Thoracic and Lumbar Pain and Stiffness

Structural Yoga Therapy Case Study

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1- Case study: FW

A – Initial intake: April 3, 2008

FW is a 52 year old, semi-retired man who was raised and lives in the Washington DC area. He has been married for 23 years and has an 18 year old daughter who began university studies away from home last September. He appears easygoing yet energized, passionate about the things that he cares about. FW is a community activist with a passion for the environment and social justice, who volunteers at his church, where he is involved with overseas community projects. He holds a leadership role in the local organization Rebuild Together. A well traveled, former employee of the World Bank who is certified as a financial analyst, FW is highly intelligent and possesses a sharp, active and inquisitive mind. He spends much of his time with his community and family, studying the stock market and the economy, caring for his elderly parents, and taking bicycle rides.

Over the last 2 years, he has become a committed member of my yoga class and has noticeably benefited from the practice, increasing his flexibility and stamina while improving body awareness. His hamstrings have opened up noticeably and his stamina in standing poses has improved. FW's intention in beginning yoga classes was *to develop his flexibility and improve his posture and ability to relax*. FW attends yoga class at least once a week, works out at the gym and bicycles moderately twice a week. He has been enjoying bi-weekly bodywork and massage for 8 years. He appears fit, has a lanky frame, yet his posture reveals some heaviness of spirit.

Over the last few years, FW has become *increasingly aware of the impacts of age upon his body*. This manifests mostly in stiffness and a feeling of generalized tightness or constriction in the body. FW is a motivated client who wishes to be *proactive about his own physical aches and pains and health*.

There are a number of serious familial health concerns that he is dealing with at this time. Besides his birth parents failing physical and mental health, FW's in-laws are also facing grave health concerns, and his wife, is about to have a knee replacement 300 miles from their home. He himself feels healthy *for the most part.* FW himself has had thyroid cancer, which was treated 17 years ago. He currently takes Synthroid for this condition. At this time he is not under the care of a medical professional.

For this study, we agreed to a 3 month commitment. His wife was having knee surgery in New York the following week and he was going to accompany her out of town for that period. Still, he wanted to find the time and agreed to practice his recommended homework for 20-30-minutes, as often as possible. He was motivated to include it in his day, but did not know how the logistics would unfold. We agreed to speak in a week and meet within the next two weeks.

My general sense of FW as an individual client is that he is straightforward about sharing things, but that it takes awhile for him to open up more deeply. Our conversation and his responses to questions remained relatively on the surface. In response to an open ended question such as "how are you doing?" FW usually shared a report about the things he did, the condition of his family members, and how he spent his time during the week. It was not as natural for him to share his feelings and inner workings about his life. As we proceeded through our sessions, FW did reveal a bit more of himself, yet I felt

that there remains underlying emotional material hidden from both me and him as well. The verbal exchanges in our sessions were mostly about the physical body and working to re-establish comfort and improve strength and awareness, as if he was working with a physical therapist.

1) Symptoms, Pain Level, and Goals

FW came to treatment specifically for help with his mid-back area which he describes as being *painful and uncomfortably stiff* for the past 5 years and for long standing pain in his left lumbar. FW characterizes his thoracic discomfort, which occurs from T 6-8, as a level 5.5 pain. This pain is difficult to pinpoint and is intermittent. His lumbar pain, which occurs from L 1-5, is level 4 and increases with right lateral flexion. Sometimes, they are worse in the morning and improve with movement, but there is no regular pattern in either area. FW also experiences *a catching pain* in his front left hip flexor, in the vicinity of the rectus femoris or sartorius attachment.

This past winter, an accident exacerbated his back issues. FW slipped on the ice on his front stairs and landed free fall on his buttocks. Since then, his previous problems have worsened and he has felt a *generalized sense of stiffness and tightness in his back. He would like to feel more comfortable in his body.*

FW shared that he is feeling older and weaker. He expressed a hope that we could address his feeling of general stiffness, and his postural considerations, which he mentioned a number of times during our meetings. *I want to able to be comfortable to sit up straight and to be upright, when I'm 80.* Although FW initially stated that he was not under a lot of stress, the longer we spoke the more he revealed the stressors in his life. His involvement with the stock market is an ongoing stress as well as his parents care and condition. At one point he shared that he was *stressed in general.*

Our goal for the back is to reduce the pain in the thoracic and lumbar areas. A secondary subjective goal is to reduce his generalized stiffness and to improve posture.

B – Physical Assessment and Posture Body Reading

1) Body Reading

It was difficult for FW to stand still during the body reading. I get the sense that he is a bit uncomfortable in his body. FW has flat feet but they do not cause him trouble. The SI (equal movement on both sides) and leg length tests did not reveal any problems or imbalances.

- Tall, long, angular and lean frame; tends to go underweight.
- Postural stiffness and sense of lack of fluidity, especially in the torso and shoulders.
- Ankles pronated, and flat feet (not troublesome to him).
- Bowed legs
- Small lordosis

- Right spinal curvature T 8-12 (6 degrees- this may be associated with the high right shoulder.)
- High right shoulder; left arm hangs lower.
- Rounded shoulders
- Slight forward head

2) Perceived Stress Scale

- The PSS indicated that he was *feeling stress; fairly often* and *out of control; very often.* Given the health issues surrounding him, this does not seem extreme.

3) ROM Assessment

Joint Action	ROM	April 3/08	April 3/08	June 10	June 10
ANKLE	Norm°	Left	Right	Left	Right
Plantarflexion	50°	73	80	53	50
Eversion	20°	30	35	24	32
Inversion	45°	64	58	46	50
HIP					
Flexion (Straight-Leg Raise)	90°	75	71	70	63
External Rotation (Supine)	45°-60°	37	38	56	62
External Rotation (Prone)	45°-60°	30	36	31	40
Internal Rotation (Prone)	35°	52	40	50	50

4) Muscle Test Assessment (see appendix)

Joint Action	April 3/08	April 3/08	June 10	June 10
	Left 1-5	Right 1-5	Left 1-5	Right 1-5
Hip Flexors & Abs (Supine)	3.0	NA	3.5	NA
Trunk Flexion (Supine)	3.5	NA	4.5	NA
Sartorius Isolation (Supine)	2.5	2.5	4.0	3.5
Gluteus Maximus Isolation (Prone)	3	3	2.0	2.0
External Rotation (Prone)	2	2	3.0	3.0
Internal Rotation (Prone)	2	3.5	3.0	3.5
Quadratus Lumborum (Seated)	3.0	3.5	4.5	3.5
Trunk Extension	3.5 upper	3.0 mid	4.5 upper	4.0 mid

