

Herniated Lumbar Disc

Structural Yoga Therapy Research Paper

By
Mark E. Pierce, MD.
mpierce@nshouseofyoga.com

Redding, Calif.

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Edited by Mukunda Stiles

1 - CASE STUDY #1- CR

A) INITIAL INTAKE

CR is a 48-year-old man. He is thin, busy, nervous individual, who is unorganized with his time. He is compulsive with details, always writing down notes to help him remember.

He has a long history of low back pain. Approximately 10 years ago a lumbar laminectomy, fusion and discectomy was performed to relieve nerve root radicular pain. CR was able to stop his narcotic medications and return to work in the car repair business.

Five years ago he developed neck pain and radicular pain into his arms. An MRI confirmed a cervical disc rupture. He responded to treatment with physical therapy and was able to continue his work. His neck remains asymptomatic.

Eighteen months ago he noted recurrence of his low back pain with radiating pain into his left leg. The lumbar pain is steady ache in the midline and is worse at night, limiting his sleep. Movement decreases the lumbar stiffness. The leg pain is a sharp shooting sensation which is severe enough to stop his current activity. The leg pain increases with prolonged sitting, standing, or bending. Initially the pain was controlled with anti-inflammatory medications, but progressed to required narcotic pain medication for relief.

After 6 months he noted continuous numbness in the 1st and 2nd toes of the left leg. No weakness of the lower extremities occurred. There was no disturbance of bowel, bladder, or sexual function. An MRI scan confirmed disk herniation, nerve root swelling, and scarring in the area from the prior surgery.

He failed to respond to traditional physical therapy. Oral Prednisone decreased his symptoms, but caused irritability and insomnia, and did not completely break the cycle. He had temporary relief with local Cortisone injections, but again the relief was transient. A second trial of physical therapy, using the Feldenkrais method, provided partial relief of the low back pain.

His work required frequent bending and leaning under the hoods and dashboards of cars. He estimated his pain in the moderate range (5-6/10) with narcotic medication, but with bending it would increase to severe (8/10) forcing him to stop for frequent breaks to stoop. He became more frustrated, angry and explosive at work. He was bored with the menial tasks he was required to do as the owner of the business. He became confrontational with customers and his employees. Without warning he took a day off and has not returned 14 months.

Socially he is in a stressful relationship. His wife also has a long list of medical problems, including fibromyalgia and lateral elbow epicondylitis. She is recovering from a hysterectomy. He has assumed responsibility of transporting his four children to school and extracurricular activities. He states that her excessive spending has robbed him of his motivation to work.

B) PHYSICAL ASSESSMENT: 11/12/04

CR is a thin man, who is 5' 10" and estimated to weight 165 pounds. There is a midline scar over the lumbar spine. The pain localizes over the low lumbar spine in the midline. He frequently stops his activity to squat and straighten his lumbar spine by lifting his chest and pulling his shoulders backward. This is his position of comfort, because it decreases the pain into his leg. On a traditional medical exam, straight leg flexion caused pain into his left leg at 30 degrees. Hip flexion with the knee bent was tolerated until the flexion decreased his lumbar curve. He had difficulty being still for the exam, as he slowly developed more stiffness and pain in the low back. Spinal flexion and extension were not tested.

Body Reading: There is significant decrease in the lumbar curve. No scoliosis is present. Sacral stability test demonstrates a drop on the left.

Table 1a

Range of Motion (normal)		11/12/04		2/4/05	
		Left	Right	Left	Right
Supine position					
Knee	Flexion (150 ⁰)	130	130	130	130
	Extension (0 ⁰)	-5	-5	-5	-5
Hip	Flexion, bent knee (135 ⁰ -150 ⁰)	125	130	125	130
	Straight knee (90 ⁰)	30	60	30	60
	External rotation (45 ⁰)	45	55	45	55
	Internal rotation (35 ⁰)	45	35	45	35
Side lying position					
Hip	Adduction (30 ⁰)	30	30	30	30
Hip	Abduction (45 ⁰)	45	45	45	45
Prone position					
Knee	Flexion (135 ⁰ -150 ⁰)	130	130	130	130
Hip	External rotation (45 ⁰)	40	55	40	55
	Internal rotation (35 ⁰)	45	35	45	35
	Extension (15 ⁰)	15	15	15	15

* Abnormal values are bold.

