

FUNCTIONAL SCOLIOSIS
or
SUB CLINICAL SPINAL CURVATURE

Structural Yoga Therapy Research Paper

MAKAAN M. BURT, RYT

makaan@estreet.com

Boulder, CO 80304

303 440 8119

Edited by Mukunda Stiles –March '06

Table of Contents

FUNCTIONAL SCOLIOSIS	1
1) Two Case Histories	3
1a) Micky B. Case Study - Initial intake, pain level, self assessment, physical assessment	3
Initial SYT Evaluation: October 2002	4
Physical Assessment - Micky B.	4
Summary of Findings- first two assessments Oct. '02 and Feb.'03	6
Asana Recommendations for Oct. 2002, Feb. 2003, May 2003	6
Specific asana and corresponding muscles:	6
General Recommendations: for Oct. 2002 and Feb. 2003 and May 2003	7
Results of Practice: first two years, Micky B.	7
Final Evaluation: May '05 Micky B.	9
Summary of Findings May '05	9
Specific Asana Recommendations (<i>and corresponding muscles</i>)	9
Results of Practice - Three Years, May '05 Micky B.	11
1b) Lotus K. Case Study - Initial intake, physical assessment, pain level, self-assessment	12
Initial SYT Evaluation - Feb. 05 short session	12
Initial Recommendations	12
Second SYT Assessment May 6, '05	13
Summary of Findings May 2005 Lotus K.	13
Summary of Findings: Feb. and May '05	14
General Recommendations	14
Asana Recommendations	14
Results of Recommendations	14
Third Physical Assessment – October 11 th , '05	15
Asana Recommendations: Final Oct. '05	15
Results of Third Evaluation, Lotus K.	16
2) General Descriptions of Functional Scoliosis:	17
2a) Medical Description; functional scoliosis and sub-clinical spinal curvature. (<i>hereby abbreviated as FS</i>)	17
2b) Gross Body Symptoms	18
2c) Challenges for Functional Scoliosis	18
3) Ayurvedic Assessment	20
3a) Ayurvedic Recommendations	21
4) Common Body Reading of Functional Scoliosis	22
5) Contraindicated Recommendations	23
6) General Recommendations –Three Stages	23
6a) Finding What Works - Foundational Strengthening, Stage 1	23
6b) Realign Body, Deepen Program and Lifestyle Changes- Stage 2	25
6c) Maintenance of Underlying Issues -Stage 3	25
Conclusion	27
7) QUESTION AND ANSWERS ABOUT SCOLIOSIS	27
8) REFERENCES	32
9) APPENDIX	33
10) BIOGRAPHY	

Introduction

This paper is an examination of one type of scoliosis: functional, also known as sub-clinical. This discussion will be from a structural yoga therapy and Ayurvedic perspective, with supporting medical theories.

The two case histories (i.e., Mickey and Lotus) are first, as these are of interest to the students of structural yoga therapy. **Those readers without much knowledge of scoliosis or anatomy may want to start with the general description section first, and then return to the case histories.**

The two case studies document how a structural yoga diagnosis coupled with a regular practice, and accompanied by Ayurvedic recommendations can improve quality of life, relieve pain and reduce a chronic spinal curve.

It is the purpose of this paper to show how an application of yoga exercises, meditation and or ayurvedic philosophy can successfully treat functional scoliosis. In addition, the research presented will also document the qualitative, as well as quantitative impact of alternative ayurvedic medicine in Case 1a. Both clients showed improvement with a motivated daily practice. Both were given periodic intakes and anatomical evaluations, and given yoga recommendations to address their particular issues. The success of this regimen will be documented.

Much supporting material for these theories can be found after the case histories in Section 2-9.

1) Two Case Histories

1a) Micky B. Case Study - Initial intake, pain level, self assessment, physical assessment

Micky B. is a 55-year-old yoga teacher, care giver, potter, ayurvedic practitioner and handyman. He is a busy sensual earthy type with many hobbies such as music making, dancing and outdoor sports. His ayurvedic constitution is kapha 3, vata 2, pitta 1.

Functional or habit scoliosis was first noticed by Elise Miller, scoliosis yoga teacher, in September of 2000 (#3 ref.). This was physically caused from 25 years of using a potter's wheel professionally. The wheel always turned counter clockwise which overdeveloped the left thoracic musculature, the muscles that twist the thoracic spine and shoulders counterclockwise. This twist is complemented with an opposite curve in the lumbar but with smaller curve. The curves were complicated by an enlarged liver caused by hepatitis at age 32.

Managing muscular pain throughout the body has been a constant with Micky for 25 years. He suffers with low back and hip pain, which flips from one side to the other. For six years he battled with sciatica off and on and then constant sacral pain. Neck, shoulder and low back tightness are a barometer of stress level, especially emotional. Serious inflammation episodes happen at a pain level of eight, two or three times a year. These follow a period of emotional imbalance due to issues of money scarcity and relationship stress.

There is a lack of grounded awareness in Micky, which bring episodes of rash actions, depression and procrastination. He does not use all of his veteran yogic experience to bring daily serenity. He is attached, like a typical sensual person, to possessing more in life. He is periodically over-whelmed by financial issues and chronic pain. He falls into depression for a day or two about five times a year. This is discussed as vata depression in Section 3a, on Ayurveda.

Micky has had an off-and-on meditation practice for thirty-odd years. He does a 20–30 minute asana practice following the 20-30 min. meditation most mornings. Sometimes he has time for an hour or more of asanas once or twice a week. In addition Micky teaches three therapeutic classes for elders each week. He teaches two Vinyasa classes a week, which periodically cause strains from over stretching. He follows a low fat ayurvedic diet and does a seasonal cleanses.

Initial SYT Evaluation: October 2002

Micky has a mild right thoracic curve with a long complimentary lumbar curve to the left. In 2002 the thoracic curve measured 5-6 degrees and the lumbar curve measured 3 degrees.

Micky's hip and sacral muscle pain is irritated by long sitting, heavy lifting, *intense stretching* or twisting. Neck and head pain is irritated by stress. Both are helped by resting, especially sitz-bathing with Epson salt and walks.

Periodic hamstring and hip muscle strained repeatedly (12 x's approx.) in asana or lifting. Micky's shoulder clicks in rotation and muscle is painful under scapula.

Micky has noticeable posture difference between left and right hip rotators and abductors and adductors.

Physical Assessment - Micky B.

Oct. '02 Spinal curve; thorax right 6 degrees, lumbar left 2 degrees, measured with scoliometer. S/I test: uneven

Action	October, 02		February, '03		
	ROM	MT	ROM	MT	
	left right	left	Left right		left
	right		right		
Knee flexion	145 145 2	4	145 145 2		4
Hip int. rotation supine	33 33 1	3	25 20 1		3
Hip ext. rotation supine	50 50 2	2	52 56 2		3
Hip int. rotation prone	20 25 test	no	14 26 pain		2
Hip extension	no test 1	5	no test 0.5		4
Shoulder. ext. rot	95 80 2	4	50 40 3		4
Shoulder flexion	167 166	4	169 166		4

MMBurt 2005

	2		2		
Shoulder extension	60 55	2	50 50	3	
	3		3		
Hip adduction	32 32		28 33	2.5	
			1		
Hip abduction	no test	no	30 30	5	
	test		5		

Summary of Findings- first two assessments Oct. '02 and Feb.'03

	Strengthen (K)	Stretch (P)	Release (V)
	Lt., Rt .shoulder ext	Lt. Rt shoulder extension	mid trapezius
		Lft/rt shoulder flexion	
	*Lt ,Rt hip int. rotation		*Rt hip int. rotation
		Lt. rt. Psoas	Lt. rt. psoas
	Rt. hip abductors	Rt. Hip abductors	
	Rt. sartorius	Rt. Sartorius	
	Lt. rt. deep ext Hip rotator		
	Lt. rt. hamstrings		
	Lt. rt. mid trapezius		

Asana Recommendations for Oct. 2002, Feb. 2003, May 2003

Specific asana and corresponding muscles:

Spinal twist with legs to left for derotation of spinal curve in thoracic, hold 6-8 breaths.

SI stabilizer exercise for uneven Sacroiliac test and pain there.

Runner stretch for psoas and hamstrings stretch.

Rolling bridge for mid trapezius and deltoids strength, 3-6 dynamic rises on inhale.

Face of light, cow, for hip adductor stretching, rocking fore and aft with 6-10 breaths.

Asymmetrical locust for erector spinae and hamstring strength.

Asymmetrical cat cow for releasing spine and hip rotators and psoas.

Free heel warrior and side of hip stretch for toning hip rotators, sartorius and hamstrings.

Wall dog and down dog with breath pulse for stretching shoulder extensors.

Staff with alternate foot lift for sartorius strength; 6-8 reps with inhale lift.

