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CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Manual Therapy for Persistent or Chronic Non-Specific Back Pain: Clinical Effectiveness, Cost-Effectiveness and Guidelines

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Authors: Shannon Hill, Suzanne McCormack

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

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Questions or requests for information about this report can be directed to **requests@cadth.ca**

Research Questions

1. What is the clinical effectiveness of manual therapies for non-cancer, non-specific back pain?
2. What is the cost-effectiveness of manual therapies for non-cancer, non-specific back pain?
3. What are the evidence-based guidelines regarding manual therapies for non-cancer, non-specific back pain?

Key Findings

Six systematic reviews (four with meta-analyses) were identified regarding the clinical effectiveness of manual therapies for non-cancer, non-specific back pain. In addition, three evidence-based guidelines were identified regarding manual therapies for non-cancer, non-specific 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 manual therapy methods and back pain. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses, economic studies and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and October 2, 2019. 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	Adults living with chronic non-cancer, non-specific back pain, excluding pregnant patients
Intervention	Manual therapy, including manipulation, mobilization, traction, and soft tissue therapy
Comparator	Q1-2: Pharmacological interventions No treatment (e.g., waitlist, sham interventions) Usual care (if usual care is pharmacological interventions only) Q3: Not applicable

Outcomes	Q1: Clinical effectiveness (e.g., pain reduction, functional performance, quality of life, disability level, safety, global impression of recovery, adverse events, skin reactions) Q2: Cost-effectiveness (e.g., incremental cost per quality adjusted life year gained, incremental cost-effectiveness ratio, quality adjusted life years) Q3: Guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized control trials, economic evaluations, evidence-based guidelines.

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, economic evaluations, and evidence-based guidelines.

Six systematic reviews[1-6] (four with meta-analyses[1,2,3,5]) were identified regarding the clinical effectiveness of manual therapies for non-cancer, non-specific back pain. In addition, three evidence-based guidelines[7-9] were identified regarding manual therapies for non-cancer, non-specific back pain. No relevant health technology assessments, randomized controlled trials, or economic evaluations were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Rubinstein SM, de Zoete A, van Middelkoop M, Assendelft WJJ, de Boer MR, van Tulder MW. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. *BMJ*. 2019 Mar 13;364:l689.
PubMed: PM30867144

2. Coulter ID, Crawford C, Hurwitz EL, et al. Manipulation and mobilization for treating chronic low back pain: a systematic review and meta-analysis. *Spine J*. 2018 May;18(5):866-879.
PubMed: PM29371112

3. Ruddock JK, Sallis H, Ness A, Perry RE. Spinal Manipulation Vs Sham Manipulation for Nonspecific Low Back Pain: A Systematic Review and Meta-analysis. J Chiropr Med. 2016 Sep;15(3):165-183.
PubMed: PM27660593

4. Furlan AD, Giraldo M, Baskwill A, Irvin E, Imamura M. Massage for low-back pain. *Cochrane Database Syst Rev*. 2015 Sep 1(9):Cd001929.
PubMed: PM26329399

5. Franke H, Franke JD, Fryer G. Osteopathic manipulative treatment for nonspecific low back pain: a systematic review and meta-analysis. *BMC Musculoskelet Disord*. 2014 Aug 30;15:286.
PubMed: PM25175885

Guidelines

6. Wong JJ, Cote P, Sutton DA, et al. Clinical practice guidelines for the noninvasive management of low back pain: A systematic review by the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration. *Eur J Pain*. 2017 Feb;21(2):201-216.
PubMed: PM27712027

Randomized Controlled Trials

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

7. Adult acute and subacute low back pain diagnosis algorithm. Bloomington (MN): Institute for Clinical Systems Improvement; 2018: https://www.icsi.org/wp-content/uploads/2019/08/March-2018-LBP-Interactive2.pdf
see: Treatment plan, p.15-22; "Spinal Manipulation" p.18, "Traction" p.18, "Massage" p.20

8. Bussieres AE, Stewart G, Al-Zoubi F, et al. Spinal Manipulative Therapy and Other Conservative Treatments for Low Back Pain: A Guideline From the Canadian Chiropractic Guideline Initiative. *J Manipulative Physiol Ther*. 2018 May;41(4):265-293.
PubMed: PM29606335

9. Qaseem A, Wilt TJ, McLean RM, Forciea MA. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med*. 2017 Apr 4;166(7):514-530.
PubMed: PM28192789

