

POSTURE

Structural Yoga Therapy Research Paper

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Edited by Mukunda Stiles

1. Case Studies

#1 - Larry

A. Initial Intake, Symptoms, Self-Assessment

Late 30s. 5'9". 160lbs. His complaint is that he feels he has poor posture and general shoulder tension that interferes with his feeling comfortable during the day. He doesn't want it to get worse. There is no pain. He speculates the tension is from long hours at work (60 hrs/wk) and sitting at a desk and computer all the time. Takes no medications. Sleeps well, but not enough: 6 hrs a night.

Used to run marathon and train regularly until he sprained his ankle over 2 years ago. The ankle healed. But there's still great tightness in the hips and legs from running. He now runs once a week. He also takes a yoga class once a week. Often comes with his wife, Patricia, and they seem to enjoy practicing together and have a deep connection.

He would like to spend more time with his family, especially with his son, Max, 5. He shared that Patricia seems to have a closer relationship with Max as she home-schools him, and Larry is always at work. That bothers him a little, and, it seems, that he is having some resentment toward his job and its stress level. He creates an impression of someone who holds his emotions (especially anger) inside, rarely admitting their existence even to himself. On the outside, Larry seems to be very balanced, mentally at ease, and focused. Says he used to be very hot-tempered, but now much less so.

He also feels that he needs more self-discipline. Yet, being a marathon runner, and judging from his commitment to this project, I think he has a lot of self-discipline.

Larry wishes to undo his postural imbalance and feel tension-free, and also to achieve a higher awareness of his posture on a daily basis so that his body maintains that freedom.

B. Physical Assessment and Findings

Only the most significant information is presented here. Please note changes in **bold**:

December 2004		March 2005
Sacro-Iliac joint test	Both sides down on first try	Both sides down after a few knee lifts
Body-reading (p.103, Stiles1)	'the Ruler' body type	
	Body leans forward slightly	Body leans forward slightly
	Forward head	Forward head
	High Left shoulder by 1"	High Left shoulder by 1"
	Flat Back	Gentle thoracic curve
	Elevated Left hip	Hips look even

December 2004**March 2005****Posture Test (Appdx B)**

1. Spinal curves	Slightly flattened thoracic	Gentle thoracic
3a. Posterior Midline		
- Cervical	Head is off to Right by 1-1½"	Center
3b. Anterior Midline	Chin & nose are 1" to Right	Centered
4a. Ant. Horiztl Planes		
- Clavicles	Left is higher by 1"	Left is higher by ½"
- Iliac crests	Left is higher by 1"	Even
4b. Post. Horiztl planes		
- Spine of scapula	Left is higher by ¾"	Left is higher by ¼"
- Post. Iliac crests	Left is higher by ¾"	Even
6. Sense of Posture	Slumping when sitting	Much more awareness

ROM

Supine	Left	Right	Stretch	Left	Right	Stretch
Hip						
Flexion (135-150°)	135°	110°	√ right	135°	135°	
Ext rotation (45-60°)	40°	40°	√ both	55°	40°	√ right
Int rotation (35-50°)	25°	30°	√ both	20°	40°	√ left
Side						
ITT check (@30°)	@20°	@20°	√ both	@25°	@25°	√ both
Feels tight in back knee						
Hip abduction (45°)	40°	45°	√ left	50°	50°	
Cramps in glut medius						
No cramp						
Hip abduction with ext rotation (90°)	70°	75°	√ both	80°	80°	√ both

Muscle Strength

Supine	Left	Right	Strengthen	Left	Right	Strengthen
Hip flexion	4	3	√ right	4.5	4.5	
Psoas Isolation	3.5	3.5	√ both	4	4	
Feels sore, recruits rect. femoris						
Still recruits, but not sore						
Prone						
Shoulder horz abduct	1	1	√ both	2.5	2.5	√ both
Deltoid isol (hands on head in Cobra)	2	2	√ both	2.5	2.5	√ both
Shoulder vert adduct (Lats isolation)	2 shaking	2	√ both	3.5	3.5	
Upper spinal erectors	2	2	√ both	3.5	3.5	
Neck extension	2	2	√ both	3.5	3.5	

C. Summary of Findings (only most significant)

Stretch (tight)	Strengthen (weak)	Release (chron'ly contracted)
Hamstrings	Hamstrings	Hamstrings
Psoas, especially on Left	Psoas, especially on Right	Psoas
Glutues maximus	Gluteus maximus	
Tensor Fascia Lata and ITT	Thoracic erector spinae	Thoracic erectors
Latissimus, especially on Right	Latissimus, especially on Left	
Left upper trapezius	Upper & middle trapezius	
	Posterior and middle deltoids	

D. Recommendations

FIRST SESSION

1. A. Sacro-Iliac joint exercise, on cushion, 10-12 times with breath on each side.
B. Focus: release tightness and create more freedom around the S.I. joint.
2. A. Runner's stretch, hold 30-60 sec. each side, deep steady breath.
B. Focus: stretch the psoas and the TFL, and release the hamstrings.
3. A. Side of the Hip pose (Parsvottanasana), hands on wall, hinging from the hips so the spine is long, lifting the tailbone up, squeezing the thighs toward each other with slight internal rotation at the hips, 30-60 sec. each side, deep steady breath.
B. Focus: strengthen the adductors and the psoas, and stretch the hamstrings and the abductors (particularly posterior fibers of gluteus medius).
4. A. Bridge pose (Sethu Bandhasana), feet hip-width, lifting the hips up, rotating the arms out, pulling the shoulders down, and squeezing the shoulder-blades together, 30-60 sec. with deep steady breath.
B. Focus: strengthen the gluteus maximus, hamstrings, latissimus, teres minor and infraspinatus, and the lower and middle trapezius.
5. A. Reclining hand to toe pose (Supta Padotanasana), with hands over the thigh, or with a strap over the foot, 60 sec. each leg, with steady breath.
B. Focus: stretch the hamstrings.
6. A. Deep diaphragmatic breathing with awareness, soften and expand the belly on inhale, and gently pull it in on exhale.
B. Focus: release tension, soften muscular 'armor' (especially around shoulders) on exhale.
7. Yoga Nidra, or another conscious relaxation practice, for at least two minutes afterwards and also in between poses if necessary.

I also recommended finding a way to express pent-up emotions, from his work and its stress, physically: run/play/shout on the beach, punch a bag, take a Kickboxing class. I did not inquire if Larry followed that advice, even though, at the time, he seemed to think that it made sense.

ONE WEEK LATER

Larry was able to do the sequence almost every day. So I felt motivated to give him a little extra. I also encouraged him to perform only a few exercises from the following list if he didn't have enough time to do the full sequence. I highlighted the most important of those exercises for him; (here, they are given in **bold**).

1. **Same as #1 after the first session.**
2. A. Cat and Cow stretches: exhale and round the back into Cat, inhale and arch back into the Cow tilt, 10-12 times.
B. Focus: stretch and tone the erector spinae and stretch the rectus abdominus.
3. **A. Sunbird**, or #7 in JFS, two sets of repetitions, one with straight knee, and one with bent knee, 6-10 times each, each leg.
B. Focus: strengthen hamstrings and gluteus maximus, psoas and rectus femoris.
4. A. Hero pose (Virasana), sitting back on the heels, a few steady breaths.
B. Pause and observe the effects of the practice, also stretch tibialis anterior and quadriceps' insertions.
5. Runner's stretch, same as after the first session.
6. **Side of the Hip pose**, same as after the first session.
7. **A. Cobra pose** (Bhujangasana), hands under the shoulders, no pressure on hands, neck in line with the spine, shoulder blades gently squeeze and pull back, 30-40 sec, steady breath.
B. Focus: strengthen thoracic erectors, latissimus, lower, middle and upper trapezius.

8. A. Camel pose (Ustrasana), hands on low back, finger point down, squeeze shoulder blades, pull shoulders down, lift the chest and ribcage, 30 sec, steady breath.
B. Focus: stretch rectus abdominus, pectoralis major and anterior deltoids; strengthen latissimus, teres minor and infraspinatus, middle and lower trapezius.
9. **A. Half Spinal Twist** (Ardha Matsyendrasana), 30-60 sec, stay a little longer on the Right.
B. Focus: strengthen latissimus especially on the Left by pulling back the upraised Right knee with the Left arm, and middle and lower trapezius; stretch TFL and gluteus medius.
10. **Bridge pose**, as after the first session.
11. Reclining hand to toe pose, as after the first session.
12. **Diaphragmatic breathing, as in the first session.**
13. **Rest.**

FIVE WEEKS LATER

There was a visible change in Larry's posture: much more evenness around the hips and the shoulders; in fact, there was no visible imbalance anymore. Also, he reported that he felt an overall increase in the level of strength and flexibility. This is clearly attributed to his consistent practice as Larry also started to attend yoga classes on a more regular basis (1-2/wk).