C – Summary of Findings

Weak Muscles to Strengthen	Tight Muscles to Stretch	Release
Sartorius (hip: external rotation, flexion; Knee Flexion)	Internal Hip Rotators: Tensor Fascia Lata, Gluteus Medius and Minimus	Gracilis
Rectus Femoris (knee extension, hip flexion)	Hip Extensors: Hamstrings, Gluteus Maximus	Rectus Femoris
Gluteus Maximus (hip exten., ext. rotation)		Hamstrings
Quadratus Lumborum (torso lateral flexion)		
Hip External Rotators (Gluteus maximus, psoas, sartorius)		
Hip Internal Rotators (Gluteus medius/minimus, TFL)		
Rectus Abdominus (trunk flexion)		
Trapezius (Trunk Extension)		

D –Recommendations

April 3, 2008

Having completed the body reading and ROM testing the previous week, this session was used for muscle testing assessment. Using the results, a preliminary program was designed, concentrating physically on his middle back discomfort, and psychologically on his stress level. The general guidelines to FW highlighted that he perform the exercises with ease and comfort in movement, while synchronizing a deep yet easy breath the physical movements. The practice is intended to align the physical body (Annamaya Kosha) with the emotional/subtle body (Pranamaya Kosha), thereby moving the client towards sattva, or balanced state of being. Because of his previous training in my classes, I asked FW to try and distinguish the simultaneous stretch and tone in some movements.

Because FW was accompanying his wife to New York for knee surgery later that week, we agreed to make the practice short, 20 to 30 minutes, because we knew that it would be a logistical challenge to fit any more than that into his day.

1. Wave Breath (Sama Vritti Ujjaye: 2 sets of 12 breaths. Effort level moderate, in a supine position. Done gently so as to prevent irregular breathing and strain, which he had experienced in class. Wave Breath was included in order to address his stress level and the impending trip out of town for his wife's surgery.

2. JFS (6-8 reps)
    a) # 6 Cat/Cow: To gently stretch and tone erector spinae, rectus abdominus. Intended to warm up the spine and to address the generalized stiffness in his back as well as to bring awareness to the strength of the rectus abdominus. Create and sense a fluid spine.
    b) #7 Sunbird: Strengthen and stretch hip extensors, (gluteus maximus and hamstrings) and hip flexors; rectus femoris, psoas, sartorius and tensor fascia lata (TFL).
    c) #5 Internal and External Hip Rotation: Focus upon strengthening and stretching the internal hip rotators; TFL, gluteus medius and gluteus minimus, and the external rotators; gluteus maximus, psoas, sartorius, and gluteus medius posterior.
3. Savasana: Hands in Yoni Mudra to begin; 5 minutes. Supporting deep relaxation and containing prana.

April 10, 2008

Client was instructed to continue with the current program with some modifications, as he was in New York City waiting for his wife to be released from hospital. He shared that his mind is more easily focused if his attention is paired with movement. Therefore to support self awareness, I modified the program to begin with the JFS exercises as a warm-up, moving with the breath; then 6-12 wave breaths, stopping before stress occurs, using hands on the body to increase sensitivity; followed by a second round of the JFS, focusing on strength. The practice is to conclude with 5 minutes of Savasana. I also suggested that he drink more water, to increase intake to 6-8 glasses per day, as he told me that he was drinking only 3-4 glasses per day.

April 28, 2008

Today we retested for spinal curvature, leg length and the SI test. All were unchanged. We also administered the Perceived Stress Scale, which did not indicate an extreme amount of stress, but did show that he was feeling stress *fairly often*, and out of control, *very often*. Given the family concerns facing him, this is not surprising.

1. Abdominal breathing (using the hands on belly): intended to calm the mind and focus attention, as well as balancing Vata, restoring it to its home in the lower abdomen.

2. JFS (6-8 reps)

    a) #4: Knee Flexion/Extension: Stretch Hamstrings

    b) #5: Internal and External Hip Rotation; widen hands for increased movement; Focus on the strength of both rotations, discerning the different areas of contraction.

c) # 6: Cat/Cow: To gently work the erector spinae, trapezius and rectus abdominus. Focus upon strengthening rectus abdominus and trapezius, intended to provide an increased flexibility to the spine and to address the generalized stiffness in his back.

d) #7 Sunbird: Strengthen hip extensors; gluteus maximus and hamstrings. Hip flexors; rectus femoris, psoas, sartorius and tensor fascia lata (TFL).

1. Add external rotation to strengthen external hip rotators (gluteus maximus and sartorius.) Figure 1.

2. Knee bent: (hydrant) - adds hip flexion to strengthen sartorius. Figure 2.

e) #8 Hip Adduction/Abduction:

1. Standing: We used this position because it was easiest to find the muscles: to increase awareness (prana) of the adductors, and to strengthen the TFL and Gluteus medius. Figure 3.

f) #16 Scapula Adduction/Abduction: to strengthen the middle trapezius and to increase awareness and movement in the mid-back, where the scoliosis is located.

3. Savasana (5 minutes). The attention is toward deeply letting go of the body.

May 6, 2008

After a period of little practice, FW decided that he would be willing to increase his time commitment to 40-60 minute practice sessions. This allowed us to add to and deepen his program. We remain focused on harmonizing and bringing Vata home, increasing prana, and strengthening weak muscles.

1. Ujjayi Breath with Nadi Shodhana (Alternate nostril breath), to promote calm, an inward focus while giving his active mind something physical to focus upon. 8 cycles; 1-2 reps. Figure 4.

2. JFS: number 1-21. A complete body joint freeing practice. Focus on slowing down and experiencing the breath while synchronizing all movements, to restore pranic flow. Adaptations or modifications particular to FW:

a) #4: Focus: Stretch the hamstring

b) #5: Start with left leg; had some weakness in movement with the right leg.

c) #6: Cat; focus on toning the rectus femoris, while stretching and mobilizing the erector spinae.

d) #7: 2 External rotator variations (1.add turnout- strengthening the gluteus maximus and external rotators; 2.fire hydrant- with hip flexion to strengthen sartorius)

e) #8: focus on lengthening same side hip- stretch the Quadratus Lumborum

f) #16: pay special attention to toning the trapezius, extensor spinae.

g) #17: Working with the Quadratus Lumborum-easier to feel the stretch. Adding the awareness of strengthening the other side.

h) #18: hold the twist for 4-6 breaths-to allow time to lengthen the spine upon inhalation. The purpose is to tone and stretch the muscles of the lateral lower torso.

