

Application of a Short-Term Aquatic Physical Therapy Program for a Patient with Chronic Low Back Pain and Radiculopathy: A Case Report

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Background

- Chronic low back (CLBP) pain is a common referral to outpatient PT¹
- Radiculopathy has the potential to contribute to back pain
- Aquatic PT is utilized at select sites to treat patients with various debilitating conditions
- Aquatic PT has been shown to improve quality of life, disability and pain²
- Limited understanding on the short-term effects of aquatic PT
- Must work within the confines of approved PT visits by local and national insurance companies

Purpose

- Investigate if six physical therapy visits with aquatic intervention for a patient with chronic low back pain and radiculopathy improves a patient's subjective and objective impairments in relation to his quality of life

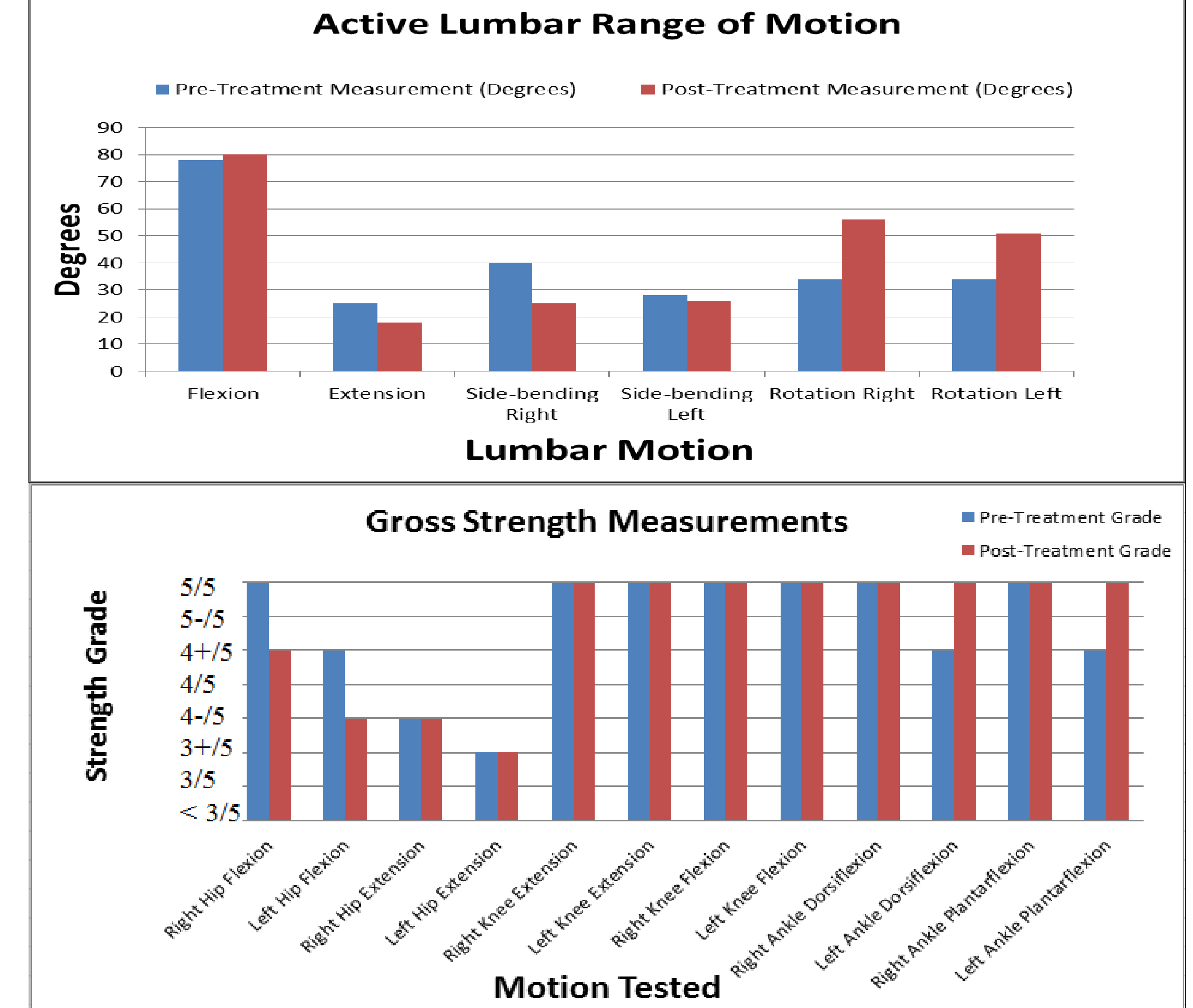
Case Description

- 62 year old male referred with CLBP and radiculopathy, left lower extremity more affected than right lower extremity
- Progressively worsening back pain for 40 years after lifting accident at work; radiculopathy presented 1 month prior to the examination
- Retired United States veteran
- Referred by doctor at United States Department of Veteran Affairs
- 6 approved PT visits

Examination

History	Subjective/ Objective Impairments
<ul style="list-style-type: none"> Low back pain for 40 years History of smoking High blood pressure Diabetes Surgery: cervical fusion and left knee arthroscopy Polypharmacy 	<ul style="list-style-type: none"> QOLS-CP NPRS ODI AROM Gross LE Strength DTRs Gait Tender to palpate Posture (+) SLR

Objective Outcomes



(Range of Motion measured via goniometry, Gross Strength measured via manual muscle testing)

