Project summary

Effectiveness and safety of osteopathy for the management of musculoskeletal conditions: an evidence-based review

July 2023

Contents

Acknowledgements

ACC would like to acknowledge the contributions of the external members of the Expert Reference Group for Osteopathy (the ERG), who supported the development of this work.

External and internal members of the ERG are listed in the Appendix.

Treatment timeframes

The treatment timeframes used in the evidence-based review[1] and referred to in this summary are defined as follows:

Timeframe	Duration from **c**ommencement of **t**reatment
Short term	< 6 weeks
Medium term	6 to 12 weeks
Long term	>12 weeks

Strength of evidence descriptors

The evidence-based review used standardised terms to describe the strength of the evidence on which its findings were based. The terms are defined as follows:

Descriptor term	Strength of the evidence
Very strong	≥ 2 high quality systematic reviews ***or*** ≥ 3 high quality controlled trials
Strong	1 high quality systematic review ***or*** ≥ 2 acceptable quality systematic reviews ***or*** ≥ 1 high quality controlled trials plus > 3 acceptable quality controlled trials/cohort studies
Moderate	1 acceptable quality systematic review ***or*** ≥ 1 low quality systematic reviews plus ≥ 1 high quality controlled trials ***or*** ≥ 5 acceptable quality controlled trials/cohort studies
Weak	1 low quality systematic review ***or*** < 5 acceptable or low quality controlled trials/cohort studies
Very weak	1 low quality cohort study ***or*** ≥ 1 acceptable quality case control studies
Limited	Indicates that fewer than 3 relevant studies were identified

[1] International Centre for Allied Health Evidence (2022). *Effectiveness and safety of osteopathy for the management of musculoskeletal conditions.* Adelaide, University of South Australia.

1. Introduction

Background

To better understand the role of osteopathy in the management of musculoskeletal conditions, ACC has commissioned an evidence-based review of the published research on effectiveness and safety. The review has been carried out by the International Centre for Allied Health Evidence (iCAHE) based at the University of South Australia[2].

To support the development of the review, ACC set up an Expert Reference Group for Osteopathy (the ERG) which included representatives from the osteopathy sector. The ERG provided advice and subject matter expertise to guide both the review process and the interpretation of the evidence.

Purpose of this project summary

This project summary provides context on the work and describes how it was done. It also presents the main findings.

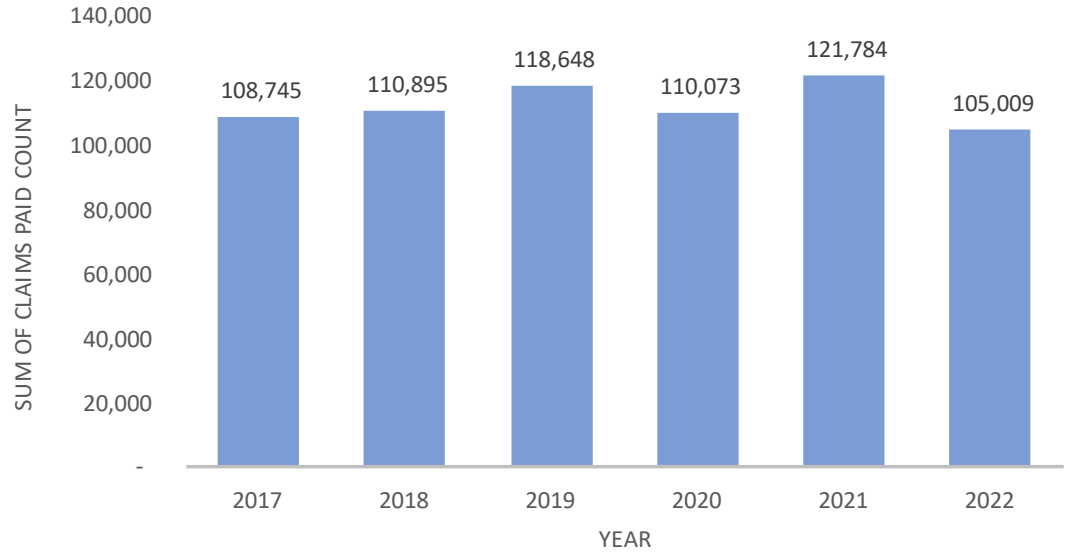
2. ACC data: claim numbers and conditions treated

This section provides context on the amount of osteopathy treatment that ACC funds for its clients, and on the most frequently treated conditions and body sites.

