



## Overview of Supportive Studies: McKenzie Method® of Mechanical Diagnosis and Therapy® (MDT)

Richard Rosedale PT, Dip. MDT, Robert Medcalf PT, Dip. MDT. Updated Jan 2018

The McKenzie Method of MDT continues to be one of the most researched conservative approaches to musculoskeletal problems available. It has been examined in depth in relation to its utility in the spine, and the research is accumulating to support its use in the extremities. The following is a small selection of some of the most important studies on the approach to date, with an explanation of their significance.

### Assessment Reliability

---

Reliability means that different examiners will agree on the assessment findings and reach the same patient classification. Since treatment decisions rely exclusively on the assessment and classification, this is critical. The following four studies demonstrate that the McKenzie Method, when applied by Credentialed or Diplomaed clinicians to the spine and extremities, found good to almost perfect reliability using a concurrent or vignette reliability design:

[Kilpikoski S, et al. Inter-examiner reliability of LBP assessment using the McKenzie method. Spine. 15:27. 2002](#)

[Clare HA, et al. Reliability of McKenzie classification of patients with cervical or lumbar pain. JMPT. 28. 2005](#)

[Heidar Abady A, et al. Inter-examiner reliability of diplomats in the MDT system in assessing patients with shoulder pain. JMMT 22; 4. 2014](#)

[Willis S, et al. Inter-rater reliability of the McKenzie System of MDT in the examination of the knee. JMMT 25:2. 2017](#)

### Treatment Efficacy

---

The following RCTs endorse the treatment value of MDT, showing efficacy in the spine and in the extremity.

[Long A, et al. Does it matter which exercise? A RCT of exercises for LBP. Spine. 29:2593-2602. 2004](#)

This groundbreaking study clearly endorses the value of sub-classifying our patients using a McKenzie assessment, establishing directional preference and matching specific exercises based upon these findings. All patient outcomes including pain, function and medication use were dramatically affected.

[Petersen T, et al. The McKenzie Method Compared with Manipulation When Used Adjunctive to Information and Advice in LBP Patients Presenting with Centralization or Peripheralization. A RCT. Spine. 36:24. 2011](#)

With a one year follow-up, this study compared two alternative LBP interventions. The McKenzie Method was found to be more effective than manipulation, and the study gives support to the Method's classification based approach.

[Albert H, Manniche C. The Efficacy of Systematic Active Conservative Treatment for Patients with Severe Sciatica. A Single-Blind, Randomized, Clinical, Controlled Trial. Spine. 37:7. 2012](#)

The patients in this study had symptoms that would normally qualify them for surgery. The patients given directional preference exercises determined by the McKenzie Method improved significantly more with respect to global improvement, sick leave, vocational status, root compression signs, and patient satisfaction.

[Rosedale R, et al. Efficacy of Exercise Intervention as Determined by the McKenzie System of Mechanical Diagnosis and Therapy for Knee OA: A RCT. J. Ortho. Sports Phys. 44:173-181. 2014](#)

Patients given exercises based on an MDT assessment had superior outcomes compared to those of wait-list controls. 40% of the knees examined were classified as Derangements; they demonstrated large effect sizes at two weeks for all primary outcomes and up to large effect sizes at three months.

### Efficacy with Psychosocial Factors

---

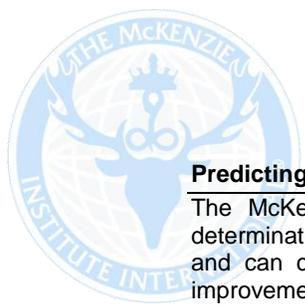
Numerous studies have explored the effect of MDT on psychosocial outcomes. There have been positive effects in relation to fear avoidance, fear and disability beliefs, somatization, depressive symptoms and pain self-efficacy.

[Werneke M, et al. Change in psychosocial distress associated with pain and functional status outcomes in patients with lumbar impairments referred to PT services. J. Ortho. Sports Phys. 41:969-980. 2011](#)

Data from 586 patients with LBP showed that those who demonstrated non-centralization (37%) had significantly worse pain, functional disability and psychosocial distress outcomes compared to those who centralized (45%).

