

CLINICAL POLICY ADVISORY GROUP (CPAG)

Knee MRI when symptoms are suggestive of osteoarthritis

Statement

NHS Derby and Derbyshire ICB, in line with its principles for evidence-based interventions has deemed the use of Knee MRI when symptoms are suggestive of osteoarthritis in adults aged 19 years and over should not routinely be commissioned unless the criteria in the policy is met.

These commissioning intentions will be reviewed periodically. This is to ensure affordability against other services commissioned by the ICB.

1. Background

Osteoarthritis (OA), the most common form of arthritis, is characterised by joint pain accompanied by a varying degree of functional limitation and reduced quality of life. The most commonly affected joints are the knees, hips and small hand joints with a poor link between changes visible on a radiograph and symptoms of osteoarthritis.

An initial diagnosis of OA can be made when clinical assessment is suggestive of this pathology. If imaging is required to confirm the diagnosis, then weight bearing radiographs are the first-line of investigation. Magnetic resonance imaging (MRI) for knees is not usually needed.

2. Recommendation

This guidance applies to adults aged 19 years and over

An MRI scan can be a useful investigation in the contemporary surgical management of osteoarthritis, giving critical information on the pattern of disease and state of the soft tissues. However, requesting an MRI scan when it is not indicated potentially prolongs further waiting times for patients, can cause unnecessary anxiety while waiting for specialist consultation and can delay MRI scans for appropriate patients.

In primary care, where clinical assessment is suggestive of knee OA, imaging is not usually necessary. If imaging is required then weight bearing radiographs are the first-line of investigation. Patients with persistent symptoms should, after three to four months, be referred to secondary care and should have imaging of the knee to investigate for OA and/or other pathology.

Where imaging is necessary, in secondary care the first-line investigation of potential knee OA is weight bearing plain radiography. If the patient has a pattern of disease that allows surgical treatment to be adequately planned with plain radiographs, then MRI is not required.

However, there are a number of situations where MRI of the osteoarthritic knee can be useful:

- Patients who have severe symptoms but relatively mild OA on standard X-rays. In this situation the MRI offers more detail and can show much more advanced OA or Osteonecrosis within the knee
- In working up a patient for possible HTO or partial knee replacement an MRI can be a very useful investigation focusing on the state of the anterior cruciate ligament and state of the retained compartments.

3. Rationale for Recommendation

The diagnosis of knee OA can be effectively made in primary care based upon the patient's history and physical examination. In particular, NICE recommends diagnosing osteoarthritis clinically, and without investigations, in patients who:

- Are 45 or over AND

- Have activity-related joint pain AND
- Has either no morning joint-related stiffness or morning stiffness that lasts no longer than 30 minutes.

It is important to exclude other diagnoses in some cases where there may be atypical features which may indicate alternative or additional diagnoses such as:

- A history of trauma
- History of cancer or corresponding risk factors
- Prolonged morning joint-related stiffness
- Rapid worsening of symptoms
- The presence of a hot swollen joint.

Important differential diagnoses include gout, other inflammatory arthritides (for example, rheumatoid arthritis), septic arthritis and malignancy (bone pain).

In secondary care when surgical intervention for OA is being considered an MRI scan can offer valuable information about the pattern of disease within the knee. This includes planning for osteotomy around the knee for OA and for partial knee replacement, where in both cases information about the state of the preserved compartments and the anterior cruciate ligament are critical to the surgical plan.

A meta-analysis published in 2017 assessing the role of MRI in OA assessed 16 studies, which included 1220 patients. It found that MRI can detect OA with an overall high specificity and moderate sensitivity so better used to exclude OA than to confirm it. The study recommended that standard clinical algorithm for OA diagnosis, aided by radiographs is the most effective method for diagnosing OA.

