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

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The McKenzie Method of MDT continues to be the most researched conservative approach 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 selection of some of the most important studies on the approach to date with an explanation of their significance.

**Assessment**

It is fundamentally important that any system of assessment and treatment have two key components of the assessment:

1. Reliability and,
2. Diagnostic validity

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 three studies demonstrate that the McKenzie Method, when applied by Credentialed or Diplomaed clinicians to the spine, found good to almost perfect reliability:

*Razmjou H, Kramer JF, Yamada R; Intertester reliability of the McKenzie evaluation in assessing patients with mechanical low-back pain. J Orth & Sports Phys Ther; Jul;30(7):368-383, 2000*

*Kilpikoski S, Airaksinen O, Kankaanpaa M, Leminen P, Videman T, Alen M. Interexaminer reliability of low back pain assessment using the McKenzie method. Spine; Apr 15;27(8), 2002*

*Clare HA, Adams R ,Maher CG. Reliability of McKenzie classification of patients with cervical or lumbar pain. J Manipulative Physiol Ther 28, 2005*

When applied to the extremities in general and the shoulder in particular, Diplomaed clinicians using the McKenzie Method demonstrated 'very good' levels of agreement:

*May S, Ross J. The McKenzie classification system in extremities: a reliability study using McKenzie assessment forms and experienced clinicians. J Manipulative Physio Ther; 32(7):556-63. 2009*

*Heidar Abady A, Rosedale R, Overend T, Chesworth B, Rotondi M. Inter-examiner reliability of diplomats in the mechanical diagnosis and therapy system in assessing patients with shoulder pain. Journal of Manual and Manipulative Therapy Vol. 22, No. 4. 2014*

The second part of the diagnostic process is the accuracy of the assessment when compared to a diagnostic standard. The following two studies demonstrate the accuracy of key findings in the McKenzie assessment and their relation to diagnostic injections. These are the first studies to our knowledge to find any physical examination process can accurately predict injection findings.

*Donelson R, Aprill C, Medcalf R, Grant W.; A prospective study of centralization of lumbar and referred pain. A predictor of symptomatic discs and anular competence. Spine; May 15;22(10). 1997*

*Laslett M, Young SB, Aprill CN, McDonald B.; Diagnosing painful sacroiliac joints: A validity study of a McKenzie evaluation and sacroiliac provocation tests. Aust J Physiother; 49(2). 2003*

**Predicting Outcome**

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 low back pain and disability. Spine; Apr 1;26(7). 2001*

*Werneke MW, Hart DL; Categorizing patients with occupational low back pain by use of the Quebec Task Force Classification system versus pain pattern classification procedures: discriminant and predictive validity Phys Ther; 84. 2004*

*Skytte L, May S, Petersen P; Centralization: Its prognostic value in patients with referred symptoms and sciatica Spine; 30:E293-E299. 2005*

## Treatment

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

*Long A, Donelson R, Fung T; Does it matter which exercise? A randomized control trial of exercises for low back pain. 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, Larsen K, Nordsteen J, Olsen S, Fournier G, Jacobsen S. The McKenzie Method Compared with Manipulation When Used Adjunctive to Information and Advice in Low Back Pain Patients Presenting With Centralization or Peripheralization. A Randomized Controlled Trial. Spine Vol 36, 24. 2011*

With a one year follow-up, this study compared two alternative treatments for lumbar Derangements. 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. This demonstrates success of the Method even with severe sciatica.

*Rosedale R, Rastogi R, May S, Chesworth B, Filice F, Willis S, Howard J, Naudie D, Robbins S. Efficacy of Exercise Intervention as Determined by the McKenzie System of Mechanical Diagnosis and Therapy for Knee Osteoarthritis: A Randomized Controlled Trial. 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.

## Avoiding potential surgery and cost saving implications

Several studies have shown the potential of the McKenzie Method 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, Nielsen G, Hansen V, Jensen O, Schioettz-Christensen B. Rates of Lumbar Disc Surgery Before and After Implementation of Multidisciplinary Nonsurgical Spine Clinics. Spine Vol. 30, 21. 2005*

*Van Helvoirt H, Apeldoorn A, Ostelo R, Knol D, Arts M, Kamper S, van Tulder M. Transforaminal Epidural Steroid Injections Followed by Mechanical Diagnosis and Therapy to Prevent Surgery for Lumbar Disc Herniation. Pain Med.15(7). 2014*

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