Claim volumes

Figure 1 shows annual ACC claim volumes for the calendar years 2017 to 2022 (based on data available in February 2023):

Figure 1: Osteopathy claim volumes

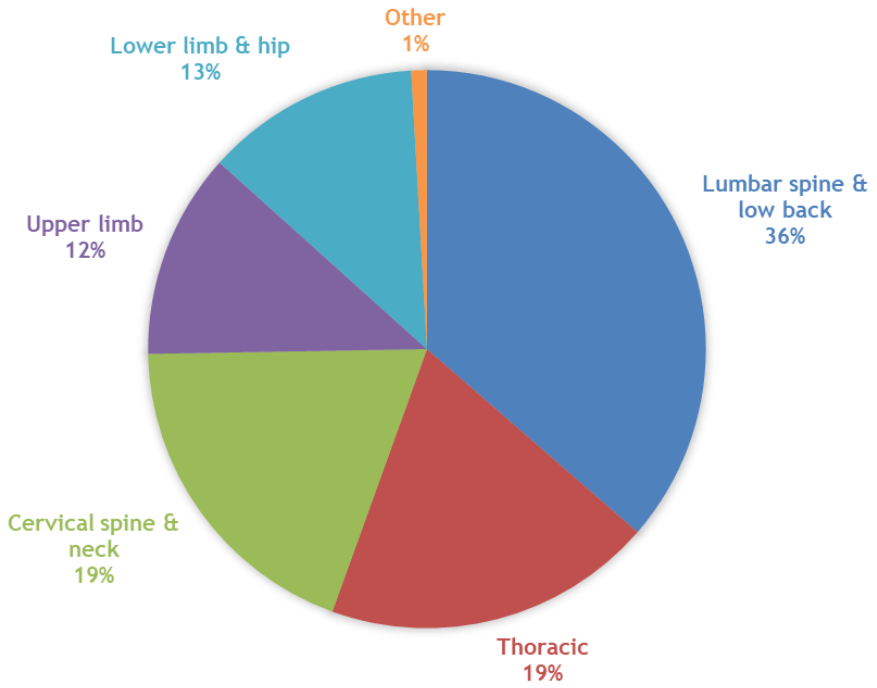


[2] International Centre for Allied Health Evidence (2022). *Effectiveness and safety of osteopathy for the management of musculoskeletal conditions.* Adelaide, University of South Australia.

Conditions treated

Figure 2 presents a snapshot of the types of injuries for which ACC purchases osteopathy. The top 50 injury descriptions for claims with an osteopathy service for the financial years 2014-15 to 2020-21 were categorised according to site of injury (based on data available in November 2021):

FIGURE 2



3. The evidence-based review of osteopathy

The evidence-based review was carried out to systematically identify, critically appraise and synthesise the published clinical research on the effectiveness and safety of osteopathy for the management of musculoskeletal conditions and injuries.

Research questions

The key objective was to answer these primary research questions:

1. How ***effective*** is osteopathy in the management of musculoskeletal conditions?
2. How ***safe*** is osteopathy in the management of musculoskeletal conditions?

The review also sought evidence-informed answers to the following secondary research questions:

1. How does the evidence on effectiveness and safety stack up for different musculoskeletal conditions and injuries?
2. Does effectiveness vary between different patient subgroups or injury subtypes?
3. Does effectiveness vary according to recovery stage or time post-injury, for instance, during the sub-acute versus the chronic stage?
4. What does the evidence tell us about factors such as recommended treatment duration, or optimum number of treatment sessions?

Methods

The evidence-based review was conducted using a robust systematic review methodology. The approach taken included the following steps:

- A systematic search of the clinical literature to identify relevant research studies
- Study selection using agreed inclusion and exclusion criteria
- Critical appraisal of the selected studies
- Evidence grading using internationally accepted tools and checklists[3]
- Synthesising the evidence in the form of a final report.