We looked at the anatomy atlas together so he could also visualize which specific muscles are tight and weak. I encouraged him to keep up with the sequence, and only made a few modifications:

1. Increase repetitions in the Sunbird pose to 12-15 for each variation.
2. Really focus on squeezing the thighs together in the Side of the Hip pose.
3. Place hands over head in Cobra to strengthen upper trapezius and deltoids, start with 2 breaths and slowly increase to 4-5, keep the neck long.
4. Bring hands to heels in Camel, focus the same as before; also try Half Camel on the left side: extend the right arm up along the ear, keep the left hand on the heel, strengthening the left latissimus and stretching the right.
5. Try the Rolling Bridge pose to strengthen hamstrings and glutes dynamically (exhale to roll up, inhale to roll down); also emphasize rotating the arms inward and pressing them downward to strengthen latissimus.

E. Summary of Results

After three months since the initial assessment, Larry's posture has significantly improved. The biggest shift that Larry noted was in his day-to-day awareness of posture and what adds to its imbalance. Also, as he already stated, he continued to feel an increase in his strength and flexibility, and felt encouraged to keep on practicing. I gave him the freedom, at our last session, to include other exercises and asanas into his routine, and to stay mindful of postural alignment.

#2 - Isabelle

A. Initial Intake, Symptoms, Self-Assessment

Early 80s! 5'5". 125lbs. Isabelle, a former opera singer and a ballet dancer, has noticeable kyphosis in her thorax: about 4 to 5 inches posterior of the frontal plumb line. Always feels the need to straighten up, but there's no pain. She wishes to release that tightness in her back through yoga therapy. She also has limited shoulder ROMs; went to PT a couple of years ago. It helped a little. There's no pain in the shoulders now and, generally, she feels great. She takes meds for cholesterol, and skipping heart beats.

She is not able to sit on her heels in Hero pose: her joints seem to lock half-way through the range of motion in knee flexion. She comments: "I would love to sit like that. I wonder if I ever will."

However, she's not bothered by that too much. She walks, runs (1mi), takes a yoga or Pilates class, or goes to the gym every day!

Isabelle takes incredible joy in living. She is always smiling and positive, and rarely preoccupied mentally. No stress. And has a loving relationship with her husband, late 80s!

B. Physical Assessment and Findings

Only the most significant information is presented here. Please note changes in **bold**:

December 2004		March 2005
Sacro-Iliac joint test	Both sides down Right 'dimple' is 1/2" higher	Both sides down 'Dimples' are even
Body-reading (p.103, Stiles1)	'the Hourglass' body type	
	Body leans back (hips fwd)	Body leans back (hips fwd)
	Forward head	Forward head
	Round shoulders	Round shoulders
	Kyphosis	Kyphosis
	Elevated Right hip	Hips look even
	Flat feet	Flat feet
Posture Test (Appendix B) – no changes		

ROM

Supine	Left	Right	Stretch	Left	Right	Stretch
Hip						
Flexors' length test	tight & feels tight	tight but feels OK	√ both	tight but feels OK	tight but feels OK	√ both
Side						
Hip abd'n + ext rot	110°	110°		115°	115°	
Other hip ROMs did not show changes, slightly under average.						

Prone - no hip or shoulder ROMs showed changes, all #s except for ext. hip rot. tested below average.

December 2004

March 2005

Muscle Strength

Supine	Left	Right	Strengthen	Left	Right	Strengthen
Hip flexion	3	3	√ both	4	4	
Psoas Isolation	3	3	√ both	3	3	√ both
	Recruits rectus femoris			Uses psoas – deep 'valley'		
Trunk flexion	3	3	√		4	
Shoulder flexion	2.5	1	√ both	3	2	√ both
Shoulder ext rotation	2	2	√ both	3	3	√ both
Lats isol'n (vert add)	2.5	2.5	√ both	1	1	√ both
Prone						
Knee flexion	1	1	√ both	2.5	2.5	√ both
Hip extension	1	1	√ both	2.5	2.5	√ both
Hip ext'n + bent knee	1	1	√ both	2	2	√ both
Gluteus max isol'n	1	1	√ both	1.5	3	√ both
Shoulder extension	2	2	√ both	1	1	√ both
Mid trap – scap add	1.5	1.5	√ both	1	1	√ both
Deltoid isol'n (hands on head in Cobra)	1	1	√ both	2.5	2.5	√ both

C. Summary of Findings (only most significant)

<u>Stretch (tight)</u>	<u>Strengthen (weak)</u>	<u>Release (chron'ly contracted)</u>
Quadriceps	Hamstrings	
Rectus femoris	Psoas	Psoas
Glut med, TFL & ITT, esp. L	Gluteus maximus	
	Erector spinae	
	Latissimus and Teres major	
	Teres minor & Infraspinatus	
	Lower & Middle trapezius	
Pectoralis major	All deltoids	Pectoralis major

D. Recommendations

FIRST SESSION

I attempted to teach Isabelle the Sacro-Iliac joint exercise, but, even on three blankets, or a chair, it was too awkward and just did not seem feasible at this point. So I decided to wait with that.

1. A. Joint-Freeing #4, Knee flexion/extension, as in Mukunda Stiles' book (1), 6-10 times.
B. Focus: strengthen gastrocnemius and hamstrings, stretch lower quads.
2. A. Joint-Freeing #5, Hip external/internal rotation, as in Mukunda's book, 6-10 times.
B. Focus: balance the strength of hip rotators that also help in hip flexion: psoas, sartorius, TFL, anterior and posterior gluteus medius.
3. A. Cat bows, from Tabletop, keep elbows by the ribcage, inhale forehead to floor, exhale up, 6-10 times.
B. Focus: strengthen triceps, pectoralis, anterior deltoids, latissimus, and teres major.
4. A. Joint-Freeing #13, Shoulder adduction/abduction, as in Mukunda's book, 6-10 times.
B. Focus: strengthen anterior and posterior deltoids, pectoralis, middle trapezius, teres minor and infraspinatus; and stretch pectorals.
5. A. Cobra pose (Bhujangasana), hands under shoulders, no pressure on hands, neck long in line with the spine, shoulder blades squeeze gently and pull back, 20-30 sec, steady breath.
B. Focus: strengthen thoracic erectors, latissimus, teres minor and infraspinatus, posterior deltoids, lower, middle and upper trapezius.
6. Rest: Yoga Nidra, or another conscious relaxation practice, for at least two minutes afterwards and also in between poses if necessary.

ONE WEEK LATER

Isabelle did the sequence twice and felt excited to practice it at home. However, she felt very uncomfortable with the Joint-Freeing exercise #5: it was painful and cramped her hips. I decided to skip it for now and maybe give it to her a little later. Also, Cobra pose felt very awkward, probably because of the pronounced thoracic curve. Yet, I thought this was too important, so we kept it.

1. JFS #4, as after the first session.
2. Cat bows, as in the first session.
3. A. Sunbird pose, or JFS #7, with bent knee, 6-10 times each, each leg.
B. Focus: strengthen hamstrings, gluteus maximus, psoas, rectus femoris, and abdominals.
4. Cobra, as in the first session.
5. A. Reclining hip flexors stretch: on the bed or similar surface, hands clasp one knee while the other leg relaxes down with the lower leg off the bed, 40-60 sec., steady breath.
B. Focus: stretch gluteus maximus of the contracted leg; stretch rectus femoris, psoas, sartorius, TFL of the extended leg; and also release hamstrings of the extended leg.

Or instead of #5:

6. A. Runner's stretch, hold 40-60 sec. each, steady breath.
B. Focus: stretch psoas, rectus femoris, sartorius, TFL, and gluteus maximus; and release the hamstrings.
7. Joint-Freeing #13, as in the first session.
8. A. Joint-Freeing #14, shoulder external/internal rotation, 6-10 times.
B. Focus: strengthen and improve ROM in deltoids, pectorals, teres minor and infraspinatus.
9. A. Joint-Freeing #15, shoulder flexion/extension, as in Mukunda's book, 6-10 times.
B. Focus: strengthen and improve ROM in deltoids, pectorals, triceps, latissimus and teres major.
10. Rest.

I encouraged Isabelle to take breaks between poses, and, if there is not enough time for the whole sequence, do only a few of them.

ONE MONTH LATER

The new tests did not show any improvement, but Isabelle assured me that she practiced every other day. We went over the sequence together a couple of times, and I decided to keep it the same. I let her increase repetitions or the number of breaths in any pose as she felt enough strength.

She complained of a sharp pain in her shoulder joints in the Joint-Freeing #14, so we modified it with the elbows down.

We met a couple of more times just to practice the sequence. One time, trying to re-introduce the SI exercise, I thought that she could probably do it lying on the back. We started with pelvic tilts with both knees up, feet on the floor. Then, pelvic tilts with one leg (hip) in external rotation (knee pointing to the side). And finally, the second part of the exercise: rolling and lifting up the hip of the upward-pointing knee by engaging the gluteus maximus. These are demonstrated and explained in Appendix A as the Supine Variation of the SI Stabilization Exercise. This variation has proven to be quite effective in reducing low back tension and improving the result of the SI joint test: more stable SI 'dimples'.

Another alternative for the SI Exercise was suggested by Mukunda Stiles and given to Isabelle a few weeks later:

In prone, as in ROM test of the internal and external hip rotation, isometrically engage and release the internal rotators for 3-4 seconds, 6-8 repetitions, then the external rotators.
Inhale on release, exhale on engage.

This new option has also turned out to be fairly effective in balancing the SI joint as confirmed by a more stable SI joint test.