3. Pelvic Tilt and Thrust Exercise-intended to strengthen abdominals and lower back, stretch the lower back and free the psoas (which may be creating the low back lordosis.) By toning the abdominals, this exercise can help with breath regulation. (See SYT page 167.)

May 23

1. I physically manipulated his hips and checked for muscles that might need release (Gracilis, Rectus Femoris). I also did a release technique on his spine and Quadratus Lumborum, which we learned in our class of May 15. With the client in a supine position, one hand below the sacrum and one beneath the thoracic, a gentle rocking motion. The hands move up and down the back with the rocking.

2. During this session we polished the Pelvic Tilt, focusing on the movement in the deeper musculature and Lumbar strength on inhalation and using the same for the Cat/Cow. The purpose is to address the stiffness from driving and lack of activity, and to stretch out the hip flexors which have been troubling him.

3. Hip release: (traction of the hip socket); he responded positively, stating that the hip felt more open afterwards. Figure 5.

4. The Rolling Bridge Vinyasa (Figure 6 a-c) was added to his practice from last week, to add strength and flexibility and a sense of fluidity to the spine, hips and back muscles. FW focused on strengthening the gluteus maximus and trapezius, while stretching the top of the thigh where he is experiencing tightness. In addition he was to experience and visualize the spine as fluid (like a string of pearls, moving one pearl at a time to and from the floor). The vinyasa form is used because it is effective for this purpose. It keeps the thinking mind involved (Manomaya Kosha) with the movement and breathe flow, highlights self awareness in the activity itself, while the flow of the form reinforces the notion of flexibility and fluidity.

5. The rest of the program remained the same as May 6.

June 10, 2008

The practice was changed considerably from previous sessions due to his improvements in MT and ROM.

1. JFS (8-12 reps)
   a. #5 Internal and External Hip Rotation: Practice with no pain on the left side, respecting limitation and warming up sufficiently.
   b. # 6 Cat/Cow: Focus on the strength of the rectus abdominus.
   c. #7 Sunbird: Variation 1: Add external rotation to strengthen external hip rotators (gluteus maximus and sartorius.)

   d. #18 Spinal Twist: Focus on strengthening muscles; Intended to address the pain in his lower back by toning the same side internal, and opposite side external, abdominus oblique muscles.

2. 24 Asanas (2 reps; hold until muscle feels tired)
   a. Virabhadrasana II: (Warrior): Focus on strength of the external hip rotators and mid trapezius.
   b. Setubandhasana (Bridge):
      i. Variation 1: arms by side; lengthen the hip flexors
      ii. Variation 2: hands to thighs intended to increase the tone in the gluteus maximus. Figure 7.
   c. Urdhva Prasarita Padasana (Upward Stretched Legs) 4 reps; bend knees to come into pose: focus on abdominal strength. Reminder to not hold the breath.
   d. Apanasana (Energy Freeing); gentle movement with the breath; using abdominal strength to draw the thighs closer to torso upon exhale.
   e. Salambhasana (Locust); Intended to strengthen the gluteus maximus, trapezius and erector spinae.
   f. Baddha Konasana (Bound Angle); the main purpose for this pose is to continue to strengthen the sartorius and external rotators Practiced with the breath; Inhale to open, exhale to relax the effort.
3. Savasana; 5 minutes beginning with Wave Breath. Cultivating deep release and relaxation on the out breath.

June 24

We continued the same program from the last session with the following additions:

1. Standing hip rotation: Because the leg is free as opposed to the seated JFS # 5, FW was able to better isolate the internal and external rotators. Using this movement to develop precise awareness of the internal rotators stretching.

2. Maricyasana (Seated spinal twist): Focus on stretching the gluteus medius.

3. JFS #17; lateral spinal flexion; this movement is intended to stretch and strengthen the muscles of the lower middle back, (quadratus lumborum, internal and external abdominus obliques), where he has had discomfort on the left side.

4. Urdhva Prasarita Padasana (Upward Stretched Legs) 4 reps; we advanced to straight leg lifts from bent knees. The focus is on abdominal and hip flexor strength.

E- Results of Recommendations

April 10:

We spoke on April 10 by phone as FW remained in New York City for his wife's knee surgery. He had been able to maintain a steady practice, getting 5, 25 minute sessions in. He subjectively feels that the JFS is helping a bit with his stiffness. He shared that he is exhibiting Type A behavior and trying too hard with the practice, which is contributing to his difficulty keeping the wave breath smooth. FW also mentioned some heightened distress related to his father, who has dementia and with his father-in-law who recently had surgery.

The stiffness, lack of mobility, pain, and sense of weakness, all indicate a Vata imbalance. The back pain fluctuates and changes (Vata), yet is neither constant (Kapha) nor an inflammatory issue (Pitta). The impression is that FW could benefit from a balancing of prana, using the JFS, and continuing to work with the breath and increasing strength. The physical practice prescribed is affecting the Annamaya Kosha, (K1-physical body) but apparently needs some polishing for it to deepen to the Pranamaya Kosha (K2-subtle body). Stressful practice will not benefit the pranic body. The Joint Freeing Series, however, if performed slowly and with attention to coordinating the breath with slow movement, will affect both K-1 and K-2. Yoni Mudra with Savasana can affect both Koshas as well.

April 28:

During the last 2 weeks, FW practiced only 6 days, for 30 minutes, as he was under a lot of stress. Family responsibilities and volunteer activities took up a lot of his time. Again he spoke of mid thoracic tightness and discomfort, and feels that his back is weak. He connected this to not being strong at sit-ups (which require strong trunk and hip flexors). Perhaps he is indicating that he feels weakness in his core. He related that when he first lies down on his back he feels tightness in lower back, which releases over a short period of time. (Perhaps this is caused by tight abdominals or hip flexors, which might benefit from release). I have noted that this could be caused by tight psoas muscles. Wave breath continues to be a difficult exercise for him as he tends to lose mental focus. Once again we observe a sign of Vata imbalance. This condition will be addressed with JFS and conscious, slow pranayama.

My instructions, sessions and questions to FW and are intended to increase his own curiosity and sensitivity to his practice and self. His own self awareness seems to be increasing, as his reports about the practice are becoming more precise, a sign of prana function.

