NICE National Institute for Health and Care Excellence

NICE guidance

Magnetic resonance therapy for knee osteoarthritis

HealthTech guidance
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www.nice.org.uk/guidance/htg588

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG702.

1 Recommendations

1.1 Evidence on the safety of magnetic resonance therapy for knee osteoarthritis shows no major safety concerns. Evidence on efficacy is inadequate in quality and quantity and shows no benefit over placebo. Therefore, this procedure should not be used unless it is part of a research study. Find out what only in research means on the NICE guidance page.

1.2 Further research should be in the form of appropriately powered randomised controlled trials comparing the procedure with placebo. It should report patient selection and treatment protocols, including the number of sessions and magnetic field strength.

2 The condition, current treatments and procedure

The condition

2.1 Osteoarthritis of the knee is the result of progressive deterioration of the articular cartilage and menisci of the joint, usually because of trauma and wear and tear. This leads to exposure of the bone surface. Symptoms include pain, stiffness, swelling and difficulty walking. Acute exacerbations of pain are common and usually self-limiting after 14 days. Only a small number of patients develop progressive symptoms needing treatment.

Current treatments

2.2 Treatment depends on the severity of the symptoms. Conservative treatments include analgesics and corticosteroid injections to relieve pain and inflammation, and physiotherapy and prescribed exercise to improve function and mobility. When symptoms are severe, surgery may be indicated: options include upper tibial osteotomy and unicompartmental or total knee replacement.

The procedure

2.3 Magnetic resonance therapy (MRT) for osteoarthritis is a non-invasive procedure that uses a special device to administer electromagnetic energy to an osteoarthritic joint. A range of devices with different physical designs are available. The aim is to relieve the symptoms and to improve the osteoarthritis by stimulating the cartilage cells.

2.4 MRT is done in an outpatient setting. During the procedure, the patient lies on the couch and a section of the MRT device slides over the knee. The device generates electromagnetic fields which are targeted to the cartilaginous tissue in

the affected joint. The aim is to promote joint repair and relieve the symptoms of osteoarthritis. Each treatment lasts 60 minutes. Depending on the severity of the disease and MRT therapy device, a course of treatment typically consists of 5 to 10 treatment sessions on consecutive days.

3 Committee considerations

The evidence

3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 5 sources, which was discussed by the committee. The evidence included 1 randomised controlled trial, 1 review, 1 survey, 1 cohort study and 1 case series. It is presented in the summary of key evidence section in the overview.

3.2 The committee considered the key efficacy outcomes to be: improvement in pain and function over that of the natural history of the disease measured on well-recognised validated scales, and improvement in quality of life.

3.3 The committee considered the key safety outcome to be: potential effect of magnetic fields.

3.4 Patient commentary was sought but none was received.

Committee comments

3.5 The committee noted that the mechanism of action is unclear.

3.6 The committee noted that the strength of the magnetic field used in this procedure is very low, but if future research used increased field strengths, the safety of the procedure would need to be further assessed.

3.7 The committee noted that the symptoms of osteoarthritis relapse and remit.

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 702 has been migrated to HealthTech guidance 588. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.