E. Summary of Results

After four months of supervised practice, Isabelle's tests did not show substantial improvement. The main increase appeared to be in the overall muscle strength, especially in the hip flexors and hip extensors.

She comes to yoga classes regularly and is very fond of the shoulder stand and various forward bends, which clearly counteract our efforts to reverse the deep posterior thoracic curve. Despite my warning, she feels great when she does those, and that seems to be more important to her psychologically.

She also added regular abdominal strengthening workout on her own (abs exercises at the gym). I encouraged her to balance it out with equally strengthening the opposing group of muscles (spinal erectors) at the time of the workout: with Cobra, Locust, and their variations, which she is familiar with from our yoga classes.

Isabelle continues to practice the above sequence, including the Supine SI exercise.

#3 - Kathleen

A. Initial Intake, Symptoms, Self-Assessment

Early 30s. 5'8". Kathleen has had a neck pain for the last ten years. She has a slightly bulging disk between C5 and C6. She describes it as a pinching in the levator scapula and a bruising pain that goes from the occiput down the levator into the scapula and the shoulders. She has tried pretty much everything: massage, PT, Acupuncture, etc. Most of these do alleviate the pain but it always comes back. When Kathleen lies down, her neck feels very tense – she is unable to let her head roll side to side naturally.

Kathleen suspects that the pain has emotional origin. It acts up with grief and worry, which she feels quite often. Her mom passed away a few years ago, and her brother has a drug addiction. Kathleen feels some responsibility and, perhaps even guilt, for the way things are, and these feelings seem to lay heavy on her shoulders. She has a lot of fear and anxiety of the future and her financial independence. She feels she has a busy mind that cannot quiet easily.

On the other side, Kathleen appears to be an optimist, seemingly in control of her busy life. She owns a non-profit organization that helps children and families from Ethiopia to receive assistance and education in the U.S. In addition, Kathleen is exploring many new avenues. She is planning to start her own clothing line, using recycled materials. She is also enrolled in a Bodywork school and is preparing to gradually transition into the holistic health field.

Kathleen walks 3-4 times a week, and recently decided to keep up with yoga. She says that her breath is often shallow, always in the chest, and she has to be conscious to breathe into the belly. She has a fairly balanced, mostly vegetarian diet, with a strong addiction to coffee. She tried to quit a few times and had intense migraines as a reaction where she thought she was going to pass out. She realizes that it was probably a detox reaction, and wants to wean off of it slowly.

I met Kathleen in a massage class, and when she found out about my work, she wondered if it would help her, so she volunteered to be part of this paper. She was very committed and consistent with her recommended routine.

B. Physical Assessment and Findings

Only the most significant information is presented here. Please note changes in **bold**:

December 2004		March 2005
Sacro-Iliac joint test	Both sides down	Both sides down
Scoliosis test	5° Left thoracic curve	No curve
Body-reading (p.103, Stiles1)	'the Cone' body type	
	Forward head	Forward head
	Round shoulders	Round shoulders
	High left shoulder	High left shoulder
	Slight lordosis	Gentle lumbar curve

Supine body-reading	Feet turn out 60-70°	Left turn out 30°, right - 45°
	Right leg longer by 1/8"	Even
	Right shoulder higher	Even
	In internal rotation, slight pain in Left lower back	No pain

Posture Test (Appdx B)		
1. Spinal curves	Slightly excessive lumbar	Gentle
	Slightly flattened thoracic	Gentle
	Excessive cervical	Slightly excessive cervical
2. Frontal plane	Acromion 3/4" posterior	On the plane
4a. Ant. Horizontl Planes		
- Clavicles	Left is higher by 1 1/2 "	Left is higher by 1/2"
5. Body Splits	Front slight more developed	Balance between front and back
7. Breath	In the chest	More awareness of belly breath

ROM						
Supine	Left	Right	Stretch	Left	Right	Stretch
Knee flexion (150°)	130°, feels very tight	130°	√ both	150°, no tightness	150°	
Strt leg hip flxn (90°)	60°	60°	√ both	80°	75°	√ both
Int shoulder rot (80°)	80°	68°	√ right	80°	80°	
Side						
Hip abduction with ext rotation (90°)	80°, feels tight	80°	√ both	100° feels free	100°	
Prone						
Knee flexion (135-150°)	115°, feels in quads & lower back	115°, feels in hip flxrs	√ both	130°	130°	√ both

Muscle Strength						
Supine	Left	Right	Strengthen	Left	Right	Strengthen
Hip flexion	1	1	√ both	2	2	√ both
Psoas Isolation	1	1	√ both	3	3	√ both
	Tremble holding on her own					
Sartorius Isolation	2	2	√ both	3	3	√ both
	Pain in Rt knee			No pain		
Shoulder flexion	2	2	√ both	3	3	√ both
Shoulder ext rotation	2	2	√ both	3	3	√ both
Shoulder int rotation	2	2	√ both	3	3	√ both
Neck flexion, SCM	1	1	√ both	2	2	√ both
Prone						
Gluteus max isol'n	1	1	√ both	3	3	√ both
Mid trap - scap add'n	1	1	√ both	3	3	√ both
Deltoid isol (hands on head in Cobra)	1	1	√ both	2	2	√ both
Shldr vert addn (lats)	1	1	√ both	2	2	√ both

C. Summary of Findings (only most significant)

<u>Stretch (tight)</u>	<u>Strengthen (weak)</u>	<u>Release (chron'ly contracted)</u>
Quadriceps	Rectus femoris	
Hamstrings	Gluteus max	
Psoas	Psoas	
TFL & ITT	Rectus abdominis	
Lumbar erectors	Thoracic erectors	
Teres minor and infraspinatus	Latissimus and teres major	
	Deltoids	
	Pectoralis major	
	Middle trapezius	

D. Recommendations

FIRST SESSION

1. S. I. Joint Exercise, to stabilize pelvis and create structural balance at the spinal base;
2. Joint-Freeing #4, to stretch the quads;
3. Joint-Freeing #5, to tone and create balance between internal and external hip rotators;
4. Joint-Freeing #6, to tone rectus abdominis and thoracic erectors, and stretch the lumbar erectors;
5. Joint-Freeing #7, to strengthen gluteus max, rectus femoris, psoas, and abdominals, and stretch the psoas and TFL;
6. Joint-Freeing #13, to tone the pectorals, middle trapezius, and deltoids, and stretch the pectorals and middle trapezius;
7. Joint-Freeing #14, to tone and stretch the deltoids, infraspinatus, teres minor and major, and latissimus;
8. Joint-Freeing #15, to strengthen and stretch the deltoids, pectorals, latissimus, and teres major.

For all of the above, we started off with 6-10 repetitions each. I stressed the importance of conscious relaxation right after these exercises, especially with the focus on sending a mental message to release tension around the neck and shoulders. In addition, Kathleen was encouraged to practice deep diaphragmatic breathing before or after this sequence, and separately, anytime during the day, with the focus on inhaling soothing and healing energy and exhaling tension from the shoulders.

I also suggested that she find a way to express her feelings in a physical way in the form of singing, screaming, the Lion's pose (Simhasana), and/or punching a bag. She really liked this idea and said that she used to take Kick-boxing classes a while ago and did feel more relaxed and tension-free then. So she was going to give it a try this time too.

ONE WEEK LATER

Kathleen was able to practice the sequence and felt great the whole week. One day, she did feel some pain in the neck and only had the time to do the S. I. Exercise, and after that the pain never came back for the rest of the week. She was excited to keep it going.

1. Start with pelvic tilts in Hero (Virasana) and then in Staff pose (Dandasana), exhale and tuck the tailbone, inhale and arch the lower back, 6-10 times each, for psoas and rectus femoris strength;
2. S.I. exercise as in the first session;

3. JFS #6 as in the first session;
4. JFS #7 with the knee bent to isolate gluteus max more specifically;
5. JFS #8, to stretch TFL and gluteus medius;
6. JFS #13-15 as in the first session;
7. JFS #19-21, to tone and improve ROM in SCM and upper trapezius;
8. Reclining hamstring stretch (Supta Padangustasana), with a strap over the foot, 40-60 sec, with full, steady breath.

FIVE WEEKS LATER

Kathleen felt that she was getting really hooked on yoga. She started taking a yoga class once or twice a week in addition to the exercises. She has been feeling really good and pain-free. She also noticed that her strength and endurance levels have increased. She made a point during the day to take short relaxation breaks and practice deep abdominal breathing.

She stopped doing the JFS for the neck (#19-21) because she did not feel they were doing much for her. I also thought that it would be OK to skip them. I decided to add a few more poses, and suggested that she not worry about doing the whole sequence and only practice as much as she feels comfortable with on a particular day. The following changes were introduced at this point.

1. Start with S.I. exercise;
2. Skip the pelvic tilts in Hero, do the pelvic tilts in Staff pose after JFS #8;
3. Follow with Rolling Boat, inhale and tilt forward, exhale back, to strengthen psoas and lower abdominals;
4. Triangle pose (Utthita Trikonasana) after the JFS #15, to stretch hamstrings, TFL, and gluteus medius, and to tone abdominals, rectus femoris, gluteus max, and spinal erectors;
5. Follow with the Bridge pose (Sethu Bandhasana), to strengthen the gluteus maximus, hamstrings, latissimus and teres major, and middle trapezius; and to stretch psoas and TFL.