General Recommendations: for Oct. 2002 and Feb. 2003 and May 2003

Micky B.

Asana: Micky needs to work on careful strengthening and gentle stretching. He needs to strengthen hip flexors and extensors, also hamstrings and internal rotators. In the shoulder he needs to strengthen upper and lower traps and deltoids. Stretching is needed in the inner and outer thighs and pectorals group. Micky needs slow JFS series and vinyasas to relieve stress and strain.

General: It is recommended for Micky to increase his meditation practice to include chants, pranayamas and prayers, and to be more regular with it. For unlocking kapha attachments, devotional chanting was recommended. Recommended Micky seeing his many activities of life from under the umbrella of a yogic perspective. Regular daily sadhana, especially meditation and devotion is needed to relieve attachments and stress. Regularity in lifestyle will strengthen his sensibility muscle or grounded thinking. Respecting implied and agreed upon boundaries are an issue for Micky. Therefore the sutra for developing asteya (non-misappropriation) was given:

“To one established in non-stealing, all wealth comes.” (#9, page 133, sutra II, 37)

Kapalabhati pranayama, bellows breath, was given for clearing kapha and calming the mind. Periodic hands-on bodywork to release hip muscles was recommended.

Results of Practice: first two years, Micky B.

Micky studied R. Freeman's Ashtanga Vinyasa periodically for 18 years. In the first year of practicing structural yoga therapy, he continued to practice his Ashtanga Vinyasa. He eventually realized this practice was too goal oriented and kept causing strains. At least 12 times, gluteal and hamstring muscles were strained. These each resulted in 1-3 week set back in asana practice. During this 2002 year Micky was studying Ayurveda and did six weeks of Pancha karma cleansing treatments. Of his many body aches, the one constant for years was in his lower coccyx, or tailbone. After the final medicated enema treatment, the lower coccyx pain left, and has not returned. The ayurvedic medicated oil was absorbed by the colon and healed the stagnant vata in the root area.

The upper sacral pain was helped by the SI joint stabilizer and hip related joint freeing series. After two months there was 60% relief in upper hips and after six months the pain was gone.

Micky reports enjoying painless forward bends, when in the past it was painful. Stretching hamstrings and gluteal muscles remains problematic. Shoulder pain is gone and Micky has more ROM in shoulder flexion. He also has more external rotation in hips and strength in back and hips.

As Micky's sadhana has become deeper and more regular, he has allowed himself to release the burdening of his worldly attachments and depression. Through the study of the sutra about non-misappropriation Micky recognizes the many faceted jewels he carries within. For instance the loves of nature, deepened by his many retreats in the wilderness thrive in his heart providing positive memories and strong feelings.

Final Evaluation: May '05 Micky B.

Spinal curve: thoracic to right 3 degrees, lumbar left 1 degree, both *half the initial test* in '02, In Dec. '05 it test 0 lumbar degrees repeatedly.

Supine scoliometer test; rib rotation 2- 4 degrees apex at T-4 rib

S/I test; down on left, up on right, same as always.

Bowed legs; 2 inch width, was 3 inches in '02

Action	May '05			
	ROM degrees		MT	
	left	right	left	right
Hip int. rotation supine	26	35	3	5
Hip int. rotation prone	26	32	3	5
Hip extension	no test		5	1
Psoas flex	NA		3.5	5
Shoulder flexion	180	180	4	4
Shoulder extension	55	55	2	3
Horizontal shoulder ext. Rot.	72	70	no test	
Hip adduction	30	32	1	4
Hip abduction	30	30	5	5

Summary of Findings May '05

	Strengthen (K)	Stretch (P)	Release (V)
	Lt., Rt .shoulder ext	Lt. Rt shoulder extensio	
	Gluteus maximus	Lt. rt. Shoulder ext. rot.	
	Rt. hip abduction	*Lt ,Rt hip int. rotation	
	Lt. Sartorius		
	Rt. hamstring		
	SCM neck rotation		

Specific Asana Recommendations (and corresponding muscles)

Spinal twist with legs to left only for spinal curve in thoracic ribs, open right upper lung and lower the scapula.

SI stabilizer exercise for uneven Sacroiliac.

Runner stretch for psoas and hip flexors. Rolling bridge and no hand cobra for mid trapezius and deltoids.

Face of light or cow for hip abductor stretching

Asymmetrical locust for erector spinae and hamstring strength

MMBurt 2005

Bound angle with leg lifts for sartorius strength. Hip is flexed, externally rotated while knee is in flexion.

JFS Series to release tension and pain.

Results of Practice - Three Years, May '05 Micky B.

Micky shows improvement in Spinal curve; half of initial measurement, one year ago. Still occasionally straining hip muscles, but less often and recovering faster. **This last year there has not been an episode of intense pain, only pain at moderate level.** Devotional sadhana has helped with depression and clarity of mind. Kirtan chanting has brought deep devotion to his sadhana. Most of the time, a confident peaceful perspective permeates Micky's life.

During the fall of 2005 Micky again used ayurvedic herbs and cleansing techniques for his weekly muscle strains. After a month of the custom herbs the musculature has been recovering from exercise very fast. The hamstrings and gluteal hip pain has not come back from November to January and the swelling under the right knee has reduced by 90%.

Asana practice strong and steady with strength and ability increasing monthly. Micky has more endurance in both physical and mental activities. Regular Joint freeing series 4-5 times a week has kept him away from the chiropractor. By trial and error as well as recommendations Micky has learned to crack his back into alignment. He uses spinal twists, with legs to left as recommended, and a foam massage roller. He also uses ayurvedic marma point massage to relieve stiff muscles due to his work as a stone mason.

As Micky's sadhana has become deeper and more regular, he has allowed himself to release the burdening of his worldly attachments and depression. Through the study of the sutra about non-misappropriation Micky recognizes the many faceted jewels he carries within are priceless. For instance the love of nature, deepened by his many retreats in the wilderness live in his heart as memories and feelings of ecstasy.

End Case Study 1a.

1b) Lotus K. Case Study - Initial intake, physical assessment, pain level, self-assessment

Lotus is a tall, spunky, 60 year old retired woman who came to me for structural help after being in my therapeutic class for a few months. She has had mild curvature since she was a teenager. She has a long time Buddhist meditation practice, which includes some Buddhist asanas and many prostrations. She complains of long time pain in her mid back on right side. She has a long time condition of atrial fibrillation or irregular heart rhythm since in her 20's. She is motivated because she has the time and drives 40 minutes to my classes twice a week. She is a vata, pitta women who is determined to enjoy life in retirement. She is motivated to straighten out her back and build core strength to use in activities like gardening, which currently she can only do for short stints.

She first noticed her spinal curve at about age 35 after her daughter was walking. She carried her baby mostly on her left side because she is right-handed. However she has a history of injury to her right foot which most likely caused her misalignment. At age 18 she broke her right foot and had surgery on her right big toe. She did not put weight on it for 3 months. There is visible atrophy in the right calf. The right big toe and knuckle is still visibly flatter than the left and both feet have flattened arches. It appears the surgery did not go well or never healed completely.

This is clearly a case of sub clinical spinal curvature caused by structural and/or functional causes. Lotus's curve was caused by an adolescent injury and surgery to the right foot. Second cause was carrying her daughter mostly on left side.

Initial SYT Evaluation - Feb. 05 short session

Her right hip is higher and she has flat feet. She has slumped kyphosis due to weak shoulder external rotators and abdominal muscles. Restricted neck rotation and right shoulder forward. . Scoliometer tested her thorax curve at 7 degrees and her lumbar at 9 degrees. Her SI Test was uneven, going down on left side. She is generally out of shape with 11 weak muscles. She is motivated and has been regular with class.

Initial Recommendations

To start with, she was mostly given asanas to strengthen her core torso.
Asymmetrical Locust for weak hip extensors, erector spinae and quads.
Four part Sunbird for strengthening of hip external rotators and hamstring muscles.

Boat and up-stretched legs for strengthening abdominal.

Side of hip pose for derotation of spine

Palm Tree pose for flat feet.

Support for continuation of her Buddhist meditation practice.

Second SYT Assessment May 6, '05

She reported in May that the home yoga practice and JFS classes, even though sporadic, has *eliminated most of her back pain!* Scoliometer tested her thorax curve at 7 degrees and her lumbar at 9 degrees, same as in February readings. Her SI Test was still uneven, going down on left side.

