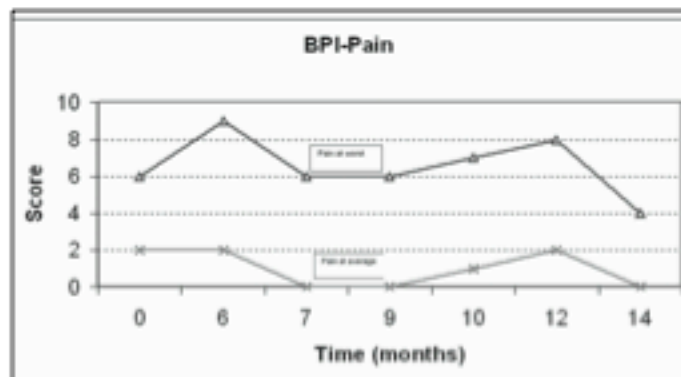


**Table 4.** Physical findings at 14 month follow-up

<b>Observation</b>
<ul style="list-style-type: none"><li>• The scar no longer reddened and could be palpated without discomfort.</li><li>• Able to maintain a neutral spine in standing and from sit to stand with normal muscle tone throughout the erector spinae</li><li>• Mild difficulty walking on heels especially right</li></ul>
<b>Active range of motion</b>
<ul style="list-style-type: none"><li>• Forward bending demonstrated a more normal curve throughout range, with no hinging or need to use her hands to regain normal standing posture.</li></ul>
<b>Neurologically</b>
<ul style="list-style-type: none"><li>• Right and left knee jerk reflex were equal and reactive</li><li>• Strength of ankle dorsiflexors were equal</li><li>• Straight leg raise equal left to right at 85°.</li></ul>
<b>Motion palpation</b>
<ul style="list-style-type: none"><li>• PPIVM of the lumbar segments 3 to 5 were no longer blocked by painful spasm</li><li>• Noticeable improvement in activating and maintaining contraction of core muscles.</li><li>• Passive stability tests with torsion and anterior to posterior shear at L4-5 negative for an excessive neutral zone.</li></ul>
<b>Motor Control</b>
<ul style="list-style-type: none"><li>• Able to activate core muscles without fatiguing</li><li>• In prone, hip extension was equal for both legs when tested.</li><li>• Left and right hip joint positions were symmetrical.</li><li>• Standing on the right leg and lifting the left to 90° (Gillet's test) demonstrated excellent weight transfer and normal ability to accept load through the right lower extremity.</li><li>• There was no longer a noticeable crease or shearing with right leg standing.</li></ul>



**Figure 1.** Brief Pain Inventory score for pain by time

derlying instability in the core system this will lead to disturbed function, excessive hypermobility and blockage of neighboring or distant parts of the locomotor system and thus lead to degenerative changes of the spinal segments<sup>6,7</sup>. This client presented with an ongoing history of lumbar and radicular pain that eventually affected the entire lower quadrant leading to degenerative changes, which affected her quality of life. Before the RIT she was unable to walk more than 20 minutes without a feeling of "giving away". After RIT, as seen in Table 3, she was able to walk for 60 minutes with no pain or giving way. On physical examination before RIT there was evidence of excessive giving way with passive directional testing of the L4-5 segments that was no longer apparent after RIT. This helped the client's ability to activate the core muscles especially multifidus and she could therefore perform these exercises without exacerbating her symptoms.

The author and the treating physician believe that the inert structures of ligaments and tendons were strengthened by RIT and hence could provide a stronger support structure for the contractile tissue. In this case, although manual skills were important in the physical assessment and re-evaluation of findings, much of the treatment demanded the ability of the manual therapist to recognize aberrant motor planning and treat appropriately with functional exercise and advice. While RIT and intensive manual therapy may not be the treatment option for all chronic low back pain clients, there may be a group of clients with specific characteristics that would make them appropriate candidates for this form of care. This case study shows that some characteristics of this subgroup may be

- 1) a positive attitude to improve quality of life (i.e. want to get better),
- 2) minimal dependency on medication,
- 3) a specific biomechanical dysfunction which can be diagnosed with motion testing,
- 4) good body awareness, and
- 5) a willingness to learn new movement strategies.

#### **Conclusion**

This case demonstrates how the use of RIT and manual therapy was used to manage a client who was unresponsive to surgical repair of a disc herniation. Supplementing conventional management strategies with RIT may improve treatment effectiveness by decreasing pain and improving function. Although a causal relationship cannot be drawn from a case report, it may be that RIT strengthens the inert tissue in unstable joints allowing for implementation of carefully selected therapeutic exercise, allowing for return to normal activities of daily living. Further research is needed to determine the optimal role of RIT combined with manual therapy for patients with low back pain related to excessive vertebral mobility and poor spinal motor control. The possibility that subgroups exist in this patient population who are responsive to this treatment approach should be investigated.