E. Summary of Results

After three months of practice, Kathleen has had a tremendous transformation. Now, she is a regular yoga student, and is in control of her neck tension through her practice. I encouraged her to add any other exercises that she is familiar with through her classes into our routine, and only practice a section of it at a time.

She has also been gradually introducing green tea in place of coffee. So far, it's working, even though she still drinks coffee almost every day.

2A. Name and Description

Posture often means posing and posturing. Current cultural norms form an image of posture, often as an appealing physique. Taber's Medical Dictionary defines posture as an "attitude or position of the body." In this paper, posture will indicate a 'balanced body structure' or 'efficiently organized structure': the body's most efficient way to respond to the force of gravity (Rolf). Such structure supports the feeling of health and freedom in the body, when the muscles and fascia are free from chronic tension (Osborne-Sheets).

With so many unique, individual variations of curve, proportion, weight distribution, alignment, and movement, there are lines and planes characteristic of balanced, graceful, organized bodies (Lessac). However, such a standard is debatable and indeed challenging to define. The following criteria describe what is generally agreed to be a balanced posture. Some are less objective than others; nonetheless, this standard will be used to measure posture in this paper. Also see the Posture Test Form in Appendix B.

Balanced body structure:

1. Presence of four gentle, complementary spinal curvatures: convex sacral, concave lumbar, convex thoracic, and concave cervical. When these curves are in harmony with each other, the force of gravity flows easily through the spine. If they are disturbed, habitually or by trauma, gravity becomes the enemy (Lasater). This criterion is a subjective assessment of these curves. How well do these curves distribute weight and absorb shock (being curved to excess or not enough)?

2. Frontal Plane:

a) Straight line through the crown of the head, the ear, the acromion, the greater trochanter, center of the lateral knee, and the lateral malleolus of the ankle (a weighted twine is used as the plumb line);

b) Against the wall test: what makes contact with the wall first? The Gluteals, the Scapula, or both? Does the body lean forward or back?

3. Midline Plane:

a) Posterior: a straight line through the spinal vertebrae;

b) Anterior: a straight line through the nose, the center of the chin, the jugular notch, the xiphoid process, the navel, and the pubic symphysis.

4. Horizontal Planes:

a) Anterior: parallel across the eyes, the clavicles, the ASISs, the knee joints, and the ankle joints;

b) Posterior: parallel across the ear lobes, the spines of the scapula, the inferior angles of the scapula, the S. I. 'dimples', the gluteal fold, the medial knees, and the medial ankles.

5. Body Splits: how proportionate the person's left side of the body is to their right, their front side to the back, the top half to the bottom half, the head to the body, and the torso to the limbs. Also check out Emotional Connection in section 2B and Appendix D for details.

6. Sense of Posture: feeling what degree of freedom, balance, and energy while standing? Heaviness, sinking, collapsing versus buoyancy, grounding and floating.

7. Free, not constricted, diaphragmatic Breath.

2B. Common Symptoms:

Any significant deviation from the above standard will be recognized as a postural imbalance, or a symptom of inefficient posture. Such symptoms are mostly visual:

- Flattened spine (**Larry**);
- Excessive curvatures (lordosis (**Kathleen**), kyphosis (**Isabelle**), scoliosis);
- Head/Neck misalignments (**Larry & Kathleen**);
- Pectoral girdle imbalance (elevation (**Larry & Kathleen**), rotation (**Isabelle & Kathleen**), retraction, collapse, etc.);
- Pelvic girdle imbalance (elevation (**Larry, Isabelle, & Kathleen**), rotation, etc.).

Other less obvious symptoms are:

- Muscular spasm and chronic tension (**Larry & Isabelle**), causing pain (**Kathleen**);
- Difficulty breathing, and other respiratory system disorders;
- Digestive system disorders.

Still other symptoms are of an even subtler nature, affecting energy and emotionality:

- Fatigue, low energy, heaviness, need to straighten up (**Isabelle**);

- Headaches/migraines (**Kathleen**);
- Emotional and mental stress (**Larry & Kathleen**), chronic anxiety (**Kathleen**), nervousness, and apathy to life.

Emotional Connection

It is incredibly intriguing to explore and observe the relationship between posture and emotions. According to Ken Dychtwald, the author of ‘Bodymind’, there is a direct relationship between specific body parts and regions and particular feelings that are stored there. In fact, he claims, “the body is a storehouse of emotions and beliefs and is like a large circuit board: when certain neuromuscular switches are contacted and opened, similar experiences emerge from the same body parts belonging to different people. For example, feelings and memories of being left and neglected repeatedly appear when someone’s chest is being released. A release in the upper back produces strong feelings of rage and anger. Jaws release sadness; hips - sexuality; shoulders tell stories of burdens and stressful responsibilities” (Dychtwald).

A good understanding of this relationship also implies that a human body can be ‘read’, with all its emotional history including traumas, unfulfilled desires, abuses, and repressions, lying clear and unhidden before an attentive observer’s eyes. A few such relationships are summarized in the table format in Appendix D. This table represents only a fraction of what there is. Learning to see, ‘read’, and interpret these body-mind relationships is a continuous practice, in which the depth of the observer’s perception increases with their skill.

It is obvious that such perception and understanding can be valuable tools for a yoga therapist. Not only would the yoga therapist perceive their client on a deeper level, but also be able to individualize the recommended therapy program more accurately, addressing deep-seated causes and patterns.

A little less specific individualization, based on a body type, has already been employed by Mukunda Stiles in his yoga therapy work. Mukunda classifies clients into four basic body types and suggests fairly different body mechanics and alignment principles for each. He borrowed the idea from Edward Jackowski, PhD, the author of “Escape Your Shape” and physical exercise researcher and specialist from New York. Similarly, Dr. Jackowski recommends workout routines based on the four body types: the Hourglass, the Ruler, the Spoon, and the Cone. For more information, please visit his website www.exude.com. I have also used this information to describe the case studies in this paper (note the first line of the Body-Reading table in section 2B).

2C. Related Challenges:

Imbalanced posture, depending on the degree, affects many areas of life. Simple standing and sitting may be an effort, causing tension and pain. Running, weightlifting, tennis, and other forms of exercise may only contribute to the postural imbalance. One’s habits and body mechanics are compromised, especially at the workplace (as in **Larry’s** case) where prolonged sitting at a desk or computer is not avoidable. Holding the body in stiff positions when traveling in cars, buses, trains, and airplanes also adds to the existing problem.

Certain lifestyle habits may have been the cause of the postural imbalance in the first place: one-sided physical activity, certain sports like tennis and golf, watching TV in a sofa with no back support, or just general fatigue. Now, poor posture reinforces those habits, creating a loop that is hard to break. Yet, as seen in the case studies, developing continuous awareness of posture and regularly working with it will create positive change.

3A. Ayurvedic Assessment:

In Ayurveda, health equates with Sattva, or a balanced, harmonious, Sattvic flow through the channels of all koshas, or bodies. Poor posture impairs, or even blocks, such proper flow.

Annamaya Kosha (Physical)

The digestive tract may get obstructed, causing several ailments (Frawley).

- Blockage in the upper back and chest may lead to low appetite;
- Blockage in the middle back and mid-abdomen reduces agni, the digestive fire, and also leads to weak function of the small intestine, causing poor absorption of nutrients (encouraging one to overeat) and other problems of Samana Vayu;
- Blockage in the low back and abdomen weakens colon, creating gas, constipation, poor elimination, high toxicity, and other problems of Apana Vayu.

Pranamaya Kosha (Pranic)

Respiratory and circulatory systems are compromised, reducing the prana of Vyana Vayu (Frawley).

- The lungs get impaired in their function, causing shallow breath and poor absorption of prana in the form of oxygen. The cells of the body require oxygen, so the heart has to pump harder, elevating the blood pressure and putting strain on the heart muscle and the arteries.
- Blood flow to the head may be reduced, depleting mental energy, and contributing to headaches (**Kathleen**) and sinus allergies.
- Mucus and stagnant air build up in the lungs, causing congestion, infections, and allergies.

Udana Vayu, the natural power of prana through which we stand upright, feel happy and positive, and strive to grow and evolve in life is also reduced. (It seems that **Larry** was partially affected on this level). This leads to feeling low energy, heavy, and depressed.

Manomaya Kosha (Mental)

The mental body works mainly through the nervous system and the brain. The nervous system is governed by the spine and is connected to the skeletal system. So any distortion of the spine or a skeletal imbalance will cause or be caused by the corresponding nervous system disorder. That includes insomnia, anxiety (**Kathleen**), fear, stress, and emotional instability.

Postural conditions are Vata imbalances, since both the nervous system and the skeletal system relate to Vata. Vata accumulates as cold and dryness in the bones and joints, leading to either stiffness and reduced movement or to tremors and disturbed movements (Frawley).

Note: All of the above symptoms, challenges, and Ayurvedic indications have been incorporated into the intake procedure gradually, as I came to learn about them. Therefore, my first few clients' intakes lack some of this information.

3B. Ayurvedic Recommendations:

Most yoga asanas will release Vata accumulated in the joints by loosening them. However, any asana done slowly, steadily and gently will tend to reduce Vata, and thus be beneficial for poor posture and stiffness.