At each step, the ERG provided advice on the methods used and on how evidence from international research might be interpreted and applied in the New Zealand context.

The review was limited to studies published in the English language in peer-reviewed journals, in or after 2010. Studies were required to meet all the selection criteria.

The range of musculoskeletal conditions covered by the evidence-based review was not pre-determined, but instead reflected what was reported in the literature. However, as the review aimed to be generalisable to typical ACC clients, studies on conditions unlikely to be related to a covered injury (for example, systemic inflammatory disorders like rheumatoid arthritis) were excluded.

4. Key findings from the evidence

This section summarises the findings of the evidence-based review regarding the research questions, and the conditions/body sites and rehabilitation outcomes of greatest interest to ACC.

Overall volume and quality of the evidence

A total of 84 studies met the selection criteria for inclusion in the evidence-based review. The studies included 24 systematic reviews, 38 controlled trials and 19 observational studies.

The studies had many quality issues, the main ones being:

- Follow-up times were generally too short to allow evaluation of long-term effectiveness
- Comparison treatments and control groups varied widely and were not always well-reported
- Conclusions on some conditions couldn't be reached due to the limited quality or quantity of relevant studies
- Relationships between osteopaths' level of training or experience and treatment safety or risk were poorly reported.

[3] The SIGN checklists, available from Checklists (sign.ac.uk).

Findings on effectiveness and safety

Evidence for the use of osteopathy in the management of musculoskeletal conditions varies in terms of volume, quality and consistency. It covers a wide range of study designs and focuses on effects over the short to medium term. For several conditions, the only available evidence comes from lower-level studies, for example, observational studies with no comparison treatment.

For both effectiveness and safety, the strength and volume of the evidence varies significantly across different conditions, injury types and body sites. Studies have consistently reported associations between osteopathic interventions and minor, transient side effects, such as temporarily increased pain or tiredness, but serious adverse events appear to be rare. The findings are summarised below.

Cervical spine & neck

- For non-specific neck pain, there is strong to moderate evidence that osteopathy may significantly reduce pain, and to a lesser extent improve function, in the short to medium term. Osteopathy may be superior to other treatment options (e.g. physiotherapy, exercise) for reducing pain symptoms over the short to medium term.
- For cervicogenic headache, there is strong evidence that osteopathy may significantly reduce headache pain, intensity and frequency in the short to medium term compared to other treatment options (e.g. exercise, standard care).
- For whiplash, there is very weak evidence that osteopathy improves pain, disability or quality of life.

Thoracic spine & other thoracic conditions

- For slipping rib syndrome and thoracic outlet syndrome, evidence that osteopathy may reduce pain and disability is very weak and focuses on short-term management only.

Lumbar spine & low back

- For non-specific ***acute*** low back pain, there is very strong evidence that osteopathy is not significantly different to other treatment options (e.g. physiotherapy, exercise, standard care) for improving pain and function in the short, medium or long term.
- For non-specific ***chronic*** low back pain, the evidence is strong but inconsistent: osteopathy does not appear to be significantly different to other treatment options (e.g. physiotherapy, exercise) for improving pain and function in the long term; however, the evidence suggests that osteopathy may be superior in the short to medium term.
- For sciatica associated with lumbar disc herniation, there is moderate evidence that osteopathic manipulation is superior to chemonucleolysis for improving pain and disability in the short term, but not the long term.
- Other low back conditions (e.g. coccydynia, sacroiliac joint dysfunction): evidence for the effectiveness of osteopathic manipulation in reducing pain and disability is weak or very weak and focuses on short-term management only.

Lower limb including hip

- Knee osteoarthritis: the evidence for osteopathy is generally weak. It may improve function in the short to long term, but evidence on pain relief is inconsistent.

- Patellofemoral pain syndrome, chronic ankle instability & acute ankle sprain: there is moderate but limited evidence that osteopathy may improve some outcomes (e.g. pain, balance, range of motion) in the short term.