May 6

This would have been the week for re-assessment of the ROM and Muscle Tests. However do to the situations since our last meeting and his lack of

practice; I waited to conduct the exam. FW told me that he had a very difficult week. His wife's knee was healing slowly and then they discovered that she had a fracture of the femur, and was going back to using crutches and not driving. His father in law entered hospice care and on top of that he had a packed weekend of volunteer and community commitments. He seemed quite stressed and tired, as a result and had difficulty staying on track during our check in. As a clear sign of how "out of sorts" he was, he told me that he had missed, simply forgotten, a doctor's appointment. This is not like him, and I recognized that this was a meaningful signal as to his level of overwhelm. The forgetfulness and stress level, the irregularity of practice and the wandering mind, reiterates that we must balance the Vata dosha first and foremost.

Given the circumstances, it was very difficult for FW to practice this week. He only did one session, as other needs disturbed his desired flow of the day. I gently reminded him that it is during these troubled times that this practice could especially be of benefit to him, to help calm him down and renew himself. He recognized the truth in this, and he made a commitment to practice (Sankalpa), and decided to take on a longer practice for the next period of time.

May 23

Since our last meeting, 18 days ago, FW has practiced half of the days, for 40 minutes per session. During this period the practice gained consistency. This in itself, helps to balance the energy. He reports that his level of thoracic stiffness has diminished from 5.5 to 2, which is the best it has felt since his accident in February. He feels that the JFS (particularly Cat/Cow) and the Pelvic Tilt is contributing greatly. However, the pain in his left front hip has been troubling in that it has been more consistent. During the last two weeks FW has been more sedentary than normal and doing a lot of driving, and believes that because of a lack of movement, his overall level of body stiffness has increased. Perhaps the hip flexion required from extended time in the car, is contributing to the increased hip pain. Additionally he recently had an acute pain under the right shoulder blade, (the high shoulder from the body reading, and the direction of his scoliosis curve), perhaps exacerbated by his driving position.

FW is becoming much more aware of himself and the sensations that he is experiencing both in the body and the breath. As we review the exercises, the higher level of discernment in his practice is permitting us to isolate muscles more readily and to make more subtle adjustments. His demeanor has also relaxed, his speech is slower and the mind is more limited to the topic at hand. These changes indicate an increase in prana (which enables self-awareness) and a balancing of Vata. The increase in discernment indicates an elevation of Pitta into its subtle form of Tejas and that the Kosha of Wisdom, (K-4) Vijnamaya Kosha is involved.

I chose to wait until our next meeting for reassessment, as we had only 2 weeks of consistent practice prior to this meeting. In his practice, he stated that the counting for repetitions of Nadi Shodhana and JFS turn to be a distraction. Therefore, I suggested that he drop the counting and instead focus on the subtle sensations that he is experiencing from these practices.

June 10, 2008

During the last 2 weeks, FW was able to practice for 40 minutes every other day. He reports that his middle back feels “very good,” and that the pain now measures a 1.5, from a 5.5. His left lumbar feels “much improved”, the level of discomfort has gone from a 4.0 to a 2.0, the pain in his left hip has decreased from a 3.5 in the last session to a 2.5. My sense is that his prana is flowing and that the practice has begun to stabilize the Vata, hence the healing. With the reduction in pain we will add some stronger poses from the 24 Asana series.

From his practice he especially enjoys the Bridge Vinyasa and JFS #18, spinal twist. He has been having difficulty with Nadi Shodhana, sharing that he was distracted by trying to keep track of which movement was next. This lack of mental focus is something we want to continue to address. On the other hand, his practice of the JFS was easier for the mind to stay with. The movement itself was interesting and kept his attention focused. We are shifting his pranayama practice back to the simpler Wave Breath with yoni mudra.

We reviewed JFS #5, in order to see that he was doing it correctly, because he explained that he felt a twinge on his inner left leg (adductors) while doing the practice. I suggested that he reduce his ROM movement, because he was clearly straining his body going beyond his comfortable ROM, and allow the movement to gradually deepen as he proceeded through the repetitions. For the next session I noted the need for an adductor release.

FW is receiving the physical benefits from the program that he desired. He is developing self awareness and discernment (Tejas), and he is more centered during our meetings (as evidenced by keeping to the topic and an interest in the subtleties of the movements). The practice is nourishing Kosha 1, 2 and 3.

Today we did a MT and ROM reassessment. The results are indicated in the charts above. To summarize, the ROM results, the external hip rotation has improved in supine position and the internal rotation has become balanced between both sides. His ankle movements, which were hyper mobile in previous ROM testing, now all measure close to standard. The MT indicates that the hip and trunk flexors, quadratus lumborum, internal and external hip rotators, and the sartorius muscles have strengthened. The gluteus maximus remains weak, however.

June 24

This was our last session of the case study. FW reported that the pain in his middle back, which started as a 5.5 was completely gone, to 0. The intermittent low back pain, which began as a 4.0, was now a 1.0, although his left lower back still felt *stiff*. The left hip pain still bothered him, now particularly in abduction with external rotation, as experienced in Baddha Konasana, which leads me to think that it may be the sartorius.

FW practiced regularly since the last session for about 1 hour for 10 out of 14 days. Despite many personal challenges during our work together, and periods when he did not practice, he did exhibit a clear Sankalpa (intention), to progress, as evidenced by the last month of intense and devoted practice. When he desired a longer practice, he added different Pavanmuktasana movements, as he felt to. He feels more comfortable with self direction in his practice, indicating that his Vijnamaya Kosha is active, the Wisdom body.

A body reading revealed few visible changes from the original session. His overall comfort in the body had *improved*, and there was a feeling that he was more grounded and that the body was lighter and lifting from the floor.

I attempted to release the sartorius on both sides, by gently manipulating each leg, while the knee was flexed with the hip in abduction and external rotation with Fred in a supine position. I manipulated the leg supporting it from below, in a variety of directions, circling the hip as much as possible. We began with the right leg, as he was having discomfort in the left. He lay passively, and allowed me to bear the weight of the leg. His gracilis muscle had difficulty releasing on both sides. Both of his legs got heavier in my hands with time, indicating some release.

2- Condition

A – Name and Description

Middle and Lower Back Pain

Back pain is one of the most common medical problems in the U.S., affecting 8 out of 10 individuals at some point during their lives. Seven out of ten people will suffer from severe back pain at some time in their life. According to government statistics, back problems are considered the number one cause of disability for people under the age of 45. Common causes of back pain include: muscular or tendon strain, nerve problems, herniated intervertebral disk, lumbar spinal stenosis, degenerative disc disease, spondylolisthesis and arthritis. It can affect the lower, middle, or upper back and may include sciatica.