	February, 2004				May, 2005			
Action	ROM		MT		ROM		MT	
Supine:	Left	right	left	right	Left	right	left	right
External Hip rotation	38	36*	2	3	36	36	2	4
	February, 2004 (cont.)				May, 2005 (cont.)			
Action Supine	ROM lt. RT.		MT lt, rt.		ROM lt., rt.		MT lt.	
Bent knee Hip flexion	127	120			110	115	1*	
Dorsiflexion	no test		2		14	19	no test	
Plantar flexion	no test		2		68	69*	2	2
Knee flexion	134	139			140	140	2	3
Hip adduction	50	34			45	54	2	4
Prone:	ROM		MT		ROM		MT	
Hip extension	18	16			20	19		
Spinal flexion			no test				- 1.5 -	
Psoas isolation			no test				3	
Neck rotation	70	48			65	55		
Shoulder Abd. hor. Ext.	23	28			35	45	4	
Shoulder int. rotation	57	57			55	55*		
Shoulder ext. rotation	100	100			100	100		

Summary of Findings May 2005 Lotus K.

Strengthen (K)	Stretch (P)	Release (V)
Lt., rt. plantar flexion	dorsiflexion	
Lt, .rt. knee flexion	quadriceps	Lt. vastus lateralis
Lf., rt. hip flexion	Lt., rt. hip flexion	Lt., rt. hip flexion
Lt. rt. hip extension		Spinal flexion
Spinal flexion		
Psoas isolation		

Summary of Findings: Feb. and May '05

In this first stage of yoga therapy practice, Lotus needs to concentrate on strengthening her core muscles of belly, back and hips. Lotus tested weak on 8 different muscle groups, but was told to only concentrate on belly, back and hip strengthening (core strength). She tests tight in the internal hip rotation, hip flexion and knee flexion. She is weak in the plantar flexion of the feet. *Since she reported much less pain since starting yoga, she is motivated.* Once or twice a week she comes to my JFS class, which she enjoys. I do the side of hip pose just for her.

General Recommendations

She was supported in continuing her Buddhist sadhana and regular JFS class attendance.

Asana Recommendations

Palm Tree Vinyasa for balancing vata and warming up.

Palm tree pose and Arching foot exercise held 3-6 breaths for weak plantar flexion.

Four part sunbird at fire hydrant Vinyasa for strength of hip external rotation and extension,

Asymmetric locust for erector spinae and hamstrings, 2 reps each side.

- * Up-stretched legs for abdominal strength, held 3-5 breaths.

Boat for psoas and abdominal strength, held 3-5 breaths.

Reclining abdominal twist with legs to right more times for de-rotation of spine.

Side of hip pose for de-rotation spinal curve, twice on week side; use wall for stability.

Do right leg, left leg forward more times.

Sacro-iliac Stabilizer pose for sacrum stability.

Cobra for strengthening upper trapezius.

Results of Recommendations

Lotus has lots of motivation and likes challenges. She is getting stronger and has reported significantly less back pain more endurance. She is creative about doing variations of poses that are difficult for her. She paces herself well. Coming to class regularly has given her the first hand knowledge of how to do each pose and Vinyasa within a well-rounded session.

Third Physical Assessment – October 11th, '05

Lotus gets lots of exercise every day and does yoga 3-4 times a week. She has bouts of allergy sickness and family crisis that set her back a week or two each episode. She has kept up with her yoga all of these 8 months and is proud of herself. She said it has made gardening much easier and her back does not hurt like it used to after gardening.

Dorsiflexion tested the same but plantar flexion was looser.
Abduction in horizontal shoulder extension is more flexible.
Internal shoulder rotation is now normal ROM, where as before it was very tight.
Left vastus lateralis is still cramping during this test and the last.
Left abdominals and hip flexors are weak.

Oct. 2005 Action:	ROM		MT	
	Left	right	left	right
Dorsiflexion	13	13	4	4
Plantar flexion	62	54	4	4
Hip ext. rotation	40	36	3	4
Hip int. rotation	40	31	1	0
Bent knee hip flexion	139	139	1	4
Hip adduction	No	test	2	3
Hip extension	20	19	no test	
Shoulder Abd. hor. extension	26	26	4	4
Shoulder int. rotation	79	80 *	4	3
Shoulder. Ext. rotation	90	106	3	4

Summary of Findings October, 2005

Strength (K)	Stretch (P)	Release (K)
Left Gluteus max.	dorsiflexion	Lt. Vastus lateralis
Rt hip abductors	Spinal flexion	
Lt hip flexors	Spinal extension	
Lt. hip int. rotation	Rt.* Lt. Hip rotation	
Lt. hip adduction		

Asana Recommendations: Final Oct. '05

S.I. Stabilizer for loosening and balancing hips imbalance.

Cat-Cow for loosening spine and strengthening abdominals and arms.

4-part sunbird at fire hydrant for hamstring and erector spinae strength.

Boat Pose for hip flexor toning and coordination.

Asymmetrical child's pose for de-rotation of thoracic spine. Walking both outstretched arms to one side, feeling the stretch in the side ribs and shoulders. Repeat 2-3 times with arms on convex side of spinal curve: right usually.

Flowing squat pose for strengthening quads and deltoids. Moving with breath from mountain to squat to forward bend and back to mountain (with arms straight up).

Standing mountain for conscious alignment of feet and torso.

Forward bends and sitting twists for low back stretching and cleansing belly organs.

Squats with heel lift for plantarflexion strengthening.

Palm Tree pose held high, 4-6 breaths, for building foot arch strength.

Complete Palm Tree flow sequence for warming up torso and vata balance.

Side of hip pose (more with right hand forward) for de-rotation of spine.

Reclining abdominal twist first bent then straight, for spinal de-rotation. Legs to left more.

Results of Third Evaluation, Lotus K.

Lotus is a stable person because of her long time meditation practice. For her pain, she just need a regular yoga class and home practice to keep her loose and toned. She is motivated and accomplished a regular home practice within a few weeks after the 2nd session. Some of the asanas were difficult for her because she is out of shape. She has applied herself and can do them all now. She likes the challenge.

Because of her decades of meditation practice, she knows development is slow in regards to her developing the strength and fitness she has as a goal.

Her core strengthening will take time, but I have faith she will continue because she feels the improvement in her body. She has been doing yoga a year and a private practice for ten months. She is getting stronger and is almost ready for stage two which is described in the three stages of general recommendations. She is progressing slowly only because of her periodic sickness and her age, 60years.

2) General Descriptions of Functional Scoliosis:

2a) Medical Description; functional scoliosis and sub-clinical spinal curvature. (Hereby abbreviated as FS)

Other names for this condition:

Mild Scoliosis, Habit Scoliosis and Non structural Scoliosis.

Habit scoliosis, a type of FS, is due to habitual standing or movement activity that has an over-riding asymmetrical effect on the musculature due to a sport, vocation or home activity. Examples; a mother always carrying her infant on one side, a one sided sport like tennis, baseball or bowling. People can develop this imbalance just by always standing mostly on one foot because of an unconscious psychological habit. Most FS cases have a cause like this but it is sometimes lost to the memory of childhood.

General definitions of scoliosis:

The term scoliosis is used to define a physical body in which an abnormal curvature of the spine is present. The spine moves laterally, *forming an S or C curve and rotates at the same time*. Scoliosis is a common problem affecting 2% of women and 0.5% of men in the general population. There are many causes of scoliosis. These include congenital deformities of the spine, neuromuscular problems, structural problems such as limb length inequality, intraspinal anomalies, etc. Scoliosis is a Latin word meaning crooked. (*William's and Wilkin's, 1997, #12*) There are many extreme curvatures that have unknown cause, these are called idiopathic scoliosis.

“Spinal curvatures must be differentiated as *structural and or functional* (nonstructural). In a structural curve a segment of the spine has a fixed curve that does not correct upon lateral bending or in the supine position. *Functional* curves may be transient or persistent, but have no structural changes. These curves correct or overcorrect, and this can be observed in x-rays of patients in a side bending or prone position.” (Cailliet #10, page24)

The degree of spinal curvature for FS is less than is considered by Doctors to be dangerous unless it progresses to a degree greater than 12 on a Scoliometer and 40 in medical ex-rays. Doctors consider other factors like age and bone maturity in making recommendations for bracing or surgery.

FS is generally considered a muscular imbalance and therefore it is easier to balance with exercises than structural scoliosis. Sub clinical Scoliosis can be either functional or structural. FS will be caused generally by the function of a predominantly one-sided activity.

A functional curve will straighten when patient bends forward and is not caused by genetic asymmetric growth of the vertebral bones. FS are always a mild curve and may not progress much after teen-age years. Functional curves and their symptoms respond well to exercise, yoga and other recommendations, which I will discuss later. If a person is active and uses the correct recommendations, he can straighten the curve about 1/3 or more. (Mukunda #2) Pain associated with this condition will also be discussed in depth under Challenges and Ayurvedic Assessment.

FS is the most common scoliosis according to Elise B. Miller. (Miller #3, page1) E. Miller specializes in yoga for scoliosis and has reduced her own curve “from 49 degrees to the mid 30 degree range”.

