

**STRUCTURAL YOGA THERAPY
RESEARCH PAPER**

SCOLIOSIS IN WOMEN AGE FIFTY

**December 2006
New York**

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Case Study #1 Elysa

1a. Initial Interview

Elysa has been a yoga student for three years at the studio where I teach.

Elysa is age 52, diagnosed with scoliosis at age 13, reached menopause at age 49. She is married and has two adolescent children. Her college age daughter has a slight scoliosis. Elysa never wore a brace for her scoliosis. Elysa attends yoga class three times a week; her practice is growing stronger. At the beginning of this study she did not practice at home.

Elysa is a breast cancer survivor (double mastectomy and implants). She suffered a shattered distal left radius in 1992, and has rather severe arthritis in her feet. With all of this she maintains an impressive and admirable calm, a steady a supportive practice.

Her bone density tests reveal osteoporosis in her left hip; she is taking **Actinol.**

Early on Elysa revealed that her visual perception of her scoliosis was an elevated right hip..... and that's it (a limited perception). This because it was what she saw in the mirror, especially when selecting clothes. It was a revelation to her when she took a rear view gaze in the mirror and saw a left thoracic curve. My sense is that she must have had a former knowledge of the thoracic curve but that knowledge was either forgotten, suppressed and/or misperceived

1b. Physical Assessment

Postural analysis revealed the right hip higher than the left hip, pelvis has a slight posterior tilt, absent lordotic lumbar curve, slightly hyper extended knees.

Her right shoulder is slightly higher; after a few jumps she lands with her right foot more forward. She also has forward head. I observed a left thoracic scoliosis; more muscle mass around the left scapula. The SI test showed the left PSIS to remain stationary while the right PSIS dipped under. Initial hip rotation test showed greater range of motion in outward rotation, especially on the right side.

Measurement with Scoliometer read 12 degree left thoracic curve and a slight lumbar curve to the right, which was more difficult to measure, as I could not feel her lumbar vertebrae.

Table 1 a

Range of Motion	April 2005 Left side	April 2005 Right side
Supine hip straight knee flexion	80	75
Supine hip external rotation	50	35
Supine hip internal rotation	40	35
Neck extension	40	
Neck lateral flexion	35	45
Neck rotation	55	75

Table 1b

Muscle testing	April '05 Left side	April '05 Right side	July '05 Left side	July '05 Right side	Nov. '05 Left side	Nov. '05 Right side
Psoas isolation	2	1.5	3	2.5	5	4/5
Hip Flexors w/abd.rect	3		4.5		5	

Hip extension	1.5	2.5	2.5	3	3	3.5
Quadratus lumborum	2	3	2.5	3	3	4
Erector spinae Upper, middle, lower	2,2,2		2,2,3		3,3,4	
Neck extension	2		3		4	
Neck lateral flexion	2	2	2.5	3.5	3	4
Neck Rotation	2	3	3	4	4	5
Gluteus Maximus	1		1.5		2	

1 c. Summary of Findings

Table 1c

Muscles to be strengthened	Muscles to be released
Psoas, Rectus Femoris, Quadratus Lumborum, Erector Spinae, Teres Major, Latissimus Dorsi	Upper trapezius, SCM, Gentle release of pectoral region

1d. Recommendations

To stabilize the sacroiliac joint, the sacroiliac stabilizer exercise; done on thick cushions to protect feet.

To strengthen hip flexors; dandasana, navasana, downdog; also sitting on edge of massage table w/ 4 lb. weight strapped to ankle, lift thigh off table 6 reps/ 3 sets. The weight work allowed her to really identify/isolate those muscles, allowing for more of a kinesthetic awareness and a mind body connect; "I now know where my hip flexors are."

To strengthen QL; in dandasana hands at heart, "butt walk" forward and then back, covering a distance of about six feet.. Standing in samasthithi, knees soft, tilt hips side to side; tilting on inhale, centering on exhale.

To mobilize and strengthen lower erector spinae; standing in samasthithi, knees soft, tilt pelvic bowl anteriorly and posteriorly. Marjaryasana (cat/cow pose) – cat held longer on inhale.

To strengthen erector spinae muscles; an elongated shalabasana w/ arms out in front – lifting and lowering on the breath alternating resting head side to side.

To strengthen Latissimus dorsi, teres major, and erector spinae; sunbird also sunbird variation - with one leg extended up and back, alternating side to side.

To elongate and de-rotate thoracic scoliosis: Paravritti Trikonasana against the wall; first standing up-right with palms against the wall, then with hands on blocks which surround forward foot (Parsvottanasana), finally hand closest to the wall reaches up the wall.