For any postural condition, the body needs to be warmed up first. Simple Vinyasas and slow Sun Salutes (Surya Namaskaram) are ideal to increase circulation, loosen the joints, increase absorption of prana through the breath, and stimulate Vyana and Udana. Then, asana practice should aim at releasing the hips, lumbar spine, and sacroiliac joint, as these are the places where most common postural imbalances originate and the main sites of Vata.

The spinal column needs to be addressed next, as Vata also collects there, making it stiff, unbalanced, and even crooked, through the following:

- Twists such as Matsyendrasana and Jataro Parivartanasana (removing Vata from the nervous system);
- Forward bends such as Janusirshasana and Paschimotanasana;
- Backbends such as Cobra (Bhujangasana), Locust (Salabhasana), Bow (Dhanurasana), and Camel (Ustrasana), if done gently and slowly, reduce Vata, and strengthen Samana and Apana and the colon through their warming effect.

After asana practice, the body (and Vata) needs to be given time to assimilate the effects on posture in Yoga Nidra, deep relaxation.

Please Note: All of the above asanas, including sun salutations and Yoga Nidra, can be learned from any competent yoga teacher or even found in most books on yoga practice, such as Mukunda Stiles' "Structural Yoga Therapy", Erich Schiffman's "Moving into Stillness", Swami Satchidananda's "Integral Yoga Hatha", or Sandra Anderson's and Rolf Sovik's "Yoga: Mastering the Basics".

Also recommended are oil massage, steam therapy, saunas, and sweat lodges to remove Vata in the form of skeletal stiffness. Sri K. Pattabhi Jois routinely recommends oil bath to his students for the relief of back and stiffness (Williams). A complete program of Ayurvedic detoxification through Pancha Karma, using these procedures, can loosen the joints and nourish the bones and nerves by clearing the toxins from the musculoskeletal system.

In **Larry's** case, Vata, in the form of stiffness, has accumulated in the tissues around the hip, spinal, and shoulder joints. **Larry** needs the nurturing of Kapha to comfort Vata through oil massage and warm baths, rest and restorative practice, and deep abdominal breathing to activate the relaxation response whenever possible.

Similarly, Vata has stiffened the thoracic vertebrae, the hips, and the shoulders in **Isabelle's** case. Gentle and flowing Vinyasas, like the Joint Freeing Series (Stiles1), will gradually release Vata. **Isabelle** may also benefit from nurturing oil massage, warm baths, deep abdominal breathing, and restful practice. However, it may also be beneficial to include a short strengthening routine around the stiffness to build stamina (Kapha) to counteract easy fatigue from always trying to keep the body upright.

As for **Kathleen**, pain in the neck is misplaced Vata which causes stiffening around the chest, the upper back, and the shoulders – Kapha's home. In turn, Kapha accumulates in those areas, causing stagnation of energy flow, excess weight, depression, and headaches. Indeed, **Kathleen's** body constitution is predominantly Kapha with a few Vata tendencies. It seems that Vata has to be 'brought home' first with slow, gentle flowing asanas, Vinyasas, like the Joint-Freeing Series, frequent periods of rest and restorative poses, and conscious deep breathing. Secondly, it would be helpful to start a Pitta-increasing, fire-stimulating practice, quickening the pace of the flowing asanas and working to a point of mild sweat, to uproot the Kapha tendency to stagnate.

4. Common body reading:

Visual evaluation of posture has already been discussed above. Using Mukunda Stiles' chart of postural changes (Stiles1, p.103), the most common findings and complaints (as seen from the case studies) are:

- Torso leans forward (tight tibialis anterior, psoas, rectus abdominis; weak gluteus maximus, thoracic erector spinae), (**Larry**);

- Torso leans back (opposite of above), (**Isabelle**);
- Forward Head (tight SCM; weak upper trapezius), (**Larry, Kathleen, & Isabelle**);
- Collapsed chest; rounded, slumped shoulders (tight pectoralis major, serratus anterior; weak middle and lower trapezius, latissimus), (**Isabelle & Kathleen**);
- High shoulder (tight upper trapezius, levator scapulae on the same side, or lower trapezius, latissimus, erector spinae on the opposite side; weak lower trapezius, latissimus, erectors, pectoralis sternal on the same side, or upper trapezius, levator scapula on the opposite side), (**Larry, Kathleen, & Isabelle**);

Other fairly common imbalances are:

- Lordosis (tight lumbar erectors, psoas, hip flexors; weak middle trapezius, rectus abdominis), (**Kathleen**);
- Scoliosis (imbalance between left and right psoas, erectors, latissimus, abdominis obliques);
- Kyphosis (tight rectus abdominis, pectoralis major, upper trapezius; weak thoracic erectors, middle and lower trapizius), (**Isabelle**);
- Hip elevated and/or twisted (imbalance between left and right QL, abdominis obliques, psoas and other hip flexors, hip extensors, and internal and external hip rotators), (**Larry & Isabelle**).

The most common limited ROM is found in:

- hip flexion (tight gluteus maximus and hamstrings), (**Larry, Kathleen, & Isabelle**);
- internal hip rotation (tight psoas, sartorius, and other external hip rotators), (**Larry, Kathleen, & Isabelle**);
- hip abduction (tight adductors);
- hip adduction (tight IT band, TFL, and gluteus medius), (**Larry, Kathleen, & Isabelle**).

The most common weakness is found in psoas, sartorius, hamstrings, gluteus maximus, rectus abdominis, erector spinae, latissimus dorsi and teres major, middle and upper trapezius, and deltoids. Please refer to the Summary of Findings (1C) for each client, to note their particular muscle weakness.

5. Contraindications:

Any exercise, asana, or activity that moves the body further into the existing misalignment should be avoided. This is any action that stretches the already weakened muscles and tightens the contracted muscles. Examples:

- avoid Sarvangasana (Shoulder Stand) and Halasana (Plough) for kyphosis (**Isabelle**);
- minimize Trikonasana (Triangle) and Ardha Matsyendrasana (Half Spinal Twist) toward the tight side in scoliosis and/or elevated hip;
- minimize biking, running (tightening the glutes and the hamstrings) if the torso already leans back, (as in **Isabelle's** case; also, gently stretch the muscles before the workout, and let them release with restorative postures right afterward);
- avoid prolonged sitting (contracting the hip flexors) if the torso already leans forward, (**Larry**);
- avoid slumping (weak erectors, latissimus, and posterior deltoid) if the shoulders round, (**Larry, Kathleen**);
- avoid overusing the side of the body that is already overdeveloped, like with a one-sided activity like tennis and golf; instead, balance the less used side with exercise. **Larry's** example: strengthen left latissimus in high left shoulder.

Any activity or yoga asana that increases pain should also be avoided. However, some discomfort, as in strengthening weak psoas in Dandasana (Stick), and weak latissimus and erector spinae in Ardha Matsyendrasana (Half Spinal Twist) should be expected.

6. General Recommendations

The following are progressive through three phases.

A. Immediate Therapy / Relief of Pain:

Joint Freeing Series (Stiles1, pp.121-133), especially for the hips, the spine, the shoulders, and the neck, should be practiced to reduce pain, to create more freedom around the joints, and to bring awareness to ROM and strength.

Sacro-Iliac joint stabilization exercise (Stiles2, Appendix ii pp.1-2) is often necessary to begin creating muscular and postural balance around the pelvic girdle. Usually, discomfort can be addressed through pelvic elevation.

Restorative and gentle yoga asanas can be practiced to release chronic stress and muscle tension, especially around the spine. Some examples:

- Child's pose (Balasana);
- Energy Freeing pose (Apanasana) and its variations – knees apart, one leg extended down, and others;
- Gentle Bridge pose (Sethu Bandhasana) and its variations – rolling the spine off and on the floor, pelvic tilts with the sacrum on the floor, and others;
- Gentle Cobra (Bhujangasana) and its variations; and
- Abdominal twist (Jatara Parivartanasana).

In addition, Judith Lasater's book "Relax and Renew" may be consulted as it covers a wide range of restorative asanas, most of which are ideal for postural imbalances: Supported Child's pose, Supported Bound Angle pose, Supported Bridge pose, Elevated Legs-Up-the-Wall pose, Hanging Dog pose, Simple Supported Backbend, supported twists, and quite a few others (Lasater). It is best to practice with a qualified yoga teacher or therapist.

Rest in Savasana, Yoga Nidra, or any form of conscious deep relaxation will reduce general stress and tension.

Breath work (Pranayama):

- Wave Breath can be introduced to create awareness and freedom in the chest and abdominal cavities and to release stiffness (Vata) and blockage on the energetic level, Pranamaya kosha (Stiles1, pp.53-54);
- Deerga Swasam, or Three-Part Breath, (as practiced in Integral Yoga) can be used for similar purposes, and in particular to encourage the parasympathetic nervous system response to relax and let go of stress and muscle tension (Swami Satchidananda, p.142).

Visualizations may be incorporated into a breathing exercise. Because postural contractions may indicate the need for protection against the world, one could visualize inhaling warming, nurturing, and healing Energy from Mother Nature and exhaling tension, fear, burdens, and or 'armoring'. Sometimes, it is more helpful to have only positive associations, so one may inhale Healing or Lightness and, on the exhale, feel it 'sink into' the tight areas or one's inner center.