Both Micky and Lotus have functional spinal curves. Micky’s was caused by throwing pots on a potters wheel for decades and complicated by an enlarged liver caused by hepatitis at age 32.

Lotus’s curve was caused by an adolescent injury and surgery to the right foot. Second cause was carrying her daughter mostly on left side.

2b) Gross Body Symptoms

Sometimes noticeable crooked spine
Back neck and shoulder pain in some cases, more as age progresses
Low back pain in 50% of cases- same as general population.
Respiratory discomfort, diminished performance
Upper body curves have trouble sleeping
Lower body curves have constipation and low back pain.
Pain is not related to shape
Often people have a emotional or mental imbalance as will be discussed under Ayurvedic assessment
Difficulty turning to the right – 90%
Neck stresses and pain to levator scapula, upper traps.
Pain and aches at origin of insertions of curve (for thoracic T4-T10)
Visible Postural anomalies:
Shoulder height uneven
One scapula more prominent
Chest prominent on one side
Back muscles prominent on one side tending to be in small or slender bodies
(From Mukunda Stiles)

The 4 major curve patterns of scoliosis (Schomner #1, page 20)

1. Right thoracic curve
90% of thoracic curves are to the right. About 6 vertebrae are involved; T5-T12
2. Thoraco-lumbar curve
Lower curve extending into the lumbar, 80% to the left, 6-8 vertebrae involved; T6-L1
3. Lumbar curve...
70% are to the left, include 5 vertebrae involved; T11-L3, 4
4. S curve...Also called right thoracic-left lumbar.
90% to the right in the thoracic, left in the, 10% in reverse.

In Lotus’s case there a typical thoraco right curve and lumbar left curve, like #2 above. In Micky’s case there is also a thoraco-lumbar curve with cervical curve as well. Lumbar and cervical curves are to left, and thoraco is to the right.

2c) Challenges for Functional Scoliosis

“Since these Scoliotic folk tend to be stressed out they have trouble with motivation and need lots of emotional support. Professional follow up is crucial. Regular exercise is crucial. Personality wise, they are not straight on, they are round about they’re issues, they’re perception is not level. There is not good body rhythm, for

instance periods of irritability and emotional sensitivity” (#Mukunda, 2003).

Typical case in point, a mother who always carried her baby on one side; Perception from the 2nd and 3rd kosha are not level here. What makes her afraid to carry the baby on both sides? Does the un-held side hold insecurity? There is often an emotional or psychological reason.

In the case of curvatures being caused by athletic activity like tennis or bowling or a vocational activity like pottery, the curve is easier to diminish once a person has completed the activity that is causing the curve. Curves can be improved by 30- 50% with motivated clients and students of yoga who apply diligence over few years (Mukunda #2, page 99).

Pain is not necessarily part of spinal curve cases, if there is balance and vitality. Only 50% of scoliosis folks complain of it, same as the general population. Pain is common with the clients I worked with, so I will discuss it from two points of view. From a physiology perspective I will quote Pete Egoscue (#7. Page 138):

“Scoliosis can be treated with a program of *balanced muscular stimulation*. What happens on the right side must also take place on the left. Form follows function. Reintroduce proper design function and the form – the structure – isn’t a problem. Back pain, no matter what it is called, is most often a symptom of a breakdown of form that has been generated by a loss of function. The precipitating event can be hormones or happenstance, a new job, a change in physical routine, or an illness, perhaps. Whatever the contributing factors, a pain treatment that starts with function will rarely require you to go after the body’s form.”

In opposition to Pete’s view are the pain relieving programs of John Sarno M. D.

“Scoliosis is often blamed for pain in adults. I have *not found* this to be the case. In many case histories involving scoliosis I have found the patient has *Tension Myositis Syndrome* (TMS). Through treatment of this TMS, which is a psychological Treatment, the pain is relieved, not to come back. Nothing in my treatment changes the spinal curve. TMS is a psychological syndrome when the mind and nerves distract attention, which is a mechanism for allowing the individual to avoid feeling or dealing with undesirable unconscious emotions by depriving a weak part of the musculature from getting enough oxygen. The oxygen deprivation causes the pain physically but the underling cause is the emotional stress, frustration and/or fear, often unconscious. My patients are able to stop the process simply by learning about it” (#4 –pages 112 & 144).

John Sarno’s approach is similar to the yogic approach of svadhyaya, from Patanjali Yoga Sutra Niyamas: using study of truth as a tool for liberation.

This authors` personal experience is that both perspectives are valid and using them both helps heal the pain on different levels. The physical and psychological treatments can go hand in hand. Micky B. used the psychological approach of Dr. Sarno years before practicing SYT and it relieved about 50% of his pain in a few weeks.

3) Ayurvedic Assessment

From the ayurvedic view, scoliosis is imbalanced vata or stress rising and becoming stagnant. Udana prana, upward moving breath energy, is not balanced or it is weak. As a scoliotic person's torso develops, there is a lateral or sideways development of the musculature (mansa dhatu) and bones (asthi dhatu) that is not symmetrical growth. Musculature development often has trouble keeping up with the upward growth of bones or visa versa.

Udana prana rises up and is turned sideways by one stressful circumstance or another.

Spinal curvy folks are mostly tall or slight build, indicating predominant vata or wind constitution. In most of the cases of mild spinal curvature *that I worked with*, issues with depression and back pain exist. As in the body, so in the mind as well.

Sarasvati Buhman, describes vata constitution as follows,

"In vata type depression the accompanying symptoms are those of fear, overwhelm to stimuli, helplessness, poor memory, difficulty completing tasks, anxiety, insecurity, nervousness and insomnia. It becomes difficult to stop replaying memories of emotional pain (samskaras)" (#11 page 6).

In all but one of the 5 cases I have talked with, some of these vata imbalances exist. In many case there is an avoidance of negative emotions like fear and anger. These often develop as samskaras or emotional wounds. This avoidance tends to bind them, and it becomes visible in there posture. This avoidance also tends to freeze their motivation for treatment. They need nurturing guidance from their circle of support to empower their treatment and development.

There is often a cyclical syndrome with imbalanced vata conditions. This cycle of imbalanced action or 'Karma of the Mind' as described below, is from Rama Jyoti Vernon. The pain and confusion is just the tip of the iceberg and this syndrome of experiences often lies underneath in the unconscious. These emotional wounds often want to be listened to, as they are inner children with desire or eversion. This unconscious fear, anger and frustration can cause physical pain by sending messages of stress to the weak muscles, which cause a deprivation of prana. The many practices of yogic sadhana can break this cycle and relieve the pain by bringing faith and prana back to a persons Koshas (five bodies).

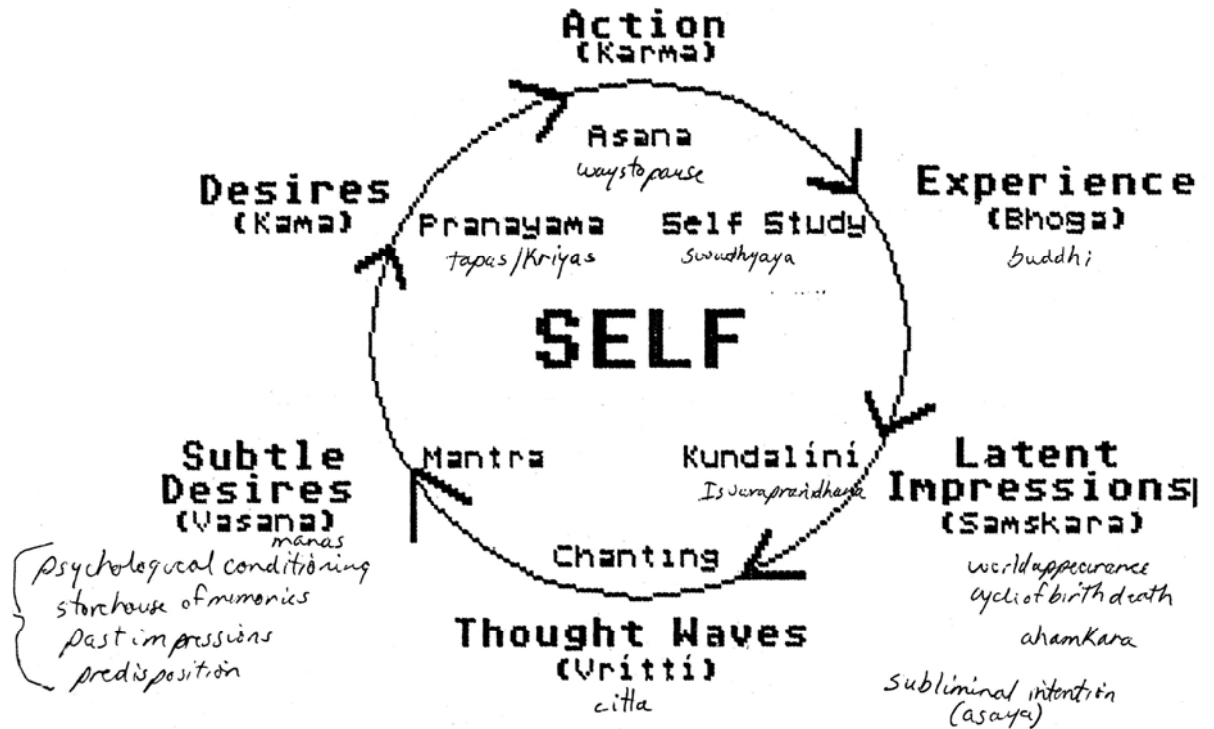
Using Micky B's case as an example:

Micky has motivation/pain/failure syndromes. This is often heightened by physical pain which freezes his ability to work long hours and in turn make it difficult to pay bills which is stressful and causes emotional failure. This freezes his motivation to practice yoga which can erase the pain and stress if he just finds the time. When depressed it is difficult to do any activity but rest. Sound familiar? Study of truth (svadhyaya) or meditation (dhyana) or devotional music (kirtan) can break the cycle by reconnecting the mind with its source of peace.

