NICE National Institute for Health and Care Excellence

NICE guidance

Radiofrequency denervation for osteoarthritic knee pain

HealthTech guidance
Published: 28 June 2023

www.nice.org.uk/guidance/htg686

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 IPG767.

1 Recommendations

1.1 Radiofrequency denervation for osteoarthritic knee pain may be used if standard arrangements are in place for clinical governance, consent and audit. Find out what standard arrangements mean on the NICE guidance page.

1.2 The procedure should only be done by clinicians with specific training and experience in this procedure.

1.3 For auditing the outcomes of this procedure, the main efficacy and safety outcomes identified in this guidance can be entered into NICE's audit tool (for use at local discretion).

Why the committee made these recommendations

There is good evidence to show that this procedure relieves pain in the short term. There are no major safety concerns, and the complications, including numbness, are well recognised.

2 The condition, current treatments and procedure

The condition

2.1 Osteoarthritis is characterised by localised loss of cartilage, remodelling of adjacent bone and associated inflammation. Knees are one of the most affected joints, with pain being a significant symptom.

Current treatments

2.2 Various treatments are available for pain caused by knee osteoarthritis, including non-pharmacological (such as physiotherapy), pharmacological (such as analgesics and intra-articular corticosteroids) and surgical approaches (such as knee arthroplasty). When non-pharmacological and pharmacological interventions do not work or symptoms are severe, surgery may be needed.

The procedure

2.3 This procedure is often done in 2 stages. Both are done under fluoroscopic or ultrasound guidance. First, to assess suitability for radiofrequency denervation, people are given a diagnostic nerve block by injecting a local anaesthetic to the target nerves. If the diagnostic nerve block relieves the pain, the person is a candidate for radiofrequency denervation.

2.4 A probe is introduced to the treatment site. Several targets have been described, including the genicular nerves, the saphenous nerve, and the articular cavity. Radiofrequency energy is used to denervate the target nerves. The radiofrequency energy can be delivered as conventional radiofrequency, cooled radiofrequency or pulsed radiofrequency. The aim is to reduce pain and delay the need for knee arthroplasty.

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 9 sources, which was discussed by the committee. The evidence included 1 systematic review and network meta-analysis, 2 systematic reviews and meta-analyses, 1 randomised controlled trial, 1 long-term cohort study that was a single-arm extension of a randomised controlled trial, 1 cohort study, 1 narrative review and 2 case reports. The evidence is presented in the summary of key evidence section in the overview. Other relevant literature is in the appendix of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: pain relief and improvements in quality of life, mobility and ability to exercise.

3.3 The professional experts and the committee considered the key safety outcomes to be: pain, infection, numbness and damage to adjacent structures.

3.4 Patient commentary was sought but none was received.

Committee comments

3.5 The committee was informed that the typical duration of pain relief is less than 2 years and there is no long-term effect because of nerve regrowth.

3.6 There are several modalities of radiofrequency denervation and different modalities might have different efficacy and safety profiles.

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 767 has been migrated to HealthTech guidance 686. The recommendations and accompanying content remain unchanged.

ISBN: 978-1-4731-8929-4

Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.