Another way to release emotionally-caused postural contractions, usually around the heart and the throat, would be to induce Energy flow through these areas by expressing pent up emotions: singing, chanting, even screaming, or punching a bag if it is not contraindicated physically. Simhasana (Lion pose), loud and unrestrained, may also be practiced effectively for this purpose (Swami Satchidananda, p.123).

Bodywork may also be appropriate for most postural aches:

- Swedish and Esalen Circulatory Massage release general tension;
- Deep Tissue Sculpting, Structural Integration, and other forms of Rolfing release deeper patterns of myo-fascial tension and emotional holding;
- Trager work and Sensory Repatterning re-educate the body about its natural, organic movement through Slow Motion Passive Joint Movement and Undulations (IPSB);
- Oil massage, steam therapy, and saunas may also be helpful (see Ayurvedic Recommendations).

B. Stabilizing Situation and Making Lifestyle Changes:

The first phase of recommendations should be deepened with more repetitions and higher awareness in all exercises, yoga asanas, and breath work.

Other practices, particular to the client's condition, should be introduced. As a general rule, appropriate for most postural imbalances, a balance has to be created between a few specific opposing muscle groups. Balance means even strength and elasticity between all muscles. How to achieve it? There are three main guidelines: stretch the tight, strengthen the weak, and release the chronically contracted. From the information found in the Common Body-Reading above, the following are groups of muscles that are most significant for posture. (Please note that only the most out-of-balance muscles are listed).

Around the Pelvic Girdle:

- Hip flexors (psoas, rectus femoris, sartorius, TFL, and adductors) vs. hip extensors (hamstrings and gluteus maximus);
- Hip abductors (psoas, TFL, gluteus medius) vs. hip adductors;
- Hip external rotators (psoas, sartorius, gluteus maximus, posterior gluteus medius, and the deep 6) vs. hip internal rotators (TFL and anterior gluteus medius).

Around the Trunk:

- Rectus abdominis vs. erector spinae and psoas;
- Quadratus lumborum and abdominal obliques vs. the same group on the other side.

Around the Pectoral Girdle:

- Shoulder flexors (anterior deltoids and upper fibers of pectoralis major) vs. shoulder extensors (posterior deltoids, lower fibers of pectoralis, and latissimus);
- Shoulder adductors (anterior deltoids and pectoralis) vs. abductors (posterior deltoids and indirectly middle trapezius);
- Shoulder external rotators (posterior deltoids) vs. shoulder internal rotators (anterior deltoids, pectoralis, and latissimus);
- Shoulder elevators (upper trapezius) vs. shoulder depressors (latissimus and lower trapezius).

Stretching and strengthening yoga asanas and other exercises for any of the above muscles can be found on pages 254-255 of Mukunda Stiles' book (1). The instructions on how to perform them properly are included in that same text. Also note Ayurvedic recommendations for asanas above.

From working with clients, the most often chronically contracted muscles are hamstrings, psoas, TFL, gluteus medius, deep 6, adductors, pectoralis major, and upper trapezius. According to Mukunda Stiles, one way to release a muscle is to bring it into a gentle contraction, support it with

props, and allow it to rest for some time (Stiles3). One can get creative in finding comfortable ways to do this. Examples:

- to release the hamstrings, take the hip into extension and the knee into gentle flexion as in Runner's Stretch, (**Larry**), (see Mukunda's book (1) for details);
- to release the psoas, take the hips into gentle flexion, abduction, and external rotation and increase the lumbar spine curve as in reclining back over a bolster with the legs in supported Bound Angle pose (Lasater);
- to release pectoralis major, from the Stick pose (Stiles1), bring the arms into horizontal adduction (as in giving yourself a hug) and rest the elbows on a chair or cushions;
- to release upper trapezius (and deeper neck extensors), bring the head back into gentle extension while lying on one or two bolsters or blankets as in Supported Bridge pose (Lasater) and let the top of the head rest on a soft surface.

Other effective ways to release chronic contraction are focused breathing into the contracted area and exhaling the tension (**Larry**), visualizing a release, and palpations and gradual compressions into the origin, insertion, and along the fibers of the contracted muscle. The case studies present more detailed information on sequencing of these exercises specific for each case.

Simple Vinyasa sequences, done slowly and with awareness, can also be added to balance Vata, creating the feeling of fluidity. These may include gentle Sun Salutations and Half Sun Salutes (Appendix E).

Intercostal Breathing is another appropriate breathing technique (Stiles1, p.55). It builds strength and elasticity around the ribcage, thereby restoring postural balance in the abdominal and thoracic areas on a deep and long-term level.

A crucial component of reversing poor posture is to become aware of what creates it in the first place. One should bring regular attention to posture not only in a yoga class, but also in the midst of problems, emails, and phone calls (Swami Ramananda). Learning, or re-learning, the proper body mechanics has to be consistent for success. One may use special props like car seat cushions, rolled towels, other back supports, and heelless shoes to ensure proper posture and be a constant reminder. However, the most important and reliable tool is developing continuous and effortless awareness. Here are some practical suggestions:

- Find out which muscles cause imbalance (from therapist), find them on your body, and bring awareness to them by palpating (if appropriate), tensing/releasing them, and 'breathing into' them throughout the day;
- Make a point to consciously practice balanced posture as a brief daily exercise, in the form of the Mountain pose (Tadasana) and the Seated Mountain pose. Refer to the instructions for these in Judith Lasater's book. Maintain gentle natural spinal curves and notice how it feels;
- Put up reminders around places where you spend some time (office desk, kitchen table, computer screen, steering wheel or dashboard, corner of the TV screen – let's be real) with short signs like "POSTURE!" or "ALIGNMENT!" And whenever you glance at it, make an effort to lengthen the spine through the top of the head and allow the rest of the body to relax around that central core, releasing the hips and the shoulders, opening the chest, and taking a few Wave or Three-Part breaths (Swami Ramananda);
- Maintain awareness of easeful breathing throughout the day – ask: How free is the breath? If it's not: How can I move and reposition to make it freer?
- Find ways to neutralize one-sided activities: develop the other (less used) side – play golf, tennis, etc. with the other hand just for fun, or for workout, or to develop patience; carry weight (bags, books, surfboards) on the non-habitual side;

- Place your reading material in front of the eyes to avoid slouching and dropping the head forward.

C. Maintenance / Keeping the Condition from Re-Occurring:

For someone with a postural imbalance, it seems ideal to develop a regular Hatha practice. All asanas and exercises from the preceding stages, including proper body mechanics, can become part of a consistent routine.

To maintain a vibrant posture, one may find it helpful, especially complementing their regular physical practice, to keep up massage therapy and other forms of bodywork, saunas, and cleanses.

To prevent skeletal or muscular stiffening and maintain healthy bones and tissues, the diet must also be adjusted according to the individual constitution. In general, a balanced organic whole-food diet with plenty of unrefined grains, legumes, leafy greens, seaweed, other vegetables, fruits, some nuts and seeds should be adopted to ensure elasticity of all body tissues. Too much animal, processed, and refined food, especially with high refined sugar and salt content, stiffens the body, often causing arthritis, osteoporosis, and other bone-deteriorating conditions related to posture (Pitchford).

Due to the deep psychosomatic relationship between the body and the mind, it is essential to cultivate a positive and accepting attitude toward the body. Seeing our pains and aches as gifts and lessons in mindfulness and body awareness will be the most transforming change in the long run. One should also minimize negative self-talk and destructive languaging:

- instead of “My back’s killing me”, use “My back is telling me something I’ve been avoiding”;
- instead of “I have bad knees (hips, back, shoulders, etc.)”, use “My knees have been begging for my attention”.

Equally important is to give oneself enough time to have fun, play, rest, and nurture warm and supporting relationships with family and friends that open the heart and release a stiff body and attitudes. Making a point (whenever appropriate) to practice “hugasana” and the ‘corners of the mouth to the ears’ stretch will go a long way. Forming a sangha or just getting together for an asana practice, meditation, heart-opening chanting, potluck meals, and movies is also effective.

7. Questions and Answers from yogaforums.com

Note recommendations in **bold**.

mariaalive ▢ Posted: Wed Oct 13, 2004 5:22 am

Post subject: Flat thoracic curve

Please comment and give suggestions for someone with a flat upper spine, who suffers from shoulder stiffness and neck pain. This person also has a strong vinyasa practice. Thanks

Answer: The thoracic spine cannot be rounded outward by forward bending. However it can regain some curvature by increasing **the lumbar curve below it and also by toning the erector spinae** in general. However, my main suggestion would be to **strengthen the psoas**. This muscle does hip flexion thus lifting the legs, and pulls the lumbar forward to create a natural forward curve. The former motion can be toned by **leg lifting standing, sitting or lying**. The latter can be toned by trying to **arch the lower back in seated poses, forward bends, and especially in dog pose**. There are plenty of opportunities to use the muscle in all asanas.