THE KARMA OF THE MIND;

"The Cycle of Mind" from Rama Jyoti Vernon updated by Mukunda Stiles

CYCLE OF THE MIND



3a) Ayurvedic Recommendations

As in all vata (wind) imbalances, the important theme for treatment is to bring *tranquility* to the body/mind through nourishing actions done with *regularity*. A mentor, coach or teacher is invaluable not only with recommendations, but also with motivational tools and emotional support. In all my cases *motivation* has been an issue and the clients have welcomed little reminders and check-in calls. Activities that bring peace to the mind give the heart faith and hope which unwind a restless mind.

In yoga asana the best *vata balancing style* is gentle flow Vinyasa like shivananda, Viniyoga or Kripalu. Short asana sequences at home combined with some pranayamas or chants and meditations can be empowering. Slow pulsing movements, following the breath, allow for a dynamic build up of prana and a balancing of vata by calming the nerves and mind. The palm tree Vinyasa seems to be tailor made for those with spinal curve. This gentle series elongates, derotate, laterally flexes, and strengthens the spine. Parsvottanasana (side of hip stretch) and trikonasana (triangle) are also recommended poses for FS. Many poses can help as long as they are done smoothly, regularly and with comfort.

Ayurveda recommends many tools to elevate and balance Vata dosha;

1. A diet of nurturing warm, soupy, oily foods.
2. Herbs for the mind like Gota Kola, Brahmi, honey, ghee, shankapushpi, lotus, bala, Ashwaganda, jatamansi and Bala oil for pain liniment.

3. Ayurvedic treatments of oil massage, especially shirodhara (medicated oil stream on forehead)
4. Yogic practices of flowing asana and pranayama (Bramari and Ujjaye), and most important, meditation.

Vata provoked folks often have trouble sitting still or meditating, but that is what they need most. Starting with contemplative activities like tai chi, solo hikes or a ritual bath can be a start. The important thing is they find ways to peacefully nourish themselves regularly. Setting a goal of intending to do some type of yoga or sadhana helps to steer them toward the energy of contemplative experiences.

To quote Patanjali according to Swami Satchidananda; *an interpretation of Sutra I-39*

“You can meditate on anything that will elevate you” (#9 – Page 62).

This recommendation, repeated gently over time, is good advice for spinal curvature folks I have seen. As vata-provoked folks experience the timeless value of meditative activities they will hopefully become regular about it, because they see the value of it.

4) Common Body Reading of Functional Scoliosis

Functional scoliosis and sub clinical scoliosis clients have muscular and range of motion imbalances asymmetrically. They will often have a weak psoas or quadratus lumborum on opposite sides. They often have weak hip muscles and asymmetric ROM readings side to side. The client's spinal twist and lateral curve are reflected in asymmetric strengths and weaknesses. They will tend to be weak on left and tend to be tight on right. However these tendencies need to be assessed individually.

In postural evaluations you may see the following,
high shoulder or arm,
forward region of one rib cage,
one protruding scapula,
Uneven hips, which can show up as uneven leg length.

In evaluations a therapist can see more by having the client do a gradual slow forward bend, stopping each few inches, while watching from behind. Here the spine can be observed rotating or staying even within each section of the spine. A scoliometer can be used to test the degrees of the twist and curve. This data can then be compared to later readings to mark the improvement and to motivate the client. (Mukunda, lecture)

A functional curve usually evens out at some level of forward bend. A structural curve (idiopathic) does not even out with forward bend.

A yoga therapist or teacher may encounter a scoliosis that has never been diagnosed by a doctor and is progressing in an adult. This is unusual and called adult idiopathic scoliosis, if it is beyond 12 degrees on the scoliometer or 33 degrees by ex-ray. In this case, especially if the curve is progressing, a yoga therapist would want *to motivate the client to see a doctor about it!*

In Lumbar curves to the left; (most common, 90%)
Quadratus lumborum on the left is weak, right may be tight. Lateral bending will show this because it is more difficult to bend to one side. There is weakness of the right gluteus medius and hamstrings on the right side more than the left.

Psoas tends to be weak on both sides but one side is weaker, usually the left, and there are individual compensations.

In thoracic curves weakness shows up in the; deltoids, lower and mid trapezius, pectoralis group and latissimus dorsi over time.

These tendencies need to be assessed individually.

5) Contraindicated Yoga and Exercises

1. If it hurts, don't do it.
2. If it does not hurt, do not try and fix it.
3. Minimize forward bends; they are not that helpful except Parsvottanasana.
4. Minimize the poses that accent the curves like seated twists.
5. There is a tendency to overdo poses on the side that needs it.
6. First elongate then move into pose, or the spine might not like it.
7. Do not do a tamasic practice; meaning lazy, slow, unaware or not fluid.

6) General Recommendations –Three Stages

1. Therapeutic and free of pain (Finding what works)
2. Realign body, deepen program, lifestyle changes
3. Maintenance of underlying issues at root of situation

6a) Finding What Works - Foundational Strengthening, Stage 1

My approach in working with clients with mild scoliosis is three fold; initial relief of pain, helping them achieve their physical goals and emotional support. As I have stated in the challenges in Section 2c, there is often pain that has an emotional cause but is blamed on the spinal curve. One must be very careful about leading a client into areas of insecurity. If emotional causes are suspected then a good book on the subject like John Sarno's can be given. Starting with the physical work is safer and builds trust.

In doing the exam, look at all the muscles foundational to the spine.

1. All knee/foot muscles
2. Hip muscles
3. Lower back, torso
4. Shoulder/arm for thoracic curve
5. Neck hyperflexibility
(Mukunda lecture)

Do exam but do not tell them all you uncovered as it can be overwhelming. Give simple short recommendations at first. I have listed many beneficial ones below, but that is too many. In the beginning, narrow the program to a few targeted asanas and one Vinyasa that they can do in 15 to 30 minutes. (Mukunda, lecture)

In asana work I use the theme "yoga EDLS" (pronounced edels) to help students remember their goals. This stands for

- E elongation of spine and breath
- D de-rotation of spinal twist
- L lateral flexion to correct symmetry
- S strengthening imbalanced musculature.

I originally got this idea from an article on Cotrel Therapy (#5 1974). Elise Miller Browning (#3) also uses these principles in her asana work. Mukunda would put S (strengthening) first in the formula based on SYT principles.

EDLS can be used throughout all three phases, however the most important theme of phase one is *strengthening*.

I like to call my clients and ask them how their Yoga EDLS are progressing. The four clients I have with this condition have all had issues with motivation and pain.

I have seen that periodic reminder calls are helpful to get them back on track even when they say, "But I have not been doing my asanas."

As phase one progresses we want to use gentle Vinyasa style yoga to strengthen the gluteus medius and hip rotators. The best poses for this are lunges and side balance poses like Vasisthasana (side plank), Sunbird with dog at the fire hydrant. Sun Salutations and Palm Tree Vinyasa, bridge table pose facing up are all good. Side of hip (Parsvottanasana) and triangle (trikonasana) and asymmetrical locust (Salabhasana) are good.

A good four-part Vinyasa that has helped my clients out of pain is the Sunbird fire hydrant. Description: start with inhaling a bent leg comes to side first (fire hydrant), then exhaling and extending same leg straight back, then inhaling bending same leg up and arch it, then exhaling the bent knee under belly toward the face. Repeat 3-4 times and then do a set with the other leg.

One of my clients who I gave the 4 part sunbird Vinyasa to came to me with big bright eyes and told me how that exercise had let her teach without coming home with the usual pain.