The European League Against Rheumatism (EULAR) conducted a systematic review including 390 studies leading to seven recommendations concerning the use of imaging in peripheral joint OA as below:

- Imaging is not required to make the diagnosis in patients with typical presentation of OA. Level of evidence: III–IV. LOA (95% CI) 8.7 (7.9 to 9.4)
- In atypical presentations, imaging is recommended to help confirm the diagnosis of OA and/or make alternative or additional diagnoses. Level of evidence: IV. LOA (95% CI) 9.6 (9.1 to 10)
- Routine imaging in OA follow-up is not recommended. However, imaging is recommended if there is unexpected rapid progression of symptoms or change in clinical characteristics to determine if this relates to OA severity or an additional diagnosis. Level of evidence: III–IV. LOA (mean, 95% CI) 8.8 (7.9 to 9.7)

If imaging is needed, conventional (plain) radiography should be used before other modalities. To make additional diagnoses, soft tissues are best imaged by US or MRI and bone by CT or MRI. Level of evidence: III–IV. LOA (95% CI) 8.7 (7.9 to 9.6).

- Consideration of radiographic views is important for optimising detection of OA features; in particular for the knee, weightbearing and patellofemoral views are recommended. Level of evidence: III. LOA (95% CI) 9.4 (8.7 to 9.9)
- According to current evidence, imaging features do not predict nonsurgical treatment response and imaging cannot be recommended for this purpose. Level of evidence: II–III. LOA (95% CI) 8.7 (7.5 to 9.7)
- The accuracy of intra-articular injection depends on the joint and on the skills of the practitioner and imaging may improve accuracy. Imaging is particularly

recommended for joints that are difficult to access due to factors including site (e.g., hip), degree of deformity and obesity. Level of evidence: III–IV. LOA (95% CI) 9.4 (8.9 to 9.9).

4. Personalised Care

Personalised care simply means that people have more control and choice when it comes to the way their care is planned and delivered, considering their individual needs, preferences and circumstances. It includes supporting shared decision making and self-management.

Shared decision-making means people are supported to:

- understand the care, treatment and support options available and the risks, benefits and consequences of those options
- decide on a preferred course of action, based on evidence based, good quality information and their personal preferences.

Supported self-management means increasing the knowledge, skills and confidence a person has in managing their own health and care. This involves using self-management education, peer support, and health coaching.

Decision support tools, also called patient decision aids support shared decision making by making treatment, care and support options explicit. They provide evidence-based information about the associated benefits/harms and help patients to consider what matters most to them in relation to the possible outcomes, including doing nothing.

5. Useful Resources

- [BRAN leaflet](#) – Shared decision making supports individuals to make the right decision for them. This easy-to-use leaflet supports this people to consider their treatment options.

6. References

1. [NICE clinical guideline \(2014\) Osteoarthritis: care and management \[CG177\]](#)
2. [Menashe L, et al. The diagnostic performance of MRI in osteoarthritis: a systematic review and meta-analysis. Osteoarthritis Cartilage. 2012 Jan;20\(1\):13-21. PMID: 22044841.](#)
3. [Sakellariou G, et al. EULAR recommendations for the use of imaging in the clinical management of peripheral joint osteoarthritis. Ann Rheum Dis. 2017 Sep;76\(9\):1484-1494. PMID: 28389554.](#)
4. Academy of Medical Royal Colleges: [EBI for Knee MRI when symptoms are suggestive of osteoarthritis](#) (accessed 06/02/25)

7. Appendices

Appendix 1 - Consultation

All relevant providers/stakeholders will be consulted via a named link consultant/specialist. Views expressed should be representative of the provider/stakeholder organisation. CPAG will consider all views to inform a consensus decision, noting that sometimes individual views and opinions will differ.

Consultee	Date
Clinical Policies Advisory Group (CPAG)	August 2021
Academy of Medical Royal Colleges	August 2021
Clinical Director, Integrated Surgery, Surgery Division, CRHFT	August 2021
Consultant Orthopedic Surgeon, CRHFT	August 2021
Consultant Orthopedic Surgeon, UHDBFT	August 2021
Clinical Director for Trauma and Orthopedics, UHDBFT	August 2021
Consultant Trauma, Orthopedic and Spinal Surgeon, Asst Clinical Director, UHDBFT	August 2021
Clinical Lay Commissioning Committee	August 2021
Academy of Medical Royal Colleges	September 2024
Clinical Policies Advisory Group (CPAG)	March 2025

Appendix 2 - Document Update

Document Update	Date
Version 1 – new policy for Knee MRI when symptoms are suggestive of osteoarthritis – aligned to Academy of Medical Royal Colleges EBI Guidance	March 2025