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REVIEW

Muscle energy technique for non-specific low-back pain. A Cochrane systematic review

Helge Franke [a], **Gary Fryer** [b,*], **Raymond WJG. Ostelo** [c], **Steven J. Kamper** [d]

[a] *Institute for Osteopathic Studies, Siegen, Germany*
[b] *College of Health and Biomedicine, Victoria University, Melbourne, Australia*
[c] *Department of Health Sciences, EMGO Institute for Health and Care Research, VU University, Amsterdam, Netherlands*
[d] *Musculoskeletal Division, The George Institute for Global Health, Sydney, Australia*

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Abstract *Background:* Low back pain (LBP) is responsible for considerable personal suffering due to pain and reduced function, as well as being a societal burden due to costs of health care and lost work productivity. Muscle energy technique (MET) is a manual therapy treatment technique used predominantly by osteopaths, physiotherapists and chiropractors which involves alternating periods of resisted muscle contractions and assisted stretching. It is unclear whether MET is effective in reducing pain and improving function in people with LBP.
Objectives: To examine the effectiveness of MET in the treatment of people with non-specific LBP compared with control interventions, with particular emphasis on subjective pain and disability outcomes.
Methods: Eight electronic databases and two clinical trials registers were searched from inception to May and June 2014 together with reference checking and citation searching of relevant systematic reviews. Randomised controlled trials assessing the effect of MET on pain or disability in patients with non-specific LBP were included. Two authors independently assessed the risk of bias and extracted the data. Meta-analysis was performed where clinical homogeneity was sufficient.

* Corresponding author. College of Health and Biomedicine, Victoria University, PO Box 14428 MCMC, Melbourne, 8001, Australia. Tel.: +61 3 99191065.
E-mail addresses: helge@franke-center.de (H. Franke), gary.fryer@vu.edu.au (G. Fryer), r.ostelo@vu.nl (R.WJG. Ostelo), skamper@georgeinstitute.org.au (S.J. Kamper).

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The quality of the evidence for each comparison was assessed with the GRADE approach.
Results: There were 12 randomized controlled trials with 14 comparisons included in the review, with a total sample of 500 participants across all comparisons. Included studies were typically very small (n = 20—72), all except one were assessed as being at high risk of bias, and all reported short-term outcomes. For the purposes of pooling, studies were divided into seven clinically homogenous comparisons according to the patient population (acute or chronic LBP) and the nature of the control intervention. The meta-analyses and GRADE assessment provided low-quality evidence that MET provided no additional benefit when either compared to, or added to, other therapies on the outcomes of pain and disability in the short-term.
Conclusion: The quality of research related to testing the effectiveness of MET for treatment of people with LBP is poor. Studies were generally small and at high risk of bias due to methodological deficiencies. Studies conducted to date generally provide low-quality evidence that MET is not effective for patients with LBP. There is insufficient evidence to determine whether MET is likely to be effective in practice. Large, methodologically-sound studies are necessary to investigate the effectiveness of MET as an intervention for treatment of people with LBP.

Implications for practice

- The quality of research related to testing the effectiveness of MET is poor.
- There is not sufficient evidence to confidently determine whether MET is likely to be effective in practice as a treatment for low back pain.
- There is a need for larger, higher-quality studies with more robust methodology.
- Authors of studies are recommended to adhere to the CONSORT guidelines to improve the reporting of study methods and results.

Implications for research

There is a need for larger, higher-quality studies with more robust methodology. Studies should clearly describe all methods, have larger sample sizes, use robust methods of statistical analysis, demonstrate baseline equivalence of patient characteristics between groups, and use treatment protocols that can be generalised to clinical practice. Authors of studies are recommended to adhere to the CONSORT guidelines[55] to improve the reporting of study methods and results.

Background

Clinical guidelines for low back pain (LBP) developed by the National Institute for Health and Clinical Excellence[1] define nonspecific LBP as "tension, soreness and/or stiffness in the lower back region for which it is not possible to identify a specific cause of the pain". The aetiology of LBP is poorly understood and it has been estimated that 85% of patients with isolated LBP cannot be given a precise pathoanatomical diagnosis.[2] LBP is multifactorial and different chains of causation make it very difficult to isolate risk factors.[3] The recurrence rate of LBP is high and 47%—84% of individuals who have an episode of LBP will suffer a recurrence within one year.[4]

In clinical practice, non-specific LBP which is present for less than six weeks is classified as 'acute'. When back pain persists between six weeks and three months it is described as 'subacute', and longer than 3 months as 'chronic'.[5] Other authors point out that patients with LBP typically experience changing, intermittent episodes of varying duration, and the 'acute-subacute-chronic' classification is inadequate in classifying this episodic and intermittent condition.[6,7]

Economic consequences of back pain are enormous. A small number of patients with chronic or episodic LBP account for a large proportion of the healthcare expenditure on this condition. In addition to the economic impact of LBP on the individual and society, there is a further personal impact on the individual, such as negative social behaviour, retreat from activities of daily living, and reduced quality of life in people with long-term back pain.[8]