The side of hip, Parsvottanasana pose can be done easily as a 4 part Vinyasa using a chair, block or a wall as support on the way down toward the floor. This pose performs all of the EDLS for the spin in an asymmetric way. It is best to watch a client do the pose and show them which side and/or emphasis of elongation actually straighten out their curvature.

If a client is strong, a good Vinyasa is a combo of Adho Mukta svanasana and Vasisthasana, as described: Moving with breath from downward dog to plank and then one arm balance, then repeat other side, this is a good tonic for the torso, especially the side flank muscles.

The most healing Vinyasa I have found for calming vata stress is called "*Arjuna's Breath*". (See Appendix) It is more of a pranayama than an asana and is very trance inducing. I like to call it *earth and sky Vinyasa* as it connects the ground, the heart and the sky. Shar Lee taught it to me and it is a very old North Indian Vinyasa. It is good for releasing tension throughout the body or as preparation for meditation. It is similar to tai chi movements. It is described in Appendix.

The psoas can be tight or weak for emotional reasons. It is a root muscle of the condition but be patient and leave it till stage 2. It is better to wait because this may bring up emotions that are better tackled when you know the person better. Clients may not like phase one because it is hard work. Once they see some results they may just surprise you.

The way I get clients who are in pain to take responsibility for their own healing is to give them a ritual affirmation. I look them in the eye and say, "Repeat after me: I –*Lotus (their name)* ---honor my back pain as my teacher". I ask them to repeat that question until their heart or pain is tells them something.

"If emotions come up, accept and acknowledge them. The yoga therapist is not a psychotherapist; don't suggest, don' fix it. Just listen as an empathetic support."
(Mukunda, lecture)

"You can only go on to phase two if the client has a regular home practice, and you feel they have made some progress with strengthening. Check with them every two weeks. The more physical activity, the better off they will be. They need the sculpture's hand to guide them. Phase one is crucial or you'll never get to a stable phase two. They will not like strengthening all that much because it is work, so give them movements that make them feel good and create endorphins. This requires strategy because the scoliosis issue crosses over the koshas (Mind- body levels)."
(Mukunda-lecture).

6b) Realign Body, Deepen Program and Lifestyle Changes- Stage 2

Theme is to realign the body. Phase two is done when the assessments show the results are stable and there is improvement. Change the program to 45 minutes to an hour a day, increasing the repetitions and breaths in poses. They may improve very quickly but it is often not stable. They may have emotional releases in poses, like sighing and groaning. Encourage this and they are touching deeper emotions, which is huge for vata imbalances. There can be difficulty sleeping because there is so much change. The appetite, menses, need for hugs and nature, etc. can go through changes as well

Ideally an assessment should be done every two weeks with fine tuning as needed. You may need to refer them to a body worker or other therapist. Recommendations can now include psoas work if there is lumbar curve. (Mukunda, lecture)

Aligning the spine comes back to Yoga EDLS; Elongation, e-rotation, lateral flexing and strengthening. Be on the alert for them over doing it with certain poses. By now they will be quite knowledgeable about their curve, target muscles, and the energy gained with diligent practice. There may be setbacks like strained muscles or times when they are too busy to practice. Remind them of their progress they have made and how good it felt to be strong and energetic.

6c) Maintenance of Underlying Issues -Stage 3

1. Impress the person with the importance of a lifetime commitment to the practice. Remind them of the benefits.
2. Give them feedback like "I noticed how relaxed, open you are when you were practicing."
3. Make sure the target muscles are still strong
4. Explore the psoas thru body work or strengthening, to see if emotional issues are triggered, which is common.
5. Include prayer in this phase.
6. Impress upon them the need to relax effectively.
7. Give them pranayama and yoga Nidra for relaxation.

MMBurt 2005

8. Occasionally give kapalabhati or Bhastrika to increase Agni, especially if their vital energies look low.
9. Give them prolonged twists or repetitions of them, with attention to do one side more. This increases Agni; digestive fire.
10. Intercostal breathing is the cure for thoracic curve.
11. Work on the whole rib cage but mostly lower with pressure from hands.
12. Never give up on them as they have earned your time and respect.
(Mukunda lecture)

Conclusion

Yoga and Ayurveda can help clients of spinal curvature improve their quality of life. Even though it is not clear that spinal curves cause pain, the condition lends itself to imbalances, which often include pain for either an emotional or physical or spiritual reason.

In Micky's case it should be clear that pain was caused by many levels of imbalance and stress. On the physical, level the toxins were leaking into the muscles, which were already out of asymmetric balance. On the energetic level the stress was making Micky tired. On an emotional level, the syndrome of success and failure was causing emotional stagnation and wounding. On a mental level the overwhelm of life was causing a cloud of dullness and doubt.

Micky's use of the elevating activities of asana, meditation, scripture study, spiritual community and devotional music have all cultivated peace in these many levels of stress. Lotus's use of asana to strengthen her confidence in gardening and family responsibilities has elevated and energized her life.

The structural balancing that yogasana exercises bring, are effective because they work on many levels. The breathing elevates and expands energy, making a person feel more enthusiastic about life. The asanas are each designed to work on the energetic channels of the body, just as an acupuncture treatment does. This releases elevating hormones that then brings clarity and confidence to a practitioner. Energetically the smooth flowing way vinyasas are practiced can bring peace and faith to the core of ones being.

Structural Yoga therapy is also effective because it is custom designed and efficient for a modern day person to practice within our busy lives. Clients know they are practicing something beneficial because they have experienced the muscle testing and have a concrete knowledge about their particular imbalances. This gives them motivation to practice.

As T.K.V. Desikachar once said,

" There is no healing without faith, and faith comes in many unforeseen ways."

7) QUESTION AND ANSWERS ABOUT SCOLIOSIS

Answers from MUKUNDA T. STILES - FROM YOGAFORUMS.COM

Posted: Fri Apr 26, 2002 9:27 pm Post subject: Parsvakonasana;

Q -Hello, I hope you are well. I have a few questions. Is Parsvakonasana a pose that is good for someone with scoliosis? I can see that it really shows up in this pose. Should someone with scoliosis modify it in some way? Back to top

A-Yes, it is good pose for curvature. It should be modified so that one does the pose in a way that you can see the spinal curves correcting during the practice. On the side that doesn't make much change or is simply curving with the scoliosis it is better to be gentle.

MMBurt 2005

Parsvottanasana is a better pose for curvature as it corrects the imbalance from the legs upward and creates a more long lasting change.

A - Yes. The help is for the lumbar region so if the lumbar goes to the right then putting the right foot forward and doing half the pose so that the spine is parallel to the floor will lessen the lower curve. For upper curvatures I often use the same pose with hands at the wall to prevent thoracic rotation. Best is to look at someone with this curve and see how spine responds.

Posted: Tue Feb 03, 2004 12:29 pm Post subject: knee and hip with depression;

Q- Can you advise on working with a 45 year old female who had 3 knee surgeries twenty years ago and has scoliosis and some pain in her hip. I use the joint - freeing series and since she can't kneel without pain we do some of the series sitting. I also use some stability ball for forward bends. I hope you can advise. I need to get your video and knee booklet as I have your teacher manual and large book. Unfortunately, I am unable to do your teacher training this year due to a medical problem due to two major losses. I need some self-care to fight a depression. Thanks for sharing, C. I look forward to next year for training opportunities. Namaste, Guru. Back to top

A- Lets begin with you. For your need for depression i would recommend that you do sun salutes to your capacity first thing in the morning. every day find out what your capacity is, if you get emotional during this that is great then they are working to break the depression cycle. Lay down and/or sit with it until you get some insights into what you are feeling and what the feelings want you to do. then get out and go for a daily walk 15-30 minutes, just before lunch is an ideal time.

For your client it is not clear what help you or she is wanting. what symptoms need relief? None of this is a problem but she should tell you what she wants, best that way rather than you giving her an agenda based on what you think she needs. Let her tell you what a problem is for her.

May the goddess of abundance Lakshmi bless you and soon. You can order book and reprint articles from my website bookstore at yogatherapycenter.org

namaste mukunda

Posted: Sat Apr 27, 2002 4:16 pm Post subject: Back spasms

Q- I have a student who has a bit of scoliosis in her spine. Lately, she has been getting spasms in her back from the yoga practice. I think that maybe the seated forward fold with both legs straight and with one bent may have been what started it all. Should she avoid these poses? I suggested that she modify them with a bend at the knee. Anything else you can recommend?

