

# Treatment of a Patient with Thoracolumbar Scoliosis Utilizing a Regional Interdependence Approach Including Components of the Schroth Method: A Case Report

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## Background

Spinal deformity is a challenging spinal disorder in adults.<sup>1</sup> A scoliotic curve of >10 degrees exists in up to 12% of the population.<sup>1</sup> There is little evidence regarding indications for physical therapy treatment in elderly individuals with adult scoliosis. Current study results favor surgical intervention, but not all elderly individuals are surgical candidates. While surgery is the definitive measure, there is limited evidence to guide non-surgical treatment.<sup>2,3,4</sup>

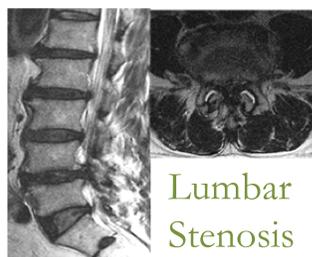
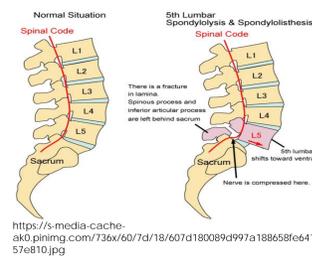
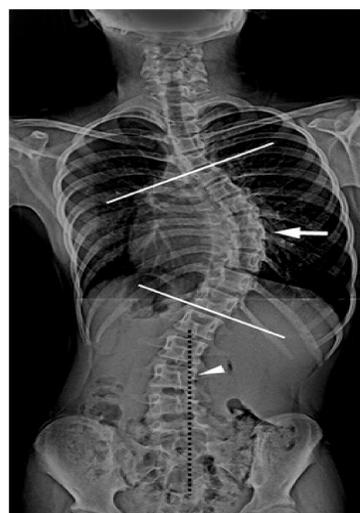
## Purpose

This case investigated components of the Schroth method, as an adjunct to traditional physical therapy (PT) treatment. A Regional Interdependence approach (RIA) was utilized for a patient with scoliosis referred to PT for chronic low back pain (CLBP).

## Case Description

66 year old male presented with CLBP, worst upon rising in the AM with (6/10 NPRS). Patient had thoracolumbar dextroscoliosis, bilateral foraminal narrowing and associated spondylolisthesis. A RIA exam revealed mobility deficits of decreased lumbar range of motion and a 1.38" leg length discrepancy. A comprehensive treatment approach was used including lumbar stabilization exercises, postural therapy, and components of the Schroth method.

## Adult Scoliosis



Lumbar Stenosis

<http://www.greatriversspineclinic.com/wp-content/uploads/2011/02/lumbar-spondylolisthesis.jpg>

<http://www.spineindia.com/2-uncategorised>

## Examination Findings

Tests and Outcome Measures	Initial Evaluation		Final Evaluation	
<b>Leg length: (ASIS to medial malleolus)</b>	R leg 1.38" shorter than L leg		1.38" shoe-lift to correct for leg length discrepancy.	
<b>Lumbar AROM (degrees)</b>	Flexion	50	Flexion	85
	Extension	10	Extension	30
	L Rot	28	L Rot	30
	R Rot	30	R Rot	35
	L SB	45.7 cm	L SB	43 cm
	R SB	41.9 cm	R SB	43.7 cm
<b>*= indicates pain</b>				
<b>Special Tests</b>	<b>L</b>	<b>R</b>	<b>L</b>	<b>R</b>
<b>Slump Test (Lumbar)</b>	(-) for adverse neural tension		(-) for adverse neural tension	
<b>Supine to sit</b>	R leg remained shorter than L in supine to long sit		R leg remained shorter than L in supine to long sit	
<b>PSLR</b>	(+) pain w/ DF, at 45 degrees	(+) pain w/ DF, at 45 degrees	30 degrees w/ hamstring pain	45 degrees w/ hamstring pain
	<b>AKE Hamstring Flexibility Test</b>	121 degrees	122 degrees	130 degrees
<b>Prone Extension (repetitive motions x 5 reps)</b>	Increased pain into R buttock		No change in pain	
<b>NPRS (0-10)</b>	Least= 3-4 w/ pain medication Worst= 6 Best= 3		Least= 1-2 w/ pain medication Worst= 4 Best= 3	
<b>30-Second Sit to Stand Test</b>	5 w/ b/l armrests		8 w/ b/l armrests	
<b>Roland-Morris Low Back Pain Questionnaire</b>	Total score= 19/24		Total Score= 20/24	

## Interventions

Picture	Intervention	Reasoning
	<b>SEAS<sup>6</sup>:</b> R side-lying w/ deep breathing 3x1'	Elongate musculature c/I to dextroscoliosis while expanding rib cage.
	<b>SEAS<sup>6</sup>:</b> R side-lying w/ L rotation and deep breathing 3x1'	Elongate musculature c/I to dextroscoliosis, while expanding rib cage
	<b>SEAS<sup>6</sup>:</b> L side-lying, R oblique activation 3x10	Strengthening of obliques due to muscle imbalance from concavity of the curve
	<b>Schroth Method<sup>7</sup>:</b> Standing thoracic L side bending stretch w/ R lateral hip shift 3x1'	Reduce pain, decrease curve progression, improve posture
	Multifidus Strengthening b/l <sup>8</sup> 3x15	Improved activation of Multifidus, which is a key lumbar stabilizer

## Postural Assessment

Initial Evaluation	Final Evaluation
<input type="checkbox"/> Increased fwd. head, upper thoracic kyphosis	<input type="checkbox"/> Implementation of shoe lift: pt. stands w/ slight increased BOS
<input type="checkbox"/> R rib hump upon fwd. flexion. Protracted and IR shoulders b/l	<input type="checkbox"/> Increased fwd. head flexed posture
<input type="checkbox"/> Stands w/ an increased BOS	<input type="checkbox"/> Thoracolumbar dextroscoliosis
<input type="checkbox"/> Thoracolumbar dextroscoliosis	<input type="checkbox"/> R thoracic rib hump
<input type="checkbox"/> L lateral hip shift	

## Discussion

- Lumbar stabilization exercises and postural therapy, including the use of components of the Schroth method, allowed patient to get out of bed in the AM with minimal to no pain.
- Pain decreased by half from initial evaluation to discharge.
- Implementation of a shoe-lift resulted in visible and palpable pelvic symmetry, which may benefit standing and walking tolerance.
- Even though there was no improvement in score on the RMLBPOQ, he reported increased function and no pain when getting out of bed in the AM. Seeing no change in the self-reported score on the RMLBPOQ could be attributed to the nature of CLBP.

## References and Acknowledgments

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The author acknowledges Wade Burd MPT, for his role in providing supervision and assistance with patient management and Brian Swanson the PT, D.Sc., for assistance with case report conceptualization.

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