In addition I would also give plenty of poses which use the shoulder rotators and extensors such as

eagle, face of cow/light, bow, camel. If the pain is more persistent, then I would use my **Joint Freeing Series**. Namaste, Mukunda

□ Posted: Thu Aug 05, 2004 6:41 am

Post subject: Balance the spine

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

Answer: 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. Namaste, mukunda

□ Posted: Tue Feb 03, 2004 12:32 pm

Post subject: Pectoralis Minor & rounded shoulders

I work with middle aged students who are very active in fitness activities like running, cycling and weight lifting; I see many with rounded upper backs and forward shoulders and head with very tight muscles in the shoulders and upper arms. I personally work at a computer and phones daily and have a slumping upper back that I am working at correcting too. I noticed in my anatomy books that a tight "Pectoralis Minor" is a possible contributor to pulling the shoulder off the back and forward. It originates at the Coracoid Process (?) and inserts at the 3, 4 & 5th ribs at the front on the chest. It's the only muscle that has no exercise anywhere that I can find that will stretch it.

Answer: The Coracoid Process is a small bone on front of the body, a portion of the shoulder blade. It is the same as Pectoralis major just more specific. To really stretch it the best approach is **hands on bodywork**. It is too small a muscle and deep for yoga to stretch without supervision of one who knows anatomy intimately.

□ Posted: Fri Jan 30, 2004 7:55 am

Post subject: flattened neck

I just got done reading structural yoga therapy. It was awesome; I will treasure it and use it for the rest of my life. Truly a great book. Thanks. One question about reversed cervical curve in the spine. Any yoga asanas good for this condition? The neck strengthening exercises are very good and helpful. But what else? Thanks again brother. Warm regards. yoga teacher from NYC

Answer: By reversed cervical curve I believe you mean a flattened neck, not one going sideways. For that, the variations of **sternocleidomastoid muscle exercises** on page 180-181 are best. You can also add **cobra with hands behind head to strengthen the upper trapezius**. Namaste

□ Posted: Thu Jun 12, 2003 2:56 am

Post subject: dish back

I attended the SYT session in Calgary this spring. You pointed out a condition that you termed "dished back" - lack of curvature in the upper back. It was mentioned that this can cause tension in the neck and lower back. Can you provide more info – thanks, Madeleine

Answer: This is essentially a flat upper spinal column between the scapula only. Above and below the saucer shape the thoracic spine is naturally formed with posterior curves. This shape of the upper thoracic is not uncommon, just rarely mentioned. Yoga poses aggravate it when there is too much emphasis on back bending the upper spine. All poses should be taught with emphasis on **maintaining the natural spinal curves**. Lacking this tension will tend to develop above and below the curves that have been reversed. The same is true for scoliosis.

□ **Posted: Wed Jul 02, 2003 7:01 pm**

Post subject: dowagers hump

I'm 31 and recently have started an exercise program consisting mainly of running and yoga; I find they compliment each other nicely. My shoulders and neck naturally hump forward so I look like I'm slouching and I frequently have pain in my upper back. Could you suggest some asanas or a series of asanas to help correct my posture and back pain. I have heard that slouched shoulders and upper spine cause inefficient breathing. I would love to start looking after this problem now because I'm sure it will only get worse with age. Thank you

Answer: I would suggest focusing upon **strengthening your latissimus dorsi and middle trapezius** muscles. Poses that will do that are **cat sinking** to also **emphasize serratus anterior** muscle plus **bridge, cobra, and camel**. This posture may diminish your capacity for intercostal motions of respiration. Emphasize that also by **pressing on lower ribcage as you exhale**.
Namaste, Mukunda

□ **Posted: Fri Apr 26, 2002 4:45 pm**

Post subject: How to Straighten the Spine?

I heard several approaches:

- 1) Tuck chins in; lift crown gently; adjust it until the neck portion feel good;
- 2) Relax the lumbar and cervical vertebrae into their curves; then the sacrum and thoracic vertebrae will naturally set into their curves; tuck chin; lift crown;
- 3) Tuck belly in gently; sacrum will drop a bit; push up along the lower curve of thoracic vertebrae, it will expand the lower rib outward; chin in; lift crown.

When I started Yoga a few months ago, straightening spine seems straightforward. But now it gets complicated again. Namaste

Answer: In all poses, work to **maintain the natural four curves** – lumbar and cervical forward; thoracic and sacral posterior. Always **focus on lengthening the spine** this will straighten it if there are lateral curves (minor varieties of scoliosis). I do not recommend tucking tailbone forward to flatten the lumbar and abdominal as this inevitably leads to sacroiliac troubles.

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9. Appendix

A. Supine Variation of the SI Stabilization Exercise

Starting Position (SP)

On the back with the Right knee pointing up, foot on the floor, and the Left hip externally rotated with the knee pointing out, feet next to each other (Figure 1).

Figure 1



Pelvic Tilts

Inhale – tilt the pelvis forward, arching the lower back and lifting the belly (Figure 2);

Exhale – tilt back, rounding and flattening the lower back to the floor.

Figure 2



Pelvic Rolls

Inhale – engage the gluteus maximus and hamstrings of the Right leg (pressing the foot down) to roll the Right hip slightly off the floor to the Left (Figure 3); keep the Right knee pointing in the same direction as the Right hip (not externally rotated).

Exhale – release down to SP.

Figure 3



B. Posture Test Form

Name _____ Contact _____ Date _____

1. Spinal Curvatures (mark their curve on this spectrum)

Cervical	None	Gentle	Excessive
Thoracic			
Lumbar			
Sacral			

2a. Frontal Plane (a basic drawing can be made to indicate how many inches off the plumb line – see Appendix C below)

Looking at their Left			Looking at their Right	
L		crowns of head		R
L		Ear		R
L		Acromion		R
L		Greater trochanter		R
L		Lat. Knee condyle		R
L		Lat. Ankle malleolus		R

2b. Against the wall test: Contact with Gluteals and Scapula

3. Mid-Sagittal Planes (indicate how many inches off the plumb line)

Looking at their Back		
L	Cervical	R
L	Thoracic	R
L	Lumbar	R
L	Sacral	R

Looking at their Front		
R	Nose	L
R	Chin	L
R	Jugular notch	L
R	Xiphoid process	L
R	Navel	L
R	Pubic symphysis	L

4. Transverse Planes (mark any difference in height in inches)

Anterior	
R	L
across Eyes _____	
clavicles _____	
iliac crests _____	
knee joints _____	
ankle joints _____	

Posterior	
L	R
ear lobes _____	
spine of scapula _____	
inf. Angle _____	
post. Iliac crests _____	
S. I. dimples _____	
gluteal fold _____	
medial knees _____	
medial ankles _____	

5. Body Splits (indicate general balance in between)

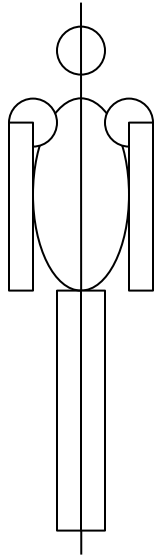
Left – Right Front – Back Top – Bottom Head – Body Torso – Limbs

6. Sense of Posture: feeling what degree of freedom, balance, and energy while standing – heaviness, sinking, and collapsing or buoyancy, grounding, and floating.

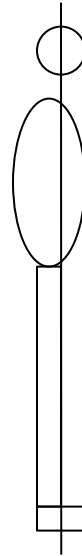
7. Free, not constricted, diaphragmatic Breath

C.

Mid-Saggital



Frontal



D. Posture and Emotions

“Each client holds their own truth, regardless of what the theory states” (Osborne-Sheets)

External body part and/or body reading	Other conditions	Theoretical mental & emotional relationship
Right side more developed; left -weak & prone to injury		Yang, anger, more ‘Armor’. Masculine, assertive, aggressive, may be due to birth into harsh environment
Left side - developed; right – weak, tight muscles, joints		Yin, feminine, emotional, passive, creative thought, holistic, receptive, fragile
Bottom half – more developed	Headaches, asthma, hand arthritis, other up-body issues	Earth connection, dependency. A private, homey, grounded, stable, feeling person, comfortable in inner expression, balancing, supporting, rooting.
Top – more developed	V veins, sprain ankles, sex dysfn, other lo-body issues	Doer, Achiever. Lack of emotional stability & self-support. Socializing, action person. Outward expression, interpersonal communication and manipulation.
Tense/injury in Rt leg		Difficulty ‘taking a stand’ in an active way
Tense/injury - left leg		Difficulty ‘taking a stand’ in an receptive way
Tense/weak in Rt arm		Difficulty making contact with others, hard to be assertive, actualizing feelings through the arms
Tense/injury -left arm		Difficulty reaching out to others in a receptive way
Front – more developed		The social, conscious self that we identify as ‘me’. Our ‘front’. Responsible for the aspects of life that we are aware of: sadness, happiness, longing, caring, loving, communicating, desiring, moving.
Back (spine and posterior legs) – more developed		The private, unconscious self. The storehouse for what we don’t want to deal with or we don’t want others to see. Responsible for unwanted negative emotions and memories: anger, fear.
Head and Face		Our mask that we present to the world. Our most social aspects. In the West, the seat of our Mind, Intellect, and Reason.
Body below head		More private than above the neck. In the West, it’s our more emotional, animal, less creative aspect.
Torso		Our core, self-serving, self-understanding, self-protecting, our ‘being’
Limbs		Our ‘doing’: acting, moving, communicating, connecting with others.