A- I would recommend she practice standing poses more and seated less. The other suggestion is to do poses in which she feels the effects toning her hip rotators, both internal and external, as well as hip flexors (psoas and rectus femoris). These muscles need to be made very strong before one attempts to realign the spinal column. In other words strength before stretching. With persistence (allow 2 years) and adaptations to the

changes as her body evolves, I have seen students change up to 50% of curvatures up to 40 degrees. Back to top

Posted: Thu Aug 05, 2004 6:41 am Post subject: Balance the spine

Q- I have a student that is much tighter in the hip on the right side than the left. She noticed this when she was on her back and taking the right hand to the left foot, wasn't able to get very far but when she takes her left hand to her right foot she can reach the toes. Some of the postures are more challenging on that side but there isn't any discomfort or pain. She wanted asanas she could do to balance her spine out and suggestions. Thanks you for your experience and knowledge
Namaste, L Back to top

A- Check to see if she has a scoliosis (see my book page 99 for evaluation procedure), it sounds to me like she may have lateral imbalances either pelvic height or spinal curve. I would recommend that she focus on asymmetric poses for about a month. Doing poses like trikonasana on the challenging side only for instance. To be more precise she would need an assessment of body alignment as described in my book chapter 12. You can learn this procedure at one of my weekend introductory workshops such as at Kripalu in late May, Memorial Day weekend or the June Program here in Boulder sponsored by Rocky Mountain Institute of Yoga and Ayurveda. My schedule is posted under workshops at www.yogatherapycenter.org Or if you are close enough you can bring the student to me and I will do an assessment and give you guidance on working with her.
Namaste mukunda

Posted: Mon Dec 01, 2003 12:32 pm Post subject: misalignments

Q - I am not sure I understand one of the sentences in your 9/10 Q&A mailing in response to someone with a bulging disc problem and am hoping you can clarify your meaning for me. It is the second sentence in these three lines: "Thus it is not that a specific pose is recommended but rather what muscle to work and how in each Asana. *Often small misalignments in Asana are needed to generate energy flow to disc spaces. * This is why classes rarely help with back pain." It sounds as though you are saying misalignment is necessary to help heal the problem, but the next sentence contradicts that. As always, thank-you for sharing your knowledge. Cordially, A Back to top

A- Is the first line clear that one must understand what is being strengthened or stretched? By misalignment I do not mean to posturally misalign them to correct the problem. Although sometimes alignment causes more stress, we must be certain that it doesn't. Always the poses are done according to Patanjali II, 46-48 to relax effort and have student feel comfortable. But rather i mean that energy is not created by being in alignment, it is increased by repetitive motion harmonized with breath, or subtly using the existing physical misalignment so that it releases the withheld prana in the joint space. This is especially true in the case of disc injuries, imbalances of hip rotators, and those with postural misalignments that are not easily correctable -- tibial torsion, scoliosis, twisted pelvis, leg length that are misaligned. In all these cases one needs to understand the specific individual's misalignment and work within that frame to guide them to stronger muscles, and restore natural range of motion. Back.

Posted: Wed Apr 24, 2002 4:24 pm Post subject: marked scoliosis

Q- My question relates to structure and function. I am a 47yo male with a marked scoliosis in L4, 5& S1. Whilst I was probably born with it, many years of top grade field hockey further exaggerated the problem. I have practiced yoga regularly since age 30 and have been teaching Yoga full time since 1995. I am more immersed in Yoga therapy in recent years, mostly influenced by AG Mohan's approach. I wondered if you had any suggestions as pain in the right hip and most of the muscle groups in this region e.g. adductors, flexors etc has worsened over the past 18 months.

A-My guess from your brief description is that there is weakness in the gluteus maximus and hamstrings. A common finding is that the muscles directly below the site of pain are weak. You mention adductors, flexors etc has worsened, but what specifically do you mean? Can you tell if they are tight or weak? Among the most beneficial poses for that region of the spine is locust, Salabhasana. With scoliosis I often have students do the practice with the legs off centered and depending upon what is weak, single or double leg. In general for pain increase your time spent with ujjaye pranayama and meditation/prayer that takes you beyond your body.

Mukunda

Posted: Mon Dec 01, 2003 12:40 pm Post subject: scoliosis

Q - I saw a client today who has scoliosis. Is it possible sometimes that when you view it from the back that it only looks like a rotation in the column versus an obvious S or C curve? This client had a 9-degree right lower thoracic and 2 degree left lumbar.

Namaste,

A- I assume your measurement is from using the scoliometer. A 9-degree thoracolumbar curve will not be as pronounced as the more common right thoracic curve that is upper thoracic. So a mild appearing curve will result when it is thoracolumbar shape as this is one of the standard 4 shapes. People in good shape can change the appearance of the curvatures especially when you assess them in lateral flexion. So I would also evaluate her curve in standing lateral flexion to see how it changes. During January presentation to the Boston group I will give more extensive talk on the four curves and therapy for them. - Mukunda

Posted: Fri Aug 06, 2004 11:43 am Post subject: Sacrum dysfunction

I was a competitive runner in high school from age 12 onwards. At age 15 I would run 1 of 4 races in a meet & then find I could barely walk. It seemed one leg was shorter than the other. I went to a chiropractor 3 times/week in order to continue racing. The following year I quit & haven't run seriously since, although I have done nearly every other dance, sport, or body exploration I could manage.

With the continued movement, but not the jarring of running, the sacrum discomfort was alleviated. It is still aggravated by sitting too long. In high school I had an MRI & in college I saw a "spine" doctor at Cornell Med in NY & then a chiropractor & later on an osteopathic doctor. The MD reiterated that I have a mild, beginning scoliosis (Lumbar curves to L slightly), which I had managed to keep from developing by studying ballet & maintaining tall posture.

The osteopath (2 years ago) took an x-ray & said one leg was longer than the other, causing my pelvis to twist. He gave me a heel lift (L foot) & said I would have to wear it the rest of my life. He did acupuncture on my L QL's & said the muscle was so tight &

had been so tight for so long that they could barely get the needles into the muscle to release it. It remains tight to this day. However, I was wary of him & didn't trust him. Immediately after I was at Kripalu for yoga teacher training & I had a session with Lee Albert--Positional Release Therapy. This helped tremendously & I quit wearing the heel lift. However, he said just the opposite of the Osteopath--which was that it was highly unlikely the bones of my legs were different lengths & far more likely that there was an imbalance in my hips. He prescribed Garbhasana (child) 5 minutes each day & Matsyendrasana (seated spinal twist) each day.

I have not; I regret to admit, been religious about doing these 2 postures every single day. Now I find not only are my sacrum & pelvis more loose & moody, but my L knee has been feeling strange for the last few months. It feels as though the shin bone, where it meets the knee, is about to pop through the skin & is very tender to the touch. I have difficulty doing child pose now b/c of this. I can also feel when I do it upward-facing--pavanmuktasana--that the L ASIS bone is tilted uncomfortably forward into my thigh & my right lower back is not as even in the floor as the L.

Three more details: There is a band at the groin--just below the L ASIS bone--that has been bulging for years. Initially I thought it was a swollen lymph node, but now wonder if it is the Psoas or another muscle that is stretched too far over the bones in my pelvis. Secondly--I have had spider veins in my thighs since age 15 & they have been slowly creating broader maps through my legs. They have spread into the shin & calf of my L leg. Most everyone says it's nothing to worry about--but I can't imagine that faulty circulation is something to ignore.

And finally, I have had low arches, but in the past few years of focus & awareness through yoga practice (coupled with Kathak--Indian dance--for 6 months & now Flamenco--although I am unsure if these foot-active dances are ultimately helpful or hurtful), I have strengthened & broadened my feet & lifted the arches somewhat. I notice discrepancies in the feet & toes on each side, but have not been able to figure it all out--to piece all these various bits together & understand how to better align.

So, having taken all your time with so much information, I am simply hoping you might confidently shed some light on what is going on & what I can do to heal.

A- I agree with the Postural Release Therapist, that there is an extremely remote possibility that your legs are uneven length. Most likely there are muscular imbalances. I have assessed over 30,000 people in 30 years and found only 2 with true leg length difference, both due to auto accidents. So you need an accurate assessment of what muscles are tight what are weak so we can do something specific for you. It doesn't sound to me from your history that that has been done. A mild lumbar scoliosis can cause this situation to give spasm to Quadratus Lumborum (QL) and the resulting appearance of leg length difference. This being the case the two poses you were given will not likely make a lasting difference because they are not affecting the QL and psoas. You need to be seen by me or one of my graduates. refer to my website for the graduates in MA or CO or to my travel schedule under the workshop page -- www.yogatherapycenter.org/workshops Namaste Mukunda

Posted: Mon May 19, 2003 9:13 pm Post subject: Twists Mukunda;

A- Twists: Lower lumbar twists such as Jathara Parivartanasana should be minimized, if not avoided, for lumbar scoliosis, OR, should only be done in direction, which does not emphasize the curve.

As for Thoracic twists, my reading is that when twisting toward the concave side, that should be more of a lengthening, and when twisting towards the convex side, it should definitely be a lengthening, strengthening, and then twisting.