To strengthen gluteus maximus; bridge pose; dog at hydrant; Warrior #3 hands on wall for support, pulsing extended leg up.

To release upper trapezius and SCM, from the JFS lateral flexion of neck with more attention to releasing left by flexing right.

To very gently release pectoral region and serratus anterior: restorative pose lying supine on a short stack of blankets; buttocks on mat – prop begins at lumbar curve.

1.e. – Summary of Recommendations

I met with Elysa two weeks after the initial exam, and then once a month for a year. Initially she was not diligent with the recommended practice; a bit resistant to adding to her existing classroom practice. But she did ultimately incorporate the recommendations into her regular routine and experienced the results.



Case study #2 Tamara

2A. Initial Interview – April 2005

Tamara is 49; a Psychiatrist. At age 16 she wore the *Milwaukee Brace* for six months (23 hours a day) and hated it. As a result she did grow and inch and a half, but then lost it over time. Her thirteen year old daughter has scoliosis; her older daughter has no scoliosis. Tamara has been practicing yoga for about 18 months; taking about four classes a week.

2B. Physical Assessment

Tamara has a right thoraco-lumbar curve; the scoliometer reading was 15 degrees. After jumping she lands with the left foot just slightly forward. The SI test showed both sides to rise up; same on secondary examination. Tamara has forward head. Tamara is strong and very flexible.

Table 2 a

Range of Motion	April '05 Left side	April '05 Right side
Supine Hip Flexion Straight knee	125	140
Hip External rotation Supine	60	60
prone	75	78
Hip internal rotation Supine	30	30
prone	35	35
Shoulder extension	70	70
Neck flexion	60	
Neck extension	35	
Neck lateral flexion	30	30

Neck rotation	55	70
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Table 2 b

Muscle Testing	April '05 left side	April '05 right side	Sept.'05 left side	Sept.'05 right side	Jan.'06 left side	Jan.'06 right side
Psoas isolation	2.5	2.5	3	3	4	4
Hip flexors/ Abd. rectus	3		4		5	
Neck flexion extension	2.5 3		2.5 4		3 4.5	
Neck lateral flexion	2.5	3	3	3.5	4	5

2 C. Summary of Findings

Strengthen	Release
Hipflexors	
Abdominus rectus	
Lattisimus dorsi	
Clavicularportion of Pectoralis	
Anterior Deltoid	
SCM	Semispinalis capitis
Semispinalis cervicis	SCM

2 D. Recommendations

To strengthen hip flexors: dandasana, down dog, one legged Samasthiti- other leg extended out in front

To strengthen psoas and abdominis rectus: navasana, from JFS - #5 without resting on hands,

To strengthen Semispinalis Cervicis: Matsyasana – allowing gravity to encourage release of semispinalis capitis and upper trapezius; while creating/ calling for strength and support from semispinalis cervicis.

To release semispinalis capitis: gentle Jalandhara Bhandha

To release SCM: from JFS #'s 19, 20 , 21

To elongate and de-rotate thoraco-lumbar scoliosis: Sphinx pose; centered, to the left side and to the right side held longer.

Standing Paravritti Trikonasana-without the forward bend; in other words... standing right hip at wall, right leg forward, twist right- both palms on the wall (or at the ballet barre) careful not to over rotate the hips, progressing through Parsvottanasana to Paravritti Parsvakonasana; same to the left side.

Both participants find this pose particularly helpful; a dependable release.

2. E. Summary of Recommendations

Tamara was very curious and happy to explore and experience. She is an M.D. and a researcher, so the process was familiar and intriguingly unfamiliar at the same time. She was patient with me and herself, diligent in her prescribed practice.

Summary of the two case studies:

Both Elysa and Tamara are devoted to their yoga practice. They both acknowledge the meaningfulness of their steady practice. On the physical level (manomaya kosha) they both “feel better” as a result of a regular practice and definitely notice the change in their bodies when their practice becomes less regular. Tamara acknowledges a greater sense of contentment that comes with her practice (pranamaya kosha); she acknowledges being an anxious type of person; mind always a flutter.

Neither of them had a steady personal (home) practice; limited to studio classes 3-4 times a week. Since working with me on this project they have both initiated a personal practice. For me, that has been a realistic goal in working with Elysa and Tamara; that they come away with specific and personalized tools with which to initiate and enhance their practice at home; understanding that it is a **personal** practice, not meant to mimic group classes. In studio class they now have more confidence and knowledge to direct and modify their practice based on what they feel; even under various and differing directives from other teachers.

