

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Magnetic resonance therapy for knee osteoarthritis

Osteoarthritis can develop in the knee when cartilage covering the ends of the bone becomes worn. This can cause pain, stiffness, swelling and difficulty walking. In this procedure, a magnetic resonance device is put over the knee. The device produces electromagnetic energy, stimulating the cartilage to heal. Treatments last about an hour and are given for 5 to 10 days in a row. The aim is relieve the symptoms of osteoarthritis.

NICE is looking at magnetic resonance therapy for knee osteoarthritis.

NICE's interventional procedures advisory committee met to consider the evidence and the opinions of professional experts, who are consultants with knowledge of the procedure.

This document contains the [draft guidance for consultation](#). Your views are welcome, particularly:

- comments on the draft recommendations
- information about factual inaccuracies
- additional relevant evidence, with references if possible.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others.

This is not NICE's final guidance on this procedure. The draft guidance may change after this consultation.

After consultation ends, the committee will:

- meet again to consider the consultation comments, review the evidence and make appropriate changes to the draft guidance
- prepare a second draft, which will go through a [resolution process](#) before the final guidance is agreed.

Please note that we reserve the right to summarise and edit comments received during consultation or not to publish them at all if, in the reasonable opinion of NICE, there are a lot of comments or if publishing the comments would be unlawful or otherwise inappropriate.

Closing date for comments: 26 April 2021

Target date for publication of guidance: August 2021

1 Draft 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 interventional procedures guidance page](#).
- 1.1 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 3 sources, which was discussed by the committee. The evidence included 1 randomised controlled trial, 1 survey and 1 case series. It is presented in [the summary of key evidence section in the interventional procedures 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.

Tom Clutton-Brock

Chair, interventional procedures advisory committee

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