The state of the back is influenced by:

- Posture.
- Genetic heritage.
- Work, home, activities, community, culture.
- Mental attitude and psychological makeup.
- Nutrition, body weight, and fat distribution.
- Prescription and “recreational” drug use.

Most back problems result from poor posture, muscular imbalances or poor use of the spine. The way one sits, stands, moves and lifts have the potential to help or hurt the back. All joints are controlled by at least 2 sets of muscles, the flexors and the extensors. Good posture exists when these opposing muscle groups are in functional balance, which allows the joints to function efficiently. Oftentimes, these muscles are

imbalanced, and the unequal forces make the joint weaker, increasing the chance for injury.

The most commonly occurring injury to the back is sprain and strain. They can occur as a result of overstretching the spinal ligaments and muscles, and often involve the surrounding spinal structures as well.

- Sprain is an injury to the ligaments of the spine.
- Strain is an injury to muscles of the spine.
- Sprain and strain are the most common causes of back and neck pain in children and young adults.
- The symptoms and signs of sprain and strain are usually self-limiting — that is, relief of symptoms is expected to occur within 2 weeks.
- More than 90% of people with low back muscle strain or sprain recover completely within one month.

Sprains or strains can be caused by a single event, such as lifting a heavy object, or can be due to repeated small injuries to the back. Adults with poor posture or a sedentary lifestyle, individuals who are overweight or obese, workers who repeatedly lift heavy objects, or who have constant vibrations around their work place, pregnant women, people who smoke, and older adults are more susceptible to these injuries.

The key muscles of the back are the:

- Erector spinae: composed of three sets of muscles, organized in parallel columns, which run close to the spine at varying depths. Their main movements are spinal extension and lateral flexion. They help maintain correct spinal curvature and provide support for the spinal column during activity.
- Intercostals: runs between the ribs. They are involved with respiration and stabilize the ribcage during movements of the trunk.
- Latissimus Dorsi: a large muscle that covers an extensive portion of the middle and lower back, it inserts on the humerus and originates at a sheet of tendon which is attached to the spinous processes of T 7-12, L 1-5 and the sacrum. It also originates on the posterior iliac crest. Extends and adducts and internally rotates the shoulder.
- Trapezius: originates at the occiput, and the spinous processes of C7 and T1-12. It's upper, middle and lower segments move the scapula in various directions.

In addition, the following muscles (and groups) play a key role in the health of the back and spine as they affect the spinal curvature and posture:

- Psoas: this important postural muscle connects the anterior lumbar spine to the lesser trochanter of the femur. It is a major hip flexor, and also externally rotates the hip. It lexes the trunk if the leg is fixed. The psoas, when tight, can draw the lumbar spine forward and contribute to a swayback posture. This can create undo pressure on the lumbar vertebrae and discs.
- Hamstrings: are 3 muscles that are located on the back thigh, running from the ischial tuberosity (sits bone), inserting on the tibia. As a group, the hamstrings flex the knee and extend the hip. When they are tight, they result in a flat back.
- Rectus Abdominus: The muscle originates on the cartilage of the 5, 6, and 7 rib and attaches on the crest of the pubic bone. The primary action is spinal flexion. Proper

tone maintains healthy posture by balancing the strength of the erector spinae and keeps the abdominal organs in appropriate position. Weak abdominals may result in

One of the important contributing factors to the pervasiveness of back pain is the increase in stress in our daily lives. According to Dr. Art Brownstein, back problems are rarely just a physical matter. Stress, tension and emotional factors frequently play a role in these conditions. When one holds tension in the body for an extended period of time, the muscles move into a prolonged state of contraction, which results in diminished blood flow. Secondary movers, muscles which do not have the primary responsibility and are inherently weaker, may be forced to compensate for the weakened primary muscles. The nerves that come from the spinal cord may become compressed which can cause pain and affect the vital organs as well, as the nerve impulses are impeded. Oftentimes, back and neck discomfort may be accompanied by a physical reaction known as "muscular bracing" — or holding the body in an extremely rigid posture in an effort to "protect" the area from further pain. The result of this situation may be pain or as is often the case, may not immediately be noticed. However this unstable condition eventually can result in injury. Due to weakness and compensation, what might otherwise be a simple movement to a balanced musculature, can be the “stray that broke the camels back,” causing the onset of injury and pain.

B – Gross and subtle body common symptoms

Back pain can range from a dull, constant ache to a sudden, sharp pain. It may be continuous or intermittent. Acute back pain comes on suddenly and usually lasts from a few days to a few weeks. It is labelled “chronic” if it lasts for more than three months. Because the muscles are home to the majority of pain receptors in the back, and serve as protection and support for the bony spine and spinal cord, their health is crucial for one’s wellbeing.

Symptoms of back pain include:

- Persistent aching or stiffness anywhere along the spine, from the base of the skull to the hips.
- Sharp, localized pain in the neck, upper back, or lower back -- especially after lifting heavy objects or engaging in other strenuous activity.
- Chronic ache in the middle or lower back, especially after sitting or standing for extended periods.

Typically, the symptoms of strain and sprain begin either immediately or develop within the first 24 hours after an injury. The ongoing pain is caused by inflammation of the soft tissues, which causes release of pain-causing chemicals and tissue swelling. Spasm in other areas is caused by muscles tightening in response to the injury in an attempt to project the injured area. Symptoms can last for weeks.

From a yogic perspective, the five bodies (described below) may be affected by back pain, or their imbalance may themselves be the cause of pain. In Reality there is only one body, and the causes are indistinct from the effects. For the purpose of

understanding, Samkhya philosophy, which is the philosophical foundation of yoga, describes the individual as being composed of 5 bodies. These are:

- Annamaya Kosha/Physical body: the body which is made of food, or the five elements. Its function is to sustain bodily existence. Pain may be directly experienced in the muscles and nerves associated with the back and spine.

- Pranamaya Kosha/Subtle body: the body which is made prana or vital force. Its function is to energize the body and mind. When one is in pain, there may be a reduction of sensation or sensitivity, indicating a lack of prana. Alternatively, directing the prana to an affected area can speed up the healing process.

- Manomaya Kosha/The mind: the body which is composed of mind and the five senses. Its function is sensory perception. When one is in pain, especially for a long period of time, the quality of one's thoughts may be adversely affected. On the other hand, generating encouraging and uplifting thoughts can have a positive affect upon any physical condition.

- Vijnamaya Kosha/Wisdom body: the body which is composed of Intelligence, higher reason and transcendent thoughts. Its function is higher discrimination. At this level, one is indifferent to what happens to the body, for the individual remains in a state of wisdom, regardless of circumstances.