A- Twists: They should be done to optimize straightening of lumbar curve. That is with left lumbar curve do the pose with hips to right side and pelvis moving toward the foot.

Thoracic twists: In general I recommend working from lower edge of the curve and lifting to straighten these curves. Concave side will tend to have shoulder lower therefore elevate that side from pelvis to shoulder. Convex side shoulder will be higher therefore leveling shoulders will require strengthening of latissimus on that side.

8 - REFERENCES

Texts

- 1) Schommer, Nancy (2002) *Stopping Scoliosis*, Whole Family Guide to Diagnosis and Treatment, 2nd Edition
- 2) Stiles, Mukunda (2000) *Structural Yoga Therapy*, Adapting to the Individual. Samuel Weiser, Inc.
- 3) Browning Miller, Elise (2003) *Yoga for Scoliosis* Therapeutic Back Care
- 4) Sarno, John, M.D. (1991) *Healing Back Pain*, the Mind-Body Connection Warner Books
- 5) La Brech, Betsey, *Physical Therapy Magazine*, "Cotrel Traction" article, volume 54, (Aug. 1974)
- 6) Horosko, Marian *Dance Magazine*, "Scuttling Scoliosis" on Robert Jokel's Mirroring technique. (Feb. 1991)
- 7) Egoscue, Pete (1998) *Pain Free*, Revolutionary Method for Stopping Chronic Pain
- 8) Buhrman, Sarasvati Ph.D., *Journal of Botanical Medicine*, Ayurvedic Psychology Approaches
- 9) Satchidananda, Swami (1978) *The Yoga Sutras of Patanjali*, Satchidananda Ashram-Yogaville
- 10) Cailliet, Rene, M.D. (1975) *Scoliosis –Diagnosis and Management*. F.A. Davis Company

Web Sites

- 11) Yogaforums .com -*Yoga therapy question and answers, searchable*
- 12) Spine-health.com -*Definitions, animations of curves, discussions*
- 13) Spineuniverse.com -*Traditional and alternative treatment descriptions*

Professional Contacts (Lectures and Classes)

Stiles, Mukunda – Founder- Yoga Therapy Center, Author (#2). yoga therapist for 30 years

Buhrman, Sarasvati, Ph. D. –Founder Rocky Mt. Inst, of Yoga & Ayurveda, herbologist,

Miller, Elise Browning - Yoga teacher, author #3

Lee, Shar – 33 years teaching Yoga, master of Tibetan Cranial Healing and other body working modalities.

9 - APPENDIX

ARJUNA'S BREATH VINYASA SEQUENCE

Stand in mountain pose and breath tall and align to plum line.

- A- Exhale as you cross hands in front of waist and sink into bent knees. Palms together thumbs in toward groin.
- B- Inhale as you rise and smoothly sweep hands past heart up toward sky.
- C- Exhale as the hands come down to "T" shape with bent knees.
- D- Inhale as body rises tall and palms turn upward.
- E- Exhale as right hand comes smoothly across to left bringing upper body into twist, knees stay forward.
- F- Inhale moving both hands and upper body to center.
- G- Exhale as you continue moving upper body back to right side.
- H- Inhale as left hand opens to left forming a "T", stand tall.
- I- Exhale as the body sinks and hands come crossing over waist into the beginning position to start sequence again.

Stand in mountain pose and breath tall and align to plum line.

- J- Exhale as you cross hands in front of waist and sink into bent knees. Palms together thumbs in toward groin.
- K- Inhale as you rise and smoothly sweep hands past heart up toward sky.
- L- Exhale as the hands come down to "T" shape with bent knees.
- M- Inhale as body rises tall and palms turn upward.
- N- Exhale as right hand comes smoothly across to left bringing upper body into twist, knees stay forward.
- O- Inhale moving both hands and upper body to center.
- P- Exhale as you continue moving upper body back to right side.
- Q- Inhale as left hand opens to left forming a "T", stand tall.
- R- Exhale as the body sinks and hands come crossing over waist into the beginning position to start sequence again.

Begin and repeat whole sequence again moving smoothly with the breathing.

Getting the whole sequence in correct order is not as important as a smooth flow which builds the energy of momentum called prana. In the beginning most folks get the twist directions mixed up until they have practiced it for some time. Don't worry, be happy!

After starting with the right hand a few times then you can start with the left and try to do the sequence opposite side. After it is memorized you can switch back and forth at will.

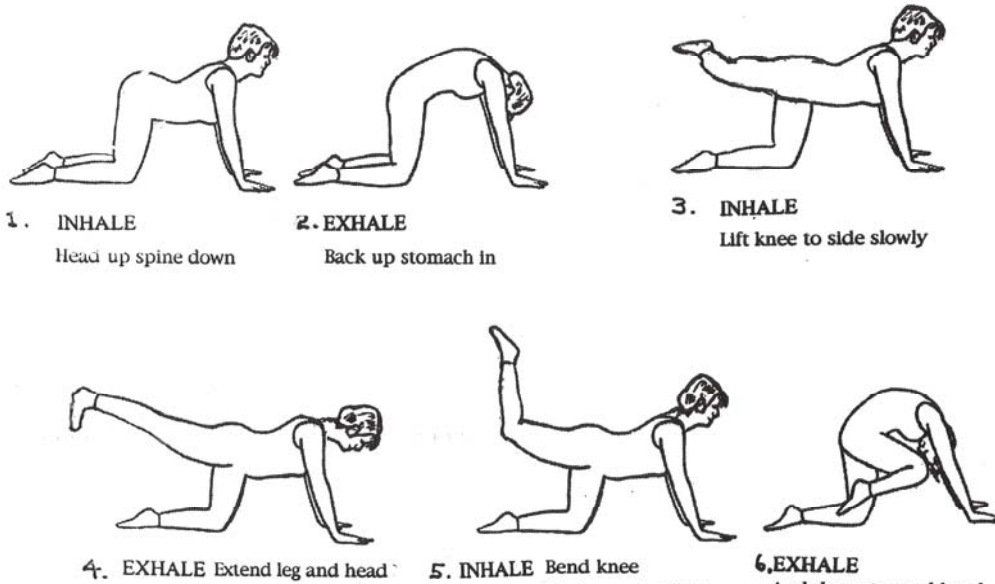
I find these movements are naturally an opportunity to honor ourselves, the earth, the sky, the beauty around us, as the hands point to these points respectively.

This Vinyasa is balancing to all three doshas. It was taught to me by Senior Teacher Shar Lee from Longmont, Colorado. She learned it in North India and said it was very ancient.

SUNBIRD AT FIRE HYDRANT Vinyasa

Designed by Makaan Burt 303 440 8119

Benefits: low back pain, tight hips, sore buttocks, etc.



- Repeat same leg sequence 2-5 times or until it feels tired.
- Repeat other leg sequence 2-6 times or until that leg feels tired.
- Notice

Biography

Makaan Burt, RYT, has cured his own chronic back pain of 12 year duration. He has studied yoga for 30 years, including two trips to India. He began teaching in

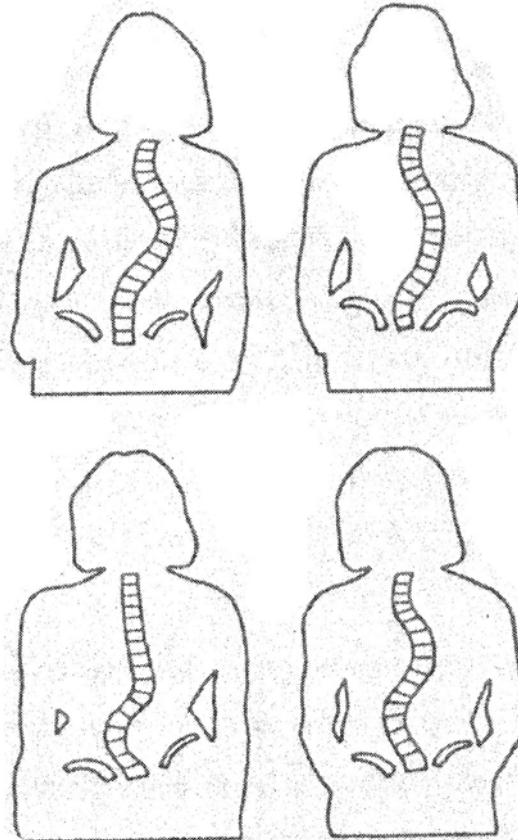


Figure 1.4. Although doctors have identified nearly a dozen curve patterns, the most common types of curve are: right thoracic (top left); thoracolumbar (top right); lumbar (bottom left); and double major (bottom right).

MMBurt 2005

1982. He is long time student of both Richard Freeman and Mukunda Stiles (where he learned structural yoga therapy). Makaan offers Ayurvedic massage, yoga classes, privates and workshops in back pain care and kirtan yoga.