



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

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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**

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It is fundamentally important that any system of assessment and treatment has established 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 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 Published online 07 Sept 2016*

### **Treatment Efficacy**

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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 Vol 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 Vol 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. JOSPT. Vol 44, No.3. 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. This demonstrated success with a population with severe knee OA awaiting potential knee joint replacement.

### **Efficacy with Psychosocial Factors**

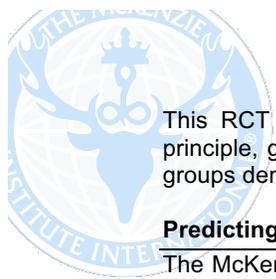
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Numerous studies have explored the effect of MDT on psychosocial outcomes. There have been positive effects in relation to fear avoidance, fear and disability beliefs, somatization, depressive symptoms and pain self-efficacy.

*Werneke M, et al. Change in psychosocial distress associated with pain and functional status outcomes in patients with lumbar impairments referred to PT services. JOSPT. 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 an important asset in its ability to predict patient outcome through classification and the determination of Centralisation. If a patient with lumbar or cervical 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). 2001*

*Werneke MW, Hart DL. Categorizing patients with occupational LBP by use of the Quebec Task Force classification system versus pain pattern classification procedures. PTJ 84. 2004*

*Skytte L, et al. Centralization: Its prognostic value in patients with referred symptoms and sciatica. Spine 30. 2005*

### **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. 2005*

*Van Helvoirt H, et al. Transforaminal Epidural Steroid Injections Followed by MDT to Prevent Surgery for Lumbar Disc Herniation. Pain Med.15(7). 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;

*May S, Alessandro A. Centralisation and directional preference: a systematic review. Manual Therapy 17, 497-506, 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.

*Danish Health Technology Assessment: LBP. Frequency, management and prevention from an HTA perspective. National Board of Health, Copenhagen, Denmark. 1-106. 1999*

This wide-ranging review and guideline includes a summary of the McKenzie approach, both as a treatment and as a diagnostic method. They concluded there was limited evidence to support its use as a treatment for both acute and chronic LBP, and moderate evidence indicating its value as a diagnostic tool and prognostic indicator.

*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. JOSPT 42, 4. 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'

**For the most up-to-date and complete list of MDT references, visit:**

[www.mckenzieinstitute.org](http://www.mckenzieinstitute.org)