- Anandamaya Kosha/Bliss body: the body which is composed of happiness. It requires nothing to generate joy, for that is its natural state. Its function is the higher powers of love, faith and intuition.

C – Related challenges – lifestyle, diet, limitations on activities

As a consequence of back pain, an individual may be forced to reduce many activities. Sitting at a desk or driving a car can be painful or increase symptoms. Physical activities and exercise may be limited due to back pain, and in the case of acute pain, people may be unable to work or have difficulty getting comfortable in any position. Sleep patterns may be affected if the pain is disturbing during the night.

3 – Ayurvedic assessment and yoga recommendations

FW's current condition, or Vikruti in Ayurvedic terminology, is a Vata imbalance. This is indicated by the following signs and symptoms:

- The *intermittent and changeable nature* of the pain, as opposed to a steady, continuous pain.

- Morning pain that is relieved by movement.

- Cracking and popping joints.

- Inability to pinpoint the pain.

- Difficulty standing still.

- Weakness in muscle testing and sense of diminished strength.
- Scoliosis.
- Difficulty quieting and focusing the mind.

Vata, the principle of motion, is centered in the pelvic region and is composed of the qualities of air and ether. Its attributes are: cold, dry, light, subtle, flowing, mobile, sharp, hard, rough, and clear. Vata is the primary biological force and is the motivating power behind the other doshas (Pitta and Kapha), which are incapable of movement without Vata. It is responsible for all movement within and by the body. Due to its composition of attributes (subtle and moving), Vata is easily altered and will more readily than the other doshas; become disturbed or brought back into balance.

Prana is the yogic equivalent to the Ayurvedic concept, Vata. Therefore, when we balance Vata, we are restoring prana. Prana moves throughout the body, following the natural rhythm of the breath, in different patterns. The prana is understood as 5 movements, with different functions:

1. Adya Prana: The inhalation, moving down and in; this is the primary form of prana, and is omnipresent. It moves from the nostrils to the chest.
2. Samana Prana: The retention or pause after the inhalation; moves from the periphery to the center; it functions to absorb beneficial material, as in the case of digestion. Samana prana is located in the abdominal organs.
3. Udana Prana: The first part of the exhalation, Udana prana governs our sense connections with the outside world. It is located in the throat area, and governs speech and outward movement of breath.
4. Apana Prana: The last portion of the exhalation moves down and out of the body. Apana prana is located in the lower abdomen and pelvic cavity and is responsible for elimination, menstruation and childbirth.
5. Vyana Prana: The pause after exhalation, Vyana prana moves from the center, and sends vitality to the periphery. It governs circulation and is responsible for voluntary and involuntary muscle movements.

Some teachers equate prana with the breath. When the Vata is balanced the prana flows smoothly and there is a sense of peacefulness, ease, receptivity, responsiveness, clear intuition, and a heightened awareness of Spirit.

Due to its preeminent position to the other doshas, Structural Yoga Therapy always begins treatment by balancing Vata. Once the prana is moving properly, it provides a strong balancing force for the other doshas. This action alone can alleviate many problems of Pitta and Kapha imbalance.

Recommendations

The goal of these recommendations is to remove the causes of discomfort and instability, while balancing Vata and bringing it to a sattvic state, resulting in a sense of peace. This will elevate prana at the level of Kosha 2, which will in turn nourish the other Koshas.

Lifestyle: In order to balance Vata, it is important to create regularity in the day. Keeping the same daily schedule reduces the free flowing nature of Vata, provides a container, and grounds it. The regulation of daily of activity stops the prana from leaking out of the system. The mind can more easily focus, and a sense of steadiness and purpose can be cultivated.

Diet and the taste of foods, can have a balancing or a detrimental effect. Foods that should be limited include: dry fruit, apples, melons, potatoes, eggplant, beef, ice cream and green salad, for they aggravate Vata. It is better to eat foods such as: coconut, avocado, brown rice, bananas, grapes, cherries, oranges, and red cabbage. It is best to eat the largest meal of the day in the early afternoon. The tastes that should be taken regularly are sweet, sour and salty, and pungent, astringent and bitter tastes should be limited. Please refer to Dr. Vasant Lad's book, listed in the bibliography for more information.

Asana: Vata imbalance is treated by performing asana in a deliberate and slow manner. An emphasis is placed on increasing sensitivity by inquiring as to the precise location and the sensations experienced. The key words for practice are; steady, consistent, mindful, meditative, deliberate, grounded and focused. The postures should be performed so that they do not create fatigue. Yoga Sutra II, 46 and 47 clearly state the proper attitude for this method.

II, 46

Yoga pose is a steady and comfortable position.

II, 47

Yoga pose is mastered by relaxation of effort, lessening the natural tendency for restlessness, and identification of oneself as living within the infinite stream of life.

The best asanas for Vata balance include: Pavanmuktasana series; balancing poses, which increase concentration and refine prana, such a Vrksasana and Garudasana; asanas that place pressure on the pelvis and lower abdomen, such as Janu Sirsasana, Paschimottanasana, Halasana, Apanasana, Supta Virasana, and spinal twists; poses that promote freedom in the hips, lumbar spine and knees, such as Virabhadrasana I and II, Trikonasana, Parsvakonasana; and Savasana.

A vinyasa sequence may be helpful, in which attention is focused upon the breath, and the movement is coordinated with the breath. Muscular effort is soft, and the breath stays cool and steady. The vinyasa practices help prana to arise and for the body to contain it. The long sequences challenge and develop concentration and help the student develop sensitivity to their energy field. The sequences emphasize forward bends which are calming, put pressure on the seat of Vata, thereby stimulating it and

restoring it to its natural home The Vinyasas for Vata are: Palm Tree, Balancing Tree, Stick, and Auspicious.

At the conclusion of asana, one should always practice a lengthy relaxation. The hands may be placed in Yoni Mudra, upon the abdomen or pelvis, to help the student develop sensitivity to the energy body. Linking the attention with the breath makes this a Kosha 2 (subtle energy body) practice. Pranamaya Kosha generates feelings of vitality and health. We know that the practice has been effective if as a result, the student feels peaceful, grounded, relaxed and refreshed. The breath moves deeply, yet gently, and there is an absence of pain.

Pranayama: Yoga Sutras II 49-53, describe the experience and practice of pranayama. The culmination of the practice is stated in Sutra II 53:

And as a result, the mind attains fitness for the process of contemplation of the True Self.