[Mbada C, et al. Comparative efficacy of three active treatment modules on psychosocial variables in patients with long-term mechanical low- back pain: a randomized-controlled trial, Archives of Physiotherapy. 5:10. 2015](#)

This RCT looked at psychosocial outcomes in patients with lumbar Derangement responding to the extension principle, given directional preference exercises alone and in combination with strengthening. At 4 and 8 weeks all groups demonstrated significant improvements on all measures of beliefs and fear avoidance



## **Predicting Outcomes**

---

The McKenzie Method also has a proven ability to predict patient outcome through classification and the determination of Centralisation or Directional Preference. If a patient with spinal pain is classified as a Derangement and can centralise their symptoms in a short time after initiating MDT, the prognosis for a rapid and lasting improvement is very good.

[Werneke M, Hart DL. Centralization phenomenon as a prognostic factor for chronic LBP and disability. Spine. 26;7: 758-65. 2001](#)

[Skytte L, et al. Centralization: Its prognostic value in patients with referred symptoms and sciatica. Spine. 30;11:E293-9. 2005](#)

[Werneke M, et al. Association Between Directional Preference and Centralization in Patients with Low Back Pain. J. Ortho. Sports Phys. 41:22-31. 2014](#)

[Heidar Abady A, et al. Application of the McKenzie system of Mechanical Diagnosis and Therapy \(MDT\) in patients with shoulder pain; a prospective longitudinal study. J Man Manip Ther 25:5:235-243. 2017](#)

## **Avoiding potential surgery and cost saving implications**

---

Several studies have shown the potential of MDT for pre-surgical screening and intervention to reduce surgery rates in the spine. This could have significant cost-saving implications. In the first study, four years after implementation of McKenzie based spine clinics in a Danish county, lumbar disc surgery rates were reduced by 50% compared with previous years. In the second study, transforaminal epidural injections followed by MDT demonstrated the potential to be an effective strategy in preventing surgical interventions for patients with lumbar disc herniation.

[Rasmussen C, et al. Rates of Lumbar Disc Surgery Before and After Implementation of Multidisciplinary Nonsurgical Spine Clinics. Spine 30; 21:2469-73. 2005](#)

[Van Helvoirt H, et al. Transforaminal Epidural Steroid Injections Followed by MDT to Prevent Surgery for Lumbar Disc Herniation. Pain Med. 15\(7\):1100-8. 2014](#)

## **Systematic Reviews and Guidelines featuring The McKenzie Method**

---

MDT and the phenomenon of Centralisation and Directional Preference have been the subject of, or included in, many systematic reviews and guidelines. Here are a few examples;

[Rossignol M, et al. Clinic on LBP in Interdisciplinary Practice \(CLIP\) Guidelines Montreal: Direction de sante publique, Agence de la sante et des services sociaux de Montreal. 2007](#)

The McKenzie Method is a recommended 'therapeutic intervention' for acute, subacute and chronic LBP patients with varying grades of scientific evidence.

[Delitto A, et al. Low Back pain. Clinical Practice Guidelines. J. Ortho. Sports Phys. 42;4:A1-A57. 2012](#)

It was recommended that clinicians should use specific repeated movements to promote centralization in patients with acute, subacute or chronic low back pain, with the recommendation based on Grade A 'Strong evidence'

[May S, Alessandro A. Centralisation and directional preference: a systematic review. Manual Therapy 17. 2012](#)

This review found that centralisation and directional preference had been reported in 62 studies. The majority of evidence was supportive of these responses as being reliably assessed and associated with a good prognosis.

[Stynes S, et al. Classification of patients with LB-related leg pain: a systematic review. BMC MSK Disorders 17:226. 2016](#)

This review evaluated 22 systems that classify populations with low back-related leg pain. MDT scored the highest of any system, with criteria based upon purpose, validity, feasibility, reliability and generalisability.

[Brosseau L, et al. The Ottawa panel clinical practice guidelines for the management of knee osteoarthritis. Strengthening exercise programs. Clin Rehab. 1-16. 2017](#)

This clinical practice guideline developed by a panel of international experts made recommendations on the management of knee OA in regard to exercise. MDT was 'strongly recommended' as an intervention.

**For the most up-to-date and complete list of MDT references, visit:**  
[www.mckenzieinstitute.org](http://www.mckenzieinstitute.org)