External body part and/or body reading	Other conditions	Theoretical mental & emotional relationship
Extra Weight		Unreleased, pent up, blocked feelings
Torso – full, vital, strong; Limbs – weak, undeveloped	Migraines, less blood in body periphery	Someone full of feelings and passions but has difficulty expressing or actualizing them. “All bottled-up.” Needs to extend energy into the limbs.
Torso – thin, limbs – overdeveloped		Someone who’s a ‘doer’. Has difficulty making contact with their core, too busy acting out the functions of their legs and arms. Extrovert. Being still and quiet is hard and uncomfortable.
Chronic mscl spasm		Phys., emotional, or mental stress – “armoring”
Any joint		Psychosomatic crossroad – mediator of the forces that flow through it, physically and psychologically – can be either graceful or spastic
Healthy, unblocked, untwisted feet		Someone stable and grounded physically and emotionally, having good contact with Reality.
Flat feet	Over-develop’d back & neck to counter lack of support in lower segment.	Ungrounded, hockey-puck way of relating to the world. Unable to put down roots. Ease of motion, but no stability. Difficulty to stay in relationships and responsibilities. Nervous. Need to move without good reason.
Clutching feet – toes curl under, arches clench	Often, overdeveloped thighs.	Unresolved possibility of movement or running away – the impulse was not acted on. Clutching attitude. The need for self-control to compensate for lack of contact with the Earth. Tight posterior legs, knees, lower back.
Weight on heels	Clenched jaws, tight belly, short breath, tight chest, rigid pelvis and lower back	False sense of stability. A ‘pushover’, easily manipulated. Attitude of determination and control on the outside, but inside – deep feelings of fear and instability. Anxious, afraid. Has hard time relaxing or feeling comfortable in spontaneous situations.
Tip-toe		Someone having a hard time making contact with the Earth, phys. and psychologically. Floater, dreamer. High imagination. Artistic.
Lead feet		Someone who feels weighted down on the outside and inside. A strong need to be grounded, stable, to know one’s position in life. Difficulty in dealing with motion and change. More reliable and set in their ways, less creative and active. Result of chronic fear and anxiety – when one has to overemphasize the need to be secure and stable.
Ankles and knees		Relate to how the person deals with progress or resistance to progress. Like feet, relate to stability, grounding, contact with Earth, ease of movement and change, self-support, and sense of ease. If blocked, all these suffer.
Weak, under-developed legs	Compensate with arms, neck, jaws, eyes, intellect	Hard to stand ‘on their own two feet’, unclear about self-image and position in life, dependent on others for support and confidence.
Massive, over-muscled legs		Rigid personality, need security, always ‘holding on’. Hard time with change, movement, spontaneity.
Fat, underdeveloped legs		Sluggish to move through life. Hard time initiating action and following through. See lead feet above.
Thin, tight legs		Go-getter, moves through life erratically, sometimes with ease and fluidity, other times not.
Tight hamstrings, lower back, and neck muscles		Relate to too much self-control, difficulty in letting go, and the fears of falling, falling over, falling in love, losing touch with reality, losing consciousness, being rejected, abandoned, taken advantage of, controlled, loss of support, and loss of life.
General tightness in Pelvis		Fear of Life, vitality, sexuality
Inhibited fluid walking, dancing		Fear of Life, vitality, sexuality
Pelvis tipped upward – flat butt & low back	Leg injuries, sex dysf., bladder irrit’y, abd tension, low back pain, tensn headaches	Lessening of sexual energy and focus, holding in of sexual feelings. Focus on achievement rather than feelings. Usually, also rigid, undeveloped legs & overdeveloped chest.

External body part and/or body reading	Other conditions	Theoretical mental & emotional relationship
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Pelvis tipped downward – lordosis	Eliminative disordz, hemorrhoids, low back pain, GI stress, prone to asthma, chest cold, bronchitis	Heightened sexual energy and focus, feeling-oriented, but may have difficulty with sexual release – over-congested energy. Often overdeveloped legs – need for security, expanded belly – locked up internal feelings, rigid diaphragm – withheld anger, tense or weak chest – hard to self-express and self-assert.
Buttocks (gluteus max) – held tight, chron’ly contracted	Low back pain, hemorrhoids	‘Tight-ass’ person, holding on to expressions and feelings. Blocked first charka – over-concerned with material and survival needs, difficult to give and take freely, need to hoard things.
Tight, contracted belly	Intest. Ulcers, spastic colon, belly pain	Holding on to unexpressed feelings, nervousness, being upset
Expanded belly		Abundance of internal trapped feelings
Pain in lower back		Difficulty integrating the top (authority, duty) and the bottom (sexuality, self-control, self-support)
Tight lower back		Compulsive, over-controlling in daily acts
Flexible lower back		Impulsive, spontaneous in daily acts
Rigid diaphragm	Contracted belly; nervous stomach disrdz, liver & gall bl diz, peptic ulcer	Withheld anger and other unwanted feelings; limited feeling, breathing, and energy flow potential; withholding from sensing pleasure or anxiety
Short breath		Nervousness, anxiety, being upset, not allowing to feel
Chest		Feeling focuser, amplifier, and translator
Tight, contracted, collapsed chest	Asthma, chest cold and pain, depression	Fear of being left, neglected; deflated ego; crushed love, fearful self-protection, feeling unhappy, depressed; more of a ‘taker’ than ‘giver’
Large, overdeveloped chest	Underdeveloped pelvis & legs, hypertension, high blood pressure, heart prbms	Need to be in control and appear strong; putting up of ‘I’m tough’ front, ‘blown-up’ ego; hard to receive energy and love, but ease in expressing power and rage, loss of tender aspects of self, hard to share true feelings.
Tension, muscle pain around Heart	Rounded shoulders	Chronic over-self-protection, armor against hurt, locked up feelings of warmth and nourishment
Gen imbalance in pectoral girdle		Blocked expression of emotion
Gen shoulder tension		Fear of responsibility, feeling of burden
Bowed, round shlders		Feeling the weight of the world, overburdened with responsibilities
Elevated shoulders		Chronic fear
Square shoulders		Overblown ego, self-assurance, power
Slumped forward, hunched shoulders	Shallow breath, tight chest, belly, diaph’m	Crushed love and fearful self-protection, fear of being hurt, vulnerable
Rigidly retracted shoulders	Arthritis in shoulders, arms, hands	Holding back Anger or Compassion, wanting to strike out but holding back
Right shoulder lower		Relating to the world in a masculine way, controlling, assertive
Left shoulder lower		Feminine way of relating to life, receptive
Weak, under-developed arms	Cold, clammy hands	Holding energy and expression in the chest or belly, and shoulders. Hard to reach out and take hold of life. Sense of powerlessness, lack of initiative in relation to people and things.
Massive, over-muscled arms		Lack of grace and sensitivity in expressing oneself and in contact with others. Treating people as objects. Resort to brute force rather than communication.
Thin, tight arms	Joint injuries, strains, twists	Clutching, grasping quality in personal attitudes. Inconsistent and spastic energy. Difficult to hold on to things for long.
Fat, underdeveloped arms		Sluggishness of action. Hard to initiate and sustain activity. Clumsy, no fluidity.
Tight upper back		Unexpressed rage and anger
Tight neck		Interpersonal expression & communication difficulties or conflict with self-image. Too high demand for communication coming from the torso, neck not able to process it fast enough. Taking on too many responsibilities. Conflict between feelings (torso) and intellect (head).
Forward head		Encountering the world with rational self first, then with feeling self
Head tilted right		Arrogance and defiance

Head tilted left		Cute and playful attitude
Head bent over fwd		Defeat and emotional exhaustion, difficulty with facing reality
Long, graceful neck		Proud attitude
Stout, bull neck		Aggressive attitude to life's demands
Tight throat	Shallow breath Unable to belly laugh Soft faint voice	Fear of expression of any of the following actions: talking, crying, laughing, eating, spitting, screaming, yelling, and swallowing, especially if these were stopped prematurely when young.
Tight bottom jaw	Overbite Lisp	Prematurely stopped crying, blocked tears. Repressed anger and violence. Fear of speaking up. And almost any other emotion can be held here that gets its expression through mouth and face.
Receding jaw	Overbite	Withheld sadness and anger, or an urge to cry or scream. Difficulty to express one's emotions and beliefs orally, hard to speak up in groups, voice opinions, defend oneself.
Protruding jaw		Defiant attitude. Determined way of being in the world.
Clenched jaws		Over-self-control. Controlling what wants to be expressed: swallowing the emotions.

E. Half Sun Salutations

This is the basic outline which can be adjusted for special conditions and modified by many variations.

1. Begin in Tadasana, Mountain pose, with the palms together at the chest.
2. Inhale arms up alongside the ears, out through the sides or through the front, and gently arch back.
3. Exhale and hinge forward from the hips and sweep down with the arms to Uttanasana, Standing Forward Bend.
4. Inhale and elongate the spine, lifting forward with the chest while holding the ankles.
5. Exhale and step back with the left leg into Lunge.
6. Inhale the arms up alongside the ears.
7. Exhale and release the arms down, back into Lunge.
8. Inhale and step forward with the left leg into Uttanasana.
9. Exhale and fold a little deeper from the hips, holding the ankles.
10. Inhale and lift all the way up, leading with the chest, raising the arms up, and arch back.
11. Exhale the arms down, palms together at the chest.