

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Percutaneous image-guided cryoablation of peripheral neuroma for chronic pain

Neuromas are thickenings of tissue around a nerve. Peripheral neuromas affect nerves outside the brain and spinal cord that can carry pain signals between the brain and the rest of the body. Neuromas can cause chronic pain. In this procedure, a needle-like probe is inserted through the skin (percutaneous). Ultrasound, CT or MRI imaging is used to guide the probe near to the neuroma. The probe freezes the nerve to destroy a small part of it (cryoablation) and stop the pain signals. The nerve will slowly recover and the pain can come back, so the procedure may need to be repeated.

NICE is looking at percutaneous image-guided cryoablation of peripheral neuroma for chronic pain.

NICE's interventional procedures advisory committee met to consider the evidence and the opinions of professional experts 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This document contains the [draft guidance for consultation](#).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 The draft guidance may change after this consultation.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- meet again to consider the consultation comments, review the evidence and make appropriate changes to the draft guidance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: 18 August 2022

Target date for publication of guidance: December 2022

1 Draft recommendations

- 1.1 Evidence on the safety and efficacy of percutaneous image-guided cryoablation of peripheral neuroma for chronic pain is inadequate in quality and quantity. Therefore, this procedure should only be used in the context of research. Find out [what only in research means on the NICE interventional procedures guidance page](#).
- 1.2 For Morton's neuroma, further research should preferably be in the form of randomised controlled trials and should report details of patient selection and the procedure, quality of life, and pain reduction in the short and long term. For stump and other traumatic neuromas, further research could be in the form of case series.

2 The condition, current treatments and procedure

The condition

- 2.1 Neuromas are thickenings of tissue around a nerve, which can occur after injuries to the nerve, such as a cut, a crushing injury, nerve compression, or an excessive stretch. They are often associated with amputations. Peripheral neuromas affect nerves outside the brain and spinal cord that can carry pain signals between the brain and the rest of the body. This can cause chronic pain.
- 2.2 A common type of neuroma is Morton's neuroma, which affects a nerve that lies between 2 metatarsal bones of the foot. It causes pain in the ball of the foot and sometimes the toes.

Current treatments

- 2.3 Initial treatment for chronic pain caused by a peripheral neuroma may involve physical therapy, medication, or local anaesthetic and corticosteroid injections. [NICE's clinical guideline on neuropathic](#)

[pain in adults](#) describes pharmacological management in non-specialist settings. Surgical options include decompression and nerve removal.

- 2.4 For Morton's neuroma, conservative management includes measures such as soft pads or insoles to take pressure off the painful area of the foot, wearing shoes with plenty of room in the toes, weight loss, and pain medication. If these measures do not work, non-surgical treatments include radiofrequency ablation and injection of corticosteroid or alcohol. If symptoms persist, the affected nerve can be surgically removed.

The procedure

- 2.5 Image-guided cryoablation of a peripheral neuroma for chronic pain is a percutaneous treatment, which is usually done as an outpatient or day case procedure under local anaesthesia. Using image guidance (MRI, CT or ultrasound), a needle-like probe is inserted through the skin and near to the neuroma. Inside the probe, gas flows from a high- to low-pressure chamber, creating an extremely cold temperature at the tip. The extreme cold causes reversible destruction of the nerve axon, which disrupts the pain signals. Unlike surgical or heat-mediated ablation, cryoablation does not disrupt the acellular epineurium or perineurium, which may allow eventual nerve regeneration. The time to total regeneration is related to the rate of axonal regrowth and the distance of the lesion from the end organ, so duration of symptomatic relief varies. The procedure can be repeated if necessary.
- 2.6 The main aim of the procedure is to relieve pain but it can also reduce swelling associated with the neuroma.

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 5 case series. It is presented in the [summary of key evidence section in the interventional procedures 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: improved quality of life, improved mobility, and reduction in pain.
- 3.3 The professional experts and the committee considered the key safety outcomes to be: pain, worsening of symptoms, infection, damage to adjacent structures and need for further interventions.
- 3.4 Patient commentary was sought but none was received.

Committee comments

- 3.5 Most procedures are done under local or regional anaesthesia as day cases.

Tom Clutton-Brock

Chair, interventional procedures advisory committee

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