- Other lower limb conditions (e.g. hip labral tear, meniscal injury, Achilles tendinopathy, plantar fasciitis): evidence for the effectiveness of osteopathy in reducing pain and disability is weak or very weak and focuses on short- to medium-term management.

Upper limb

- Shoulder pain and dysfunction: there is strong to moderate evidence that osteopathy may reduce pain in the short term. There is moderate evidence that osteopathy may reduce disability in the medium to long term.

- Lateral epicondylitis: there is moderate evidence that osteopathic muscle energy technique may significantly improve pain in the medium and long term (but not in the short term) compared to corticosteroid injections. However, there appear to be no significant differences in terms of function.

- Other upper limb conditions (e.g. subacromial impingement, carpal tunnel syndrome): evidence for the effectiveness of osteopathy in reducing pain and disability is weak or very weak and focuses on short-term management only.

Other musculoskeletal conditions

- Complex regional pain syndrome: there is very weak evidence that osteopathic manipulation improves proprioception and temperature discrimination in the short term.

- Temporomandibular joint disorders: the evidence that osteopathy may improve pain and function in the short or long term is weak and/or conflicting.

Findings on the secondary research questions

Are there any specific patient subgroups for whom osteopathy is more, or less, effective?

- Overall, osteopathy appears most effective for patients with spinal musculoskeletal conditions (i.e. non-specific neck/low back pain or cervicogenic headache), and also for those with shoulder pain and dysfunction.

Does effectiveness vary according to post-injury or recovery stage?

- There is inconsistent weak evidence that the greatest improvement from osteopathy is seen in patients with acute presentations.

What evidence is there on recommended length of treatment & number of sessions?

- There is limited evidence on the optimal duration or frequency of treatment. In the studies identified for the evidence-based review, most treatments were delivered over a period of 4 to 8 weeks.

- Duration and frequency of treatment for conditions with the strongest evidence:

Condition	*Treatment duration & frequency*
Non-specific neck pain	4 to 6 sessions over 4 to 12 weeks
Cervicogenic headache	3 to 10 sessions over 3 to 12 weeks
Non-specific low back pain, acute	1 to 8 sessions over 2 to 12 weeks

Non-specific low back pain, chronic	4 to 10 sessions over 2 to 24 weeks
Shoulder pain and dysfunction	5 to 6 sessions over 5 to 26 weeks

5. Recommendations and next steps

For ACC

- The ERG recommended that, in addition to exploring the published research, ACC might better understand the value of osteopathy for its clients by developing outcome measures that capture patient experience (e.g. PREMs[4]) and a broader spectrum of rehabilitation outcomes, such as improved coping skills and participation levels.
- ACC is currently assessing the options for utilising the findings of the evidence-based review to improve clients' rehabilitation outcomes.

For the osteopathy sector

- There is clearly a need for better quality (and more rigorously reported) osteopathy research, and for more research on longer term outcomes.
- The iCAHE team recommended use of the Template for Intervention Description and Replication (TIDieR) framework to improve the completeness of reporting in osteopathy trials[5].

[4] PREMs (Patient-Reported Experience Measures) are tools that capture the patient's overall experience of the healthcare they receive.

[5] The TIDieR framework improves completeness and structure in the way that interventions are reported in clinical research. This enables more reliable replication in subsequent research and ensures that interventions are delivered as intended. See: Hoffmann, T. et al. (2014). Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. *BMJ* 348:g1687.

Appendix: Expert Reference Group for Osteopathy

The Expert Reference group for Osteopathy (the ERG) was convened in October 2021 to support the development of a review of the evidence for the effectiveness and safety of osteopathy in the management of musculoskeletal conditions.

External members

Members from the osteopathy sector were nominated by their professional body, Osteopaths New Zealand, to provide subject matter expertise:

- Dr Paul Orrock
- Clive Standen

Independent members

Independent members were nominated by ACC to provide additional representation from academic, research and lay consumer perspectives:

- Professor Dave Baxter (University of Otago)
- Dr Hilary Stace (University of Victoria, Wellington)

ACC Members

- Julie Yee, Health Sector Partnerships (Chair)
- Amanda Bowens, Clinical Quality and Governance
- Greg Swann, Recovery Services
- Kay Conafray, Recovery Services