The Use of Manual Lumbar Traction and Therapeutic Exercise in the Treatment of a Patient with Low Back Pain: A Case Report
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Background and Purpose
- The prevalence of low back pain (LBP) has been increasing in the United States.¹
- Manual lumbar traction and therapeutic exercise are two common treatments by physical therapists (PT) for LBP, but there is limited research investigating the combined effects of these treatments on low back pain.
- The purpose of this case report was to investigate the combined effects of these treatments on LBP.

Case Description
- 48 year old female
- primary complaint- pain in the lumbar region
- Pain inhibited daily tasks and activity
- PT diagnosis- Spondylosis without myelopathy or radiculopathy, lumbar region
- Positive prognostic indicators- motivation to participate in PT and return to prior level of function and research reports patients with LBP had favorable outcomes with most pain and LBP resolved within weeks.²
- Negative prognostic indicators included onset age, gender, and chronic nature of symptoms.³

Interventions
- Interventions included manual therapy, muscle stretching, and therapeutic exercises.
- Manual lumbar traction was selected to increase intervertebral space.
- Muscle stretching was performed to reduce soft tissue mobility restrictions of the piriformis, tensor fasciae latae (TFL), and iliotibial (IT) band.
- Therapeutic exercises were selected to improve transverse abdominis and hip abduction strength.

Manual Lumbar Traction
- Piniformis Stretch
- TFL and IT Band Stretch

Abdominal Brace
Heel Slides
Clamshell Exercise
Bridging Exercise
Brace with P-Press
Brace with One Arm Row
Brace with Across Body Chop
Standing Hip Flexion
Side Steps

Outcomes and Goals
- Improved pain levels, strength, soft tissue restriction, tenderness upon palpation, and functional movement
- All short term goals achieved except pain levels
- Despite not meeting goal for 3/10 on the Numeric Pain Rating Scale (NPRS), the patient reported decreased frequency of pain.
- All long term goals achieved at discharge

Tests and Measures

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<th>Tests and Measures</th>
<th>Initial Evaluation</th>
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<td>Throacolumbar Active ROM</td>
<td>Full Pain/Increased with extension</td>
<td>Full ROM No Pain/With Any Motion</td>
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<tr>
<td>Manual Muscle Testing</td>
<td>Left</td>
<td>Right</td>
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<tr>
<td>Gross LE</td>
<td>4/5</td>
<td>4/5</td>
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<tr>
<td>Hip Abduction</td>
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<tr>
<td>Transverse Abdominis</td>
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<tr>
<td>Flexibility Restrictions</td>
<td>Left</td>
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<tr>
<td>Piriformis</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>Iliobial Band</td>
<td>Mild</td>
<td>Mild</td>
</tr>
<tr>
<td>Hamstrings</td>
<td>Moderate</td>
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<td>Spasms</td>
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<tr>
<td>Genu Recurvatus and Piriformis</td>
<td>Grade 3 with Pain</td>
<td>Grade 1 with Pain</td>
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<tr>
<td>Squatting</td>
<td>Knee Extension to 90° at end of motion</td>
<td>Good mechanics</td>
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<td>Numeric Pain Rating Scale (NPRS)</td>
<td>Pain at Worst</td>
<td>3/10</td>
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References

Discussion
- Plan of care was successful in decreasing LBP for this patient
- Increased intervertebral space⁶, supported lumbar spine⁷, or increased blood flow to the spine⁸ may have contributed to successful outcomes.
- Future research: greater sample size, examination of long term effects, and other outcome measures

Acknowledgements
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