The first step in learning pranayama is developing a heightened sensitivity to the movements of the breath and prana, after which Ayurvedic yoga breath should be learned. The breath moves in and out through the nostrils, flowing like a wave. It descends on the inhalation, and ascends on the exhalation. The student should be aware of the chest expanding, the diaphragm moving downward and the abdominal area extending on the inhale. The exhale begins with the abdomen drawing in and up, the diaphragm lifting to its resting position and the ribs narrowing. This Wave breath or *Ujjaye* is the foundation for all other breathing exercise described.

The Pranayamas for Vata are:

- Sama Vrtti Ujjaye/Wave Breath- inhalation and exhalation of equal effort and duration; which promotes an inward directed awareness and attentiveness to pranic movements.

- Nadi Shodhana/Alternate nostril breathing- inhalation and exhalation of equal effort and duration, through alternating nostrils; this has a balancing effect on the pranic system and purifies the *nadis*, the energy channels of Kosha 2.

Svadhyaya: Sutras I, 30-31 should be studied to elevate Vata. Theses Sutras discuss the effects upon the mind of the obstacles to Self knowledge. Diminishing these impediments, will have a positive affect upon the mind, which is a function of Vata. In addition, Sutras II, 1-11 describe the causes of suffering, and the means for attaining higher consciousness. Through this study and self reflection, the individual can have insights as to the True Nature of their being.

4- Common body reading

- **Flat feet:** Weak: Tibialis posterior; Tight: Tibialis anterior.

- **Pronated Ankles:** Weak: tibialis anterior and posterior; Tight: Peroneals.

- **Bowed Legs:** Weak: Adductors; Tight: Gluteus medius and tensor fascia lata.
- **Lordosis:** Weak: Middle trapezius and rectus abdominus; Tight: Lumbar erectors, psoas, hip flexors.
- **Scoliosis (right):** Weak: right side, psoas, spine erectors, latissimus dorsi, and abdominus oblique; Tight: same muscles opposite side
- **High shoulder (right):** Weak: R lower trapezius and latissimus dorsi; Tight: Upper trapezius, levator scapula
- **Rounded shoulders:** Weak: mid and lower trapezius, latissimus dorsi; Tight: Pectorals, serratus anterior
- **Forward head:** Weak: Upper trapezius; Tight: Sternocleidomastoid

5 – Contraindicated yoga practices

In the case of acute injury, all activities should be done gently, non-aggressively and with awareness of posture, so as to protect the injured area. Any activity or exercise that results in pain should be eliminated or modified. Painful movements will further imbalance Vata and should be avoided. In Fred's case, right lateral bending, and left hip flexion were modified. Pranayama and asana should be practiced with ease and without tension. All practices should be modified to support this purpose.

Heavy lifting should be carefully done. The knees should be bent and the object held close to the body. Never should the back and knees be straight. Unless the abdominals and hip flexors are very strong, straight leg sit-ups and supine straight leg raises should be avoided, as they tend to strain the lumbar muscles. There are modifications, with bent knees, that are effective in building abdominal strength without causing harm to the back. During stretching, one should move slowly and never bounce, which can cause muscle strain or ligament sprain. Prolonged periods of sitting or driving can exacerbate back problems, especially if good posture is not maintained. Therefore, whenever possible, take some time every hour to stand, stretch and enjoy some simple movements that can help to keep the back supple and mobile.

Backbends should be practiced with caution, so as to avoid increasing tension and contraction in the middle or lower back. The spine should be well extended in these poses, and the neck kept in natural alignment, so as not to stress weakened muscles. Twists should be practiced with a focus on lengthening the spine.

When there is lower back pain or disc injuries, special care should always be taken with forward bends, which can compress the lumbar discs, if not performed with good alignment.

6 – General recommendations for the condition

A – Therapeutic/free of pain

Depending on the type of injury, different treatment is required. Back injuries can occur due to an accident or fall, overuse or repetitive motion, osteoarthritis, osteoporosis, spinal stenosis, scoliosis, degenerative disc disease, or cancer. Physical injury can occur to any of the tissues of the back, and can range from a simple strain, or sprain, to bone, nerve or disc damage.

Frequently, a psychological component contributes to the problem, as physical injury can cause emotional trauma based in a fear response. This response can further damage the physical body, as holding and contraction inhibit the body's natural healing process. One can treat this pain is with breathing and relaxation techniques. The 5 pranayamas for pain described in the appendix, are an excellent way to restore vitality and prana, encouraging healing.

In the case of FW, it appears that we are treating a muscle strain in the mid and lower back, although there is a suspicion that there may be some arthritis involved as well.

Immediately after injury, the treatment goals are pain relief and restored movement. RICE is an acronym for the initial treatment:

- **R**est: The basic treatment for relieving back pain from strain or minor injury is rest.

- **I**ce: An ice pack can be helpful as it reduces inflammation. Aspirin or another nonsteroidal anti-inflammatory drug (NSAID) may also be used to relieve pain and reduce swelling.

- **C**ompression: An elastic bandage is used to prevent or reduce the formation of edema. A wrap is applied starting distally, using overlapping spirals to progress proximally. Greater pressure is applied distally than proximally, creating a compression gradient that encourages venous and lymphatic return.

- **E**levation: The area should be ideally elevated above the heart, in order to reduce swelling.

In addition, homeopathic arnica is helpful if taken internally during the first 24 hours and can be applied topically for an extended period of time.

B – Stabilize situation including lifestyle recommendations

- Cultivate an awareness of posture, movement, breathing patterns, and bodily tension. Learn to align the body in all positions, relax the muscles and to breathe deeply.

- Learn to lift properly, from the legs, positioning any objects close to the body using bent elbows.

- After the inflammation subsides, applying heat can soothe muscles and connective tissue. Baths, using Epsom salts and baking soda can draw toxins and congestion out of the area.

- Apply a ginger compress. This will strongly increase circulation of blood and body fluids at areas where stagnation exists. This stagnation usually manifests itself in the form of pain, inflammation, swelling or stiffness.

- Rest the injured area and take care not to stress it in any activities. However, avoid prolonged bed rest which can cause muscular weakness.

- It is important to get moving as soon as possible. Resting your back for more than three days, once pain has subsided, has been shown to cause more harm and should be avoided. Practice gentle exercise such as Pavanmuktasana, taking care not to cause any pain. Be aware of using good body mechanics.

- Limit the periods of sitting, and take time to move and stretch the body and change position at least every hour.

