

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Thermal Radiofrequency Neurotomy for the Treatment of Back Pain: Clinical Effectiveness and Safety – a 2020 Update

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Research Questions

1. What is the clinical effectiveness of thermal radiofrequency neurotomy for the treatment of back pain?
2. What is the clinical evidence regarding the safety of thermal radiofrequency neurotomy for the treatment of back pain?

Key Findings

Seventeen systematic reviews (three with meta-analysis) and eight randomized controlled trials were identified regarding the clinical effectiveness and safety of thermal radiofrequency neurotomy for the treatment of back pain.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were radiofrequency therapy and back pain. No search filters were applied to limit retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 and June 3, 2020. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Patients with back pain
Intervention	Thermal radiofrequency neurotomy also known as radiofrequency neurotomy, or continuous radiofrequency ablation
Comparator	Q1: Pharmaceutical intervention (e.g., steroid injection); Nerve block; Surgery; No treatment Q2: No comparator
Outcomes	Q1: Clinical effectiveness: relief of back pain (e.g., pain score), better management of back pain Q2: Safety
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials

Results

Seventeen systematic reviews¹⁻¹⁷ (three with meta-analysis) and eight randomized controlled trials¹⁸⁻²⁵ were identified regarding the clinical effectiveness and safety of thermal radiofrequency neurotomy for the treatment of back pain. No relevant health technology assessments were identified.

References of potential interest that did not meet the inclusion criteria are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-Analyses

1. Shih CL, Shen PC, Lu CC, et al. A comparison of efficacy among different radiofrequency ablation techniques for the treatment of lumbar facet joint and sacroiliac joint pain: A systematic review and meta-analysis. *Clin Neurol Neurosurg*. 2020 Apr 19;195:105854.
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3. Fuchs E. and Geiger-Gritsch S. (2019): Radiofrequency denervation for lumbar and cervical facet joint pain – a systematic review. Vienna: Ludwig Boltzmann Institut fuer Health Technology Assessment (LBIHTA). Decision Support Document 99. Updated, 2019. <http://eprints.aihta.at/1202/>
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Review of Systematic Reviews

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Randomized Controlled Trials

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Appendix — Further Information

Previous CADTH Reports

26. Pulsed Radiofrequency Ablation for Chronic Pain: Clinical Effectiveness, Safety, and Guidelines. (*CADTH Rapid response report: reference list*). Ottawa (ON): CADTH; 2015. <https://cadth.ca/pulsed-radiofrequency-ablation-chronic-pain-clinical-effectiveness-safety-and-guidelines>
27. Thermal Radiofrequency Neurotomy for the Treatment of Back Pain: Clinical Effectiveness and Safety. (*CADTH Rapid response report*). Ottawa (ON): CADTH; 2012. <https://www.cadth.ca/thermal-radiofrequency-neurotomy-treatment-back-pain-clinical-effectiveness-and-safety>

Systematic Reviews and Meta-Analyses – Alternative Population

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Randomized Controlled Trials

Pulsed Radiofrequency Ablation

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Cooled Radiofrequency Ablation

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Alternative Comparator

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Unclear Comparator

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Mixed Intervention

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Non-Randomized Studies

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Cooled Radiofrequency Ablation

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