Guidelines Limited. 2017 March [accessed 2023 Aug].

International guidelines and standards

Brophy RH, Fillingham YA. AAOS Clinical Practice Guideline Summary: Management of osteoarthritis of the knee (nonarthroplasty), Third edition. J Am Acad Orthop Surg. 2022 May 1;30(9):e721–9.

National Institute for Health and Care Excellence. Osteoarthritis in over 16s: diagnosis and management | Guideline [NG226] [Internet]. NICE; 2022. Available from: www.nice.org.uk/guidance/ng226.

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Australian Knee Society and Australian Orthopaedic Association. Position Statement from the Australian Knee Society on Arthroscopic Surgery of the Knee, including reference to the presence of Osteoarthritis or Degenerative Joint Disease [Internet]; 2016. Available from <https://www.kneesociety.org.au/resources/AKS-AOA-Arthroscopy-Position-Statement-Final-Oct-2016.pdf>.

O'Connor D, Johnston RV, Brignardello-Petersen R, Poolman RW, Cyril S, Vandvik PO, et al. Arthroscopic surgery for degenerative knee disease (osteoarthritis including degenerative meniscal tears). Cochrane Database Syst Rev [Internet]. 2022 Mar 3;2022(3). Available from: doi.org/10.1002/14651858.CD014328.

Villadsen A, Overgaard S, Holsgaard-Larsen A, Christensen R, Roos EM. Postoperative effects of neuromuscular exercise prior to hip or knee arthroplasty: a randomised controlled trial. Ann Rheum Dis. 2014 Jun 1;73(6):1130–7.