- See a professional such as a structural yoga therapist, a physical therapist or a chiropractor, who can identify weak muscles that may have pre-disposed the body for injury to begin with. Learn exercises that will help to strengthen the weak muscles, and increase flexibility. Apanasana, Pelvic Tilt, Supported Supine Twists (Jathara Parivartanasana), Legs up the Wall, and Half Bridge (Setu Bandhasana) can be helpful as one begins to regain strength and flexibility.

C – Maintenance and long term considerations

- Stretch the hip extensors, (gluteus maximus and hamstrings) strengthen the legs and create freedom in the hips with poses such as: Runner's Stretch, Supta Padangusthasana, Trikonasana, Virabhadrasana I and II, Uttanasana (or Ardha Uttanasana), Ardha Chandrasana, and Adho Mukha Savasana.

- Develop abdominal strength with poses such as: Urdva Prasarita Padasana, Rolling Bridge, Ardha and Full Navasana, and Yoga Sit-ups.

- Encourage spinal flexibility (Ardha Halasana) and strengthen the erectors with back bending poses such as: Salambhasana, Bhujangasana, and Dhanurasana; and twists such as: Bharadvajasana on a chair, Maricyasana with a chair at the wall, and Jathara Parivartanasana with knees bent, and variations of Supine Twists.

- Increase awareness of the physical and emotional triggers for back pain. Learn to recognize the early warning signs and commit (Sankalpa) to maintaining a healthy body, mind and spirit.

- Reduce or eliminate caffeine, cigarettes and stressful activities, which cause muscle contraction, and reduce blood flow.

- Encourage a sattvic lifestyle by practicing meditation, relaxation, and pranayama, to support the above mentioned physical exercises.

7 – Questions and answers on Yoga Therapy from www.yogaforums.com

05-28-2006. there is only one body. The concept of the koshas is to explain our illusion that we take to be real. In actuality what we think, we feel, what we do, we experience. All are simultaneous. Where our awareness is, is what we believe to be the cause of our next experience. My purifying the mind what is meant is not merely positive thinking but entering the subtlest state where thoughts arise and slowing down that.

12-9-05. the quadrant of the lower back between the ribs and pelvis is often subject to strains. The region closest to the spine is controlled by the quadratus lumborum muscle. The muscle reacting lateral from there is the latissimus dorsi. For toning it I would recommend doing the rolling bridge pose, and the JFS

5-3-06. For those who are weak, which is high percentage; have them go only half way down but work on good form. That is chest should lead the motion with pelvis following. This will tone the latissimus. Gradually next step is to move forward as you come down. This will build lower trapezius and fuller range of latissimus and triceps as shoulder extensors. The situation is that students are weak in upper arms and upper back. The JFS does not really build these muscles too well but movement 6a - cat and 16a spinal extension to some degree are the basic foundation for tone here.

3-23-05. JFS: This sequence is for balance of several considerations – it covers all joint directions of motion thus helping to retain natural range of motions; it can be used to focus on individual muscle patterns of weakness and/or tightness; it brings circulation through the body in the sequence of how the five pranas move in the body. By so doing it also will promote the experience of sattvic state of mind which in turn will allow meditation to arise not merely to encourage its practice but the experience of meditation as a naturally arising field of communion consciousness.

9-30-04. In the forward bend, the hip flexors should be felt engaging their strength to pull your upper pelvis and lumbar spine forward. If they are not strong you will feel only the sensations of the hamstrings and other hip extensors stretching. Optimal to me is to feel both during the pose; if you can do that then it indicates an advanced skill of being able to choose where you work and what affect you wish to create in your practice.

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9 – Appendix

Figure 1 Sunbird Variation

Figure 2 Sunbird Variation

Figure 3 Adductors

Figure 4 Nadi Shodana

Figure 5 Hip Release Technique

Figure 7 Bridge Variation

Figure 6a Rolling Bridge

Figure 6b Rolling Bridge

Figure 6c Rolling Bridge

5 Pranayamas for Healing & Pain

Mukunda Stiles

Make a strong resolution (sankalpa) to end pain. That force is the directing of Divine will.

Technique one – from Swami Vivekananda

1. sit or lie down and adjust yourself to be comfortable enough to be still
2. slow down your breath
3. ask your thoughts to come more slowly
4. use any meditation technique you have been given (not one you took) or ask me for a mantra specifically for you.
   Keep visiting each stage to make sure each one is sustained.

Technique two – Hatha Yoga Pradipika V, 9-11

1. Breathe into the pain, send your breath into the pain and watch what happens.
2. Describe the pain to yourself- is it sharp, dull, hot, cold, radiating, specific? Then breathe into your pain consistently. Imagine the centre of the pain is a bulls-eye, your breath is the bow, and your awareness is the arrow. Inhale energy, and then imagine that as you exhale, energy is spreading throughout the bulls-eye. Exhale the breath but hold pranic energy in that place so that it builds.

Technique three – Tantra Lessons 1-3

1. Place your hands in yoni mudra, wherever you like- it could be on your abdomen, or on a specific spot where there is pain.
2. When you feel sensations coming into that spot move the hands down to the lower abdomen. Gather the sensations from the rest of the body into your hands
3. You can put your hands on a place where there is pain (if you can reach it), and breathe into that area, trying to make it smaller and smaller until it disappears

Technique four – Yoga Sutras II, 50

1. Focus your breath below the navel and continue to inhale and exhale there consistently for 30 seconds, 1 minute, or longer.
2. You can place your hands over the lower abdomen if it helps sustain the pranic flow to that area

Technique five – Vijnana Bhairava Tantra 25-26

1. Feel that the breath is two points of awareness (duality) and becomes one pointed (ekagrata). Inhaling feel two streams of air coming into the nostrils, then they join at the third eye to become one stream. Then as you exhale, feel one stream of air becoming two streams as the air leaves your nostrils.
2. Find the fine channels (nadis) within the center of the nostrils and feel the breath coming in meeting at the root of the nose. Find the beginning and the end, where the two become one in the sinus or third eye. Inhale two into one, exhale one back into two. Gather prana at the meeting point and pain disappears.

10 – Biography

Mark Suresh Schlanger has been practicing yoga since 1975. In 1977, he attended the Institute for Yoga Teacher Education in San Francisco for 1 year. He has been influenced by Iyengar, Integral and Classical Yoga traditions, as well as by Buddhism and Advaita Vedanta. He has studied with Larry Hatlett, Judith Lasater, John Schumacher, Lillah Schwartz, and most recently with the beloved Mukunda Stiles. In addition to teaching yoga, he is a temple drummer, and a drum circle facilitator. He spends his time in Woodstock, NY and Washington, DC.