

# Keele Critically Appraised Topic (CAT Form)

## Accessible format August 2023



## Clinical Question

In adults with osteoarthritis of the knee, is ultrasound guided cooled radiofrequency denervation, as effective as x-ray guided radiofrequency denervation in reducing pain, improving patient experience and is it as cost effective?

## Clinical bottom line

There is no evidence to answer this CAT question.

Plain language summary

There has not been any research undertaken in the UK or internationally to answer the question

## Why is this important?

Patients referred to a local community musculoskeletal pain service for knee osteoarthritis have two options for genicular nerve denervation: x-ray guidance or ultrasound guidance. X-ray guidance requires significant staffing, making it an expensive procedure. It is conducted as a day case, which increases costs for the NHS and causes delays for patients. Evidence suggests it does not offer increased accuracy to ultrasound guidance and exposes patients to unnecessary radiation.

On the other hand, ultrasound guided cooled radiofrequency can be performed in an outpatient setting, reducing staffing demands and cost for the NHS. This method lowers the risk to patients by avoiding radiation exposure. Although identifying the nerve via ultrasound can be challenging, clinical experience ensures accurate placement. Anecdotally ultrasound guidance provided greater accuracy then X-ray guidance.

This approach highlights the benefit of ultrasound over x-ray for both patients and the NHS.

## Search timeframe

## 2014-2024

## Search criteria

|  |  |  |
| --- | --- | --- |
| **Population Intervention Comparison Outcomes (PICO) themes** | **Description** | **Search terms** |
| Population and Setting | Adults with OA knee | OA, Osteoarthritis, osteoarthritic, knee joint, tibia-femoral, patellofemoral, degenerative knee |
| Intervention or Exposure | Ultrasound guided cooled radiofrequency denervation | Nerve block  Denervation  Ultrasound guided |
| Comparison | X-ray guided denervation | Nerve block  Denervation  X-ray controlled |
| Outcomes of interest | Pain  Cost  Patient experience | VAS, NRS  Patient experience measures, patient satisfaction |
| Types of studies |  | SR, RCTs |

## Databases searched

Include the databases searched, below are examples of databases you may use:

Clinical Knowledge Summaries (CKS), Physiotherapy Evidence Database (PEDro), British Medical Journal (BMJ) Updates, Clinical Evidence, Translation of Research into Practice (TRIP) Database, National Institute for Clinical Excellence (NICE), Health Technology Assessment (HTA), Bandolier, The Cochrane Library, Medline, Cinahl, Embase, PsycInfo, Professional websites, Joanna Briggs Institute, Web of Science, Sports discus and Pub Med

## Date of search

August 2024

# Summary

Currently, there is no research available which directly answer this Critically Appraised Topic (CAT) question. However, the literature search has uncovered some evidence suggesting that cooled radiofrequency denervation may offer better short and long term outcomes for patients with knee osteoarthritis compared to intra-articular steroid injections. This question will be addressed in a subsequent CAT.

# Implications for practice

There is no evidence to warrant a change in our current practice for delivering this procedure. Ultrasound guidance seems to be more advantageous for patients, clinicians and the NHS in terms of cost and reduced radiation risk. In our local services, we will continue to offer this procedure under ultrasound guidance

# What would you post on X (previously Twitter)?

There is no research evidence to suggest any difference between ultrasound guided and x-ray guided radiofrequency denervation for pain relief in osteoarthritis of the knee

# References

| **CAT image** | **Evidence quality** | **Checkbox** |
| --- | --- | --- |
| This is a green cat with a happy face | Good quality evidence to support use…. |  |
| This is an orange cat with an indifferent face | Insufficient or poor quality evidence OR substantial harms suggest intervention used with caution after discussion with patient… |  |
| This is a red cat with an unhappy face | No good quality evidence, do not use until further research is conducted OR  Good quality evidence to indicate that harms outweigh the benefits…. |  |

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