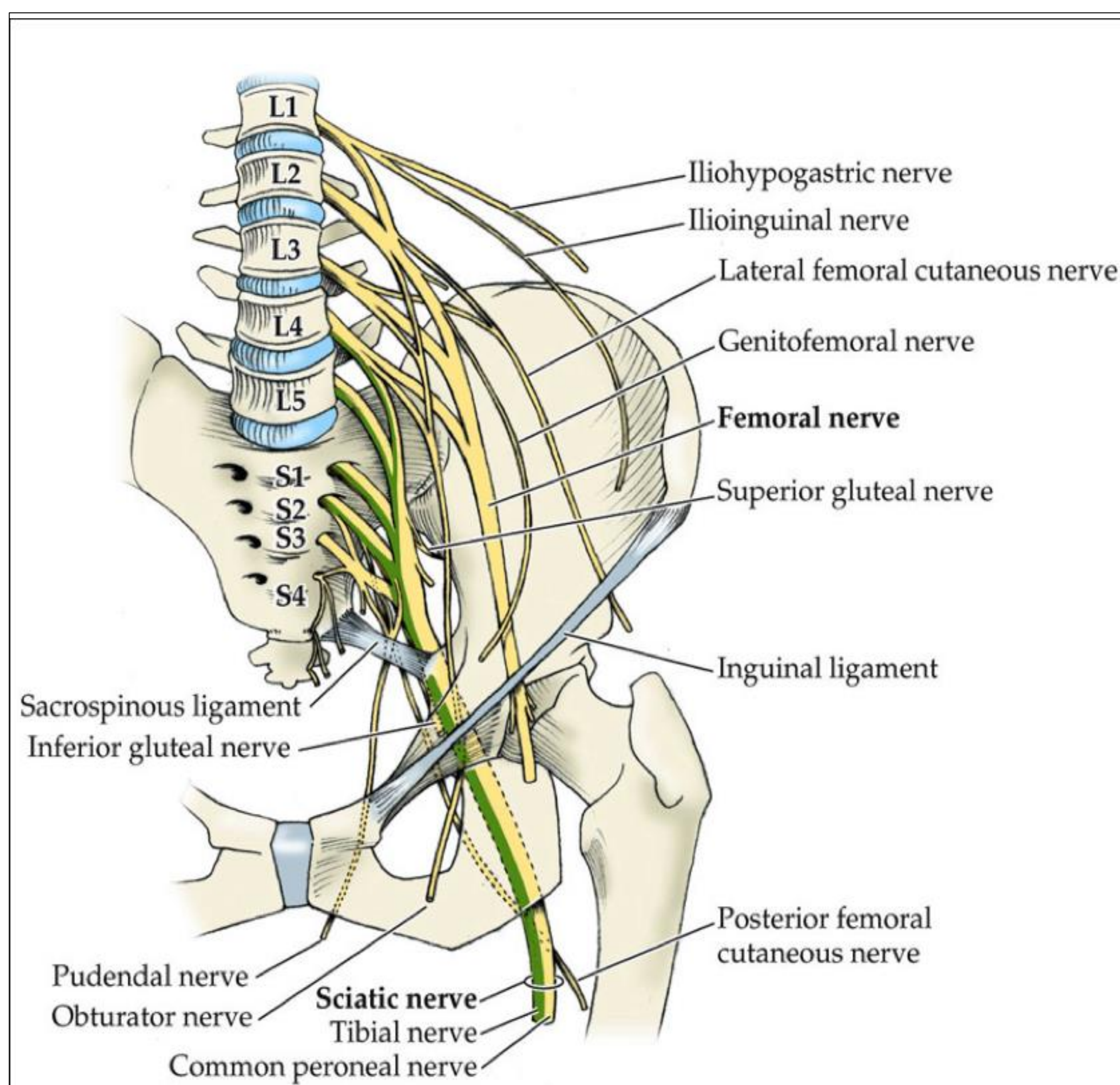


Image: Neuroanatomy of the Lumbosacral Spine

(http://www.learnneurosurgery.com/uploads/1/6/6/8/16689668/82611_orig.png)

Intervention

Exercise	First Treatment	Final Treatment	Exercise	First Treatment	Final Treatment
1. Ambulation	3 minutes	3 minutes	7. Trunk Rotation with Noodle	2 minutes	3 minutes
2. Side Steps	3 minutes	3 minutes	8. Bicycles	2 minutes	Discontinued
3. 3 Way Hip Kicks	2 minutes	3 minutes	9. Scissors	2 minutes	2 minutes
4. Heel Raises	2 minutes	3 minutes	10. Hip Internal/External Rotations	2 minutes	2 minutes
5. Leg Press with Noodle	2 minutes	2 minutes	11. Long Arc Quads	2 minutes	2 minutes
6. Step Ups	1 minute	2 minutes	12. Standing Hamstring Stretch	3 sets, 30 second holds	3 sets, 30 second holds

Subjective Outcomes

Outcome Measure Used	Pre-Treatment Score	Post-Treatment Score	Status at Discharge
NPRS	9/10	6/10	Improvement
ODI	40%	44%	Regression
QOLS-CP	3/10	3/10	No Change

Abbreviations: NPRS = Numeric Pain Rating Scale, ODI = Oswestry Disability Index, QOLS-CP = Quality of Life Scale for Patients with Chronic Pain

Discussion

- While progress was apparent in some measures, there was regression or no change in others
- Several reasons for plausible inconsistencies
- Further investigation is warranted

References

- Jette AM, Smith K, Haley SM, et al. Physical therapy episodes of care for patients with low back pain. *Phys Ther*. 1994 Feb;74(2):101-110.
 - Baena-Beato PA, Artoro EG, Arroyo-Morales M, et al. Aquatic therapy improves pain, disability, quality of life, body composition and fitness in sedentary adults with chronic low back pain: A controlled clinical trial. *Clin Rehabil*. 2014;28(4):350-60. doi: 10.1177/0269215513504943
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