As discussed in our SYT Training, SYT for Scoliosis is a two year process and an ongoing commitment; first building strength, then knowledge, balance and release. I feel that I am embarking on this process and encouraging the participants to check in with me a few times a year for a few years.

2.a. Name and description of condition

Taber’s Cyclopedic Medical Dictionary: (on line)

Scoliosis ; A lateral curvature of the spine. It usually consists of two curves, the original abnormal curve and a compensatory curve in the opposite direction.

Cicatricial scoliosis due to the fibrous scar tissue contraction resulting from necrosis.

Congenital scoliosis present at birth, usually the result of defective embryonic development of the spine

Coxitic scoliosis in the lumbar caused by tilting of the pelvis in hip disease

Empyematic scoliosis following empyema and retraction fo one side of the chest

Functional scoliosis caused not by actual spinal deformity, but by another condition such as unequal leg lengths. The curve reduces when the other condition is ameliorated.

Habitat scoliosis due to habitually assumed improper posture or position.

Inflammatory scoliosis due to disease of the vertebrae.

Ischiatic scoliosis due to hip disease.

Myopathic scoliosis due to weakening of the spinal muscles.

Neuropathic scoliosis is a structural scoliosis caused by congenital or acquired neurological disorder.

Ocular scoliosis from tilting of the head because of visual defects or extraocular muscle imbalance.

Osteopathic scoliosis caused by bony deformity of the spine.

Paralytic scoliosis due to paralysis of muscles.

Protective scoliosis is an acute side shifting of the lumbar spine, usually away from the side of pathology. The body is attempting to move a nerve root away from a bulging intervertebral disk herniation.

Rachitic scoliosis due to rickets.

Sciatic scoliosis due to sciatica.

Static scoliosis due to a difference in the length of the legs.

Structural Scoliosis is an irreversible lateral spinal curvature that has a fixed rotation. The vertebral bodies rotate toward the convexity of the curve; the rotation results in a posterior rib hump in the thoracic region on the convex side of the curve. In structural scoliosis, the spine does not straighten when the patient bends.

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3. Ayurvedic Assessment

Scoliosis is said to be a Vatta imbalance; all dis-ease is vatta imbalance. As a general tool, I encourage Ujaii pranayama with all asana; balancing vatta, offering a focus for the senses, and generally expanding the rib cage, (a rib cage with anatomical anomalies) even through poses that challenge broad breath. Both are practicing Kriya breath (inhaling awareness up the length of the spine – exhaling awareness down the length of the spine) to reinforce their sense of Shashumna Nadi and encourage more length and space in the spine. Krama pranayama, buiding pauses/space during inhalation also expands the rib cage, lifts it off the abdomen, and perhaps brings space between the vertebrae.

As I am not a trained Ayurvedic counselor, nor am I proficient in reading the pulse for dosha, I do not feel qualified to offer more specific Ayurvedic assessments.

8. References

Lyons, Brooke with Boachie-Adjei, Oheneba, M.D., Podzius, John, Ph.D., C Podzius, Carla CSW; **Scoliosis – Ascending the Curve**; M. Evans and Company, Inc.; 1999

Browning Miller, Elise; **Yoga for Scoliosis**; Shanti Productions, LLC; 2003

Pullig Schatz, Mary M.D.; **Back Care Basics**, Rodmell Press; 1992

Stiles, Mukunda; **Structural Yoga Therapy**; Samuel Weiser, Inc.; 2000

Lasater, Judith Ph.D., P.T.; **Relax & Renew**, Rodmell Press; 1995

Horosko, Marian; **Scuttling Scoliosis**; reprint from Dance Magazine, February 1991

Internet References

Stiles, Mukunda **Scoliosis Research Paper**; 2005

Kiley, Ellen; **Scoliyogi.com**

Yogaforums.com

srs.com; Scoliosis Research Society

scoliosis.org; National Scoliosis Foundation

Taber's Cyclopedic Medical Dictionary

9. Biography

Marjorie Rosenfield is a senior teacher 500 RYT certified at Yoga Works in Westchester County, New York. She has been teaching since 1998 when the studio was YogaZone, then BeYoga and currently Yoga Works. She is trained in the ISHTA tradition (Integrated Science of Hatha, Tantra and Ayeurveda) developed by Alan Finger. Marjorie also teaches privately and volunteers at Gilda's Club Westchester. Marjorie has trained in Structural Yoga Therapy (SYT) with Mukunda Stiles.