

McKenzie Approach to Treating Lumbar Radiculopathy with a Lateral Shift: A Case Report

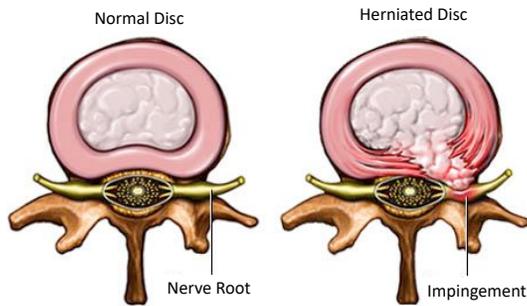
Carly Theriault, LAT, ATC, DPT Student

Department of Physical Therapy, University of New England, Portland, ME



Background

- Lumbar radiculopathy is compression of a spinal nerve root, typically due to a herniated nucleus pulposus
- It can present as low back pain (LBP) that radiates to one lower extremity (LE) and may be associated with diminished sensation, strength and reflexes on the affected side
- The McKenzie approach is an evaluation and treatment technique that focuses on the movement of the nucleus pulposus within the intervertebral disc during trunk movement¹
- This approach involves having a patient perform repeated motions, while monitoring their symptoms for centralization
- Centralization refers to the concept that radiating symptoms into the lower extremities can move proximally toward the spine²



<https://www.kineticedgept.com/tag/herniated-disc/>

Purpose

To evaluate the efficacy of the McKenzie method, along with manual therapy, strengthening and stretching exercises, modalities, patient education and a home exercise program (HEP) for a patient with lumbar radiculopathy. The setting of this episode of care was outpatient orthopedics.

Case Description

- 59-year-old male with lumbar radiculopathy and a left lateral shift
- History of low back work injuries in 2008, 2017 and 2018
- Chief complaints: pain, numbness/tingling, decreased range of motion (ROM) and difficulty completing activities of daily living (ADLs)
- Prior level of function: fully independent
- Goals: improve pain, posture, lumbar spine ROM, lower extremity strength, and lifting ability

Systems Review

Results

Cardiovascular/Pulmonary	Unremarkable
Musculoskeletal	<ul style="list-style-type: none"> Decreased lumbar lordosis, relevant left (L) lateral shift Decreased trunk and right (R) LE strength Decreased lumbar spine ROM and joint mobility Tenderness to palpation along lumbar spine and R piriformis
Neuromuscular	<ul style="list-style-type: none"> Positive Slump Test and Straight Leg Raise (SLR) on R Decreased sensation of L4-S1 dermatomes on R
Integumentary	Unremarkable
Communication	Not impaired
Affect, Cognition & Learning	Not impaired. Patient learns best through demonstration

Intervention

The patient received physical therapy (PT) treatment 2 times a week for 8 weeks. Interventions included McKenzie based exercises, strengthening, stretching, soft tissue mobilization, electrical stimulation and a HEP.



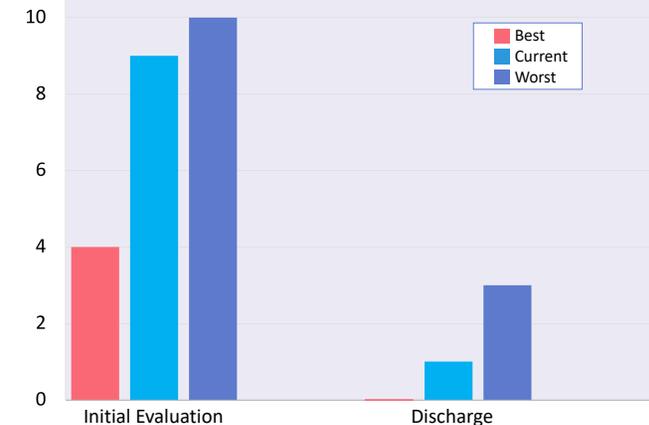
A. Starting position for side glides, B. Side glides for lateral shift correction, C. Posterior view of hips off center prone on elbows, D. Lateral view of hips off center prone on elbows, E. Prone on elbows, F. Prone press ups

Tests & Measures	Initial Evaluation Results	Discharge Results
Posture	Loss of lumbar lordosis Relevant L lateral shift	Partial restoration of lordosis No L lateral shift
Lumbar spine ROM		
Flexion	35	80
Extension	10	25
Left lateral flexion	10	35
Right lateral flexion	10	35
Left rotation	20	40
Right rotation	20	40
Lumbar Special Tests		
SLR	(+) on R for LBP, (+) on L for LBP	(-) Bilaterally
Slump test	(+) on R for radicular symptoms, (-) on L	(-) Bilaterally
Mechanical Lumbar Spine Assessment (in standing)		
Repeated flexion	Increased LBP and R LE pain	No provocation of symptoms
Repeated extension	Increased R LBP, decreased LE pain/symptoms	Decreased LBP
Lumbar Dermatomes (Sensation)	Decreased on R, light touch L4-S1 dermatomes on R, intact on L	Intact bilaterally
	LE paresthesia on the R, none on the L	No paresthesia
Lumbar Myotomes		
Hip flexion (L2)	4+/5 bilaterally (B)	4+/5 B
Knee extension (L3)	4/5 on R, 5/5 on L	5/5 B
Ankle dorsiflexion (L4)	3/5 on R, 4+/5 on L	4+/5 B
Great toe extension (L5)	3+/5 on R, 4+/5 on L	4+/5 B
Ankle eversion (S1)	3+/5 on R, 4/5 on L	4/5 B

Outcomes

- Decreased pain from 4/10 to 0/10 at best
- Increased lumbar spine ROM
- Increased lower extremity strength
- Increased lower extremity sensation
- Decreased tenderness to palpation

Pain Level (Numeric Pain Rating Scale)



Discussion

- The interventions appeared to be successful based on the patient's subjective reports and objective findings
- Results showed improvements with pain, ROM, strength, sensation, and tenderness
- The patient verbalized compliance with his HEP prior to discharge
- The outcomes of this case seemed to be consistent with current research regarding directional preference and repeated motions
- Further research is needed to determine the long-term benefits of a McKenzie based treatment program
- Due to the high prevalence of LBP, more research is necessary to find the optimal treatment method to prevent chronic pain and disability

Acknowledgements

The author acknowledges Matt Somma, PT, DPT, MTC, CSCS for assistance with case report conceptualization, the clinical instructor Brian Ritchie, PT, DPT for supervision and assistance with patient management, and the patient for willingness to participate in the case report.

References

- Szulk P, Wendt M, Waszak M, Tomczak M, Cieřlik K, Trzaska T. Impact of McKenzie method therapy enriched by muscular energy techniques on subjective and objective parameters related to spine function in patients with chronic low back pain. *Med Sci Monit*. 2015;21:2918-2932. Accessed: June 6, 2018.
- Surkitt LD, Ford JJ, Hahne AJ, Pizzari T, McMeeken JM. Efficacy of directional preference management for low back pain: a systematic review. *PTJ*. 2012;21(5):652-665. Accessed: June 4, 2018.