Appendix — Further Information

Previous CADTH Reports

10. Manual Therapy for Recent-Onset or Persistent Non-Specific Lower Back Pain: A Review of Clinical Effectiveness and Guidelines. (CADTH Rapid response report: summary with critical appraisal). Ottawa (ON): CADTH; 2017: https://www.cadth.ca/manual-therapy-recent-onset-or-persistent-non-specific-lower-back-pain-review-clinical-effectiveness

Systematic Reviews

Persistent or Chronic Non-Specific Low Back Pain Not Specified in Abstract

11. Bernet BA, Peskura ET, Meyer ST, Bauch PC, Donaldson MB. The effects of hip-targeted physical therapy interventions on low back pain: A systematic review and meta-analysis. *Musculoskelet Sci Pract*. 2019 Feb;39:91-100.
PubMed: PM30553988

12. Alrwaily M, Almutiri M, Schneider M. Assessment of variability in traction interventions for patients with low back pain: a systematic review. Chiropr Man Therap. 2018;26:35.
PubMed: PM30237870

13. Chou R, Deyo R, Friedly J, et al. AHRQ Comparative Effectiveness Reviews. *Noninvasive Treatments for Low Back Pain*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2016.
PubMed: PM26985522

Comparator Not Specified in Abstract

14. Nascimento P, Costa LOP, Araujo AC, Poitras S, Bilodeau M. Effectiveness of interventions for non-specific low back pain in older adults. A systematic review and meta-analysis. *Physiotherapy*. 2019 Jun;105(2):147-162.
PubMed: PM30563712

15. de Luca KE, Fang SH, Ong J, Shin KS, Woods S, Tuchin PJ. The Effectiveness and Safety of Manual Therapy on Pain and Disability in Older Persons With Chronic Low Back Pain: A Systematic Review. *J Manipulative Physiol Ther*. 2017 Sep;40(7):527-534.
PubMed: PM29079255

Randomized Controlled Trials

Persistent or Chronic Non-Specific Low Back Pain Not Specified in Abstract

16. Aspinall SL, Jacques A, Leboeuf-Yde C, Etherington SJ, Walker BF. No difference in pressure pain threshold and temporal summation after lumbar spinal manipulation compared to sham: A randomised controlled trial in adults with low back pain. *Musculoskelet Sci Pract*. 2019 Oct;43:18-25.
PubMed: PM31176287

17. Lim KT, Hwang EH, Cho JH, et al. Comparative effectiveness of Chuna manual therapy versus conventional usual care for non-acute low back pain: a pilot randomized controlled trial. *Trials*. 2019 Apr 15;20(1):216.
PubMed: PM30987662

Economic Evaluations

Persistent or Chronic Non-Specific Low Back Pain Not Specified in Abstract

18. Andronis L, Kinghorn P, Qiao S, Whitehurst DG, Durrell S, McLeod H. Cost-Effectiveness of Non-Invasive and Non-Pharmacological Interventions for Low Back Pain: a Systematic Literature Review. *Appl Health Econ Health Policy*. 2017 Apr;15(2):173-201.
PubMed: PM27550240

Guidelines and Recommendations

Persistent or Chronic Non-Specific Low Back Pain Not Specified in Abstract

19. Stochkendahl MJ, Kjaer P, Hartvigsen J, et al. National Clinical Guidelines for non-surgical treatment of patients with recent onset low back pain or lumbar radiculopathy. *Eur Spine J*. 2018 Jan;27(1):60-75.
PubMed: PM28429142

20. Van Wambeke P, Desomer A, Ailliet L, et al. Low back pain and radicular pain: assessment and management. *(KCE Reports 287).* Brussels: Belgian Health Care Knowledge Centre (KCE); 2017.
https://kce.fgov.be/sites/default/files/atoms/files/KCE_287_Low_back_pain_Report_0.pdf
See: 3.2.5 Manual Therapies

21. National Institute for Health and Care Excellence. Low back pain and sciatica in over 16s: assessment and management*. (NICE guideline NG59*); 2016:
https://www.nice.org.uk/guidance/NG59/chapter/Recommendations#non-invasive-treatments-for-low-back-pain-and-sciatica
See: 1.2 Non-invasive treatments for low back pain and sciatica; Manual therapies (1.2.7)

Review Articles

22. Cuenca-Martinez F, Cortes-Amador S, Espi-Lopez GV. Effectiveness of classic physical therapy proposals for chronic non-specific low back pain: a literature review. *Phys Ther Res*. 2018;21(1):16-22.
PubMed: PM30050749