Table 1b

Muscle tests		11/12/04		2/4/05	
		Left	Right	Left	Right
Supine position					
Hip	Flexion	4	4	4	4
	Psoas (isolation)	4	4	4	4
	Sartorius (isolation)	4	4	4	4
	Flexors with rectus abdominis	3		3	
Side lying position					
Hip	External rotators	3	4	3	4
	Internal rotators	4	3	4	4
	Abductors	3	3	3	3
	Adductors	3	3	3	3
Prone position					
Hip	Extension	4	4	4	4
	External rotators	4	4	4	4
	Internal rotators	4	4	4	4
Spine	Erector Spinae	1	1	2	2
	Upper Trapezius	3	3	4	4

C) Summary of Findings (Initial)

Table 1c

	Tight	Weak	Release
Erector Spinae		+++	
Upper Trapezius		+	
Rectus abdominis		+	
Hamstrings	+++		+++

Weakness of the erector spinae and tightness of the hamstrings cause a lot of stress on the posterior lumbar ligaments with motion.

D) RECOMMENDATIONS FROM INITIAL SESSION

A program was developed to improve vata balance and to increase the strength of the rectus abdominis and erector spinae muscles. It takes approximately 20 -30 minutes. A daily practice was recommended.

1. Sacroiliac Mobilization Series. The movements should be slow and in time with the breath. Start with a minimum of 12 breaths and increase to 20 as tolerated. Stabilizes the SI joint. See appendix.
2. Supported Fish Pose with hips elevated on a blanket or firm pad. This reduces pain and continues to balance their Vata. Encourage slow deep breaths with firm abdominal muscles and a pause at end of inspiration. Hold this restorative pose for 3-5 minutes. This elongates the spine and causes traction on the spine to open the neuroforamen.
3. Joint Freeing Series (sitting portion). Knee flexion and extension are omitted because it caused loss of the lumbar curve. The arms were included to encourage slow movements and breathing for Vata balance.
4. Sitting with one leg adducted and externally rotated with the foot near the knee. Hips are elevated with a blanket. Lean back into the arms (arm extension) to allow the latissimus dorsi to aid the erector spinae in rocking the pelvis back and forth. Rock back and forth slowly with the breath 12 times on each side. This strengthens the erector spinae, rectus abdominis, psoas, rectus femoris, hamstrings, and gluteus maximus.
5. Remove the blanket and repeat in the supine position. This strengthens the erector spinae, rectus abdominis, but decreases the help with the other muscles noted in step 4.
6. Cat / Cow. Continued to emphasize slow movements and breathing. Repeat for 6 breaths. This maintains body heat and helps improve Vata balance. It strengthens the rectus abdominis and erector spinae.
7. Abduction / Adduction movement of the Joint Freeing Series. This strengthens the gluteus medius and TFL and stretches the adductors.
8. Cobra. Hold for 3 breaths and increase to 5 as tolerated. This strengthens the erector spinae and trapezius.

He was encouraged to increase his water intake to promote hydration of the discs. His Ibuprofen was continued at the maximum dose of 800 mg three times a day. Narcotic were used on an as needed basis to preserve daytime function, and Trazadone, an antidepressant was used to improve sleep. A minimum of 8 hours of sleep was recommended to increase his tolerance to daytime pain. Twenty minutes of daily walking was recommended.

2/4/05

He missed several appointments, but indicated he followed the practice five days a week with the following changes: In the Joint Freeing Series, he stopped the wide leg abduction-adduction motion because it caused pain; and on cat/cow he did not round the back, stopping at the tabletop position. He added child's pose spontaneously at the end of the practice and occasionally repeated the supported fish pose.

He did not feel there was any change in his symptoms. His pain was still in the moderate range (6/10), and he continued to require narcotic pain medications.

Repeat muscle testing found improved strength of the erector spinae muscles.

The following poses were added to his current program:

1. Virabhadrasana I (Warrior I), right and left sides, starting with 3 breaths and increasing to 5. A more aggressive pose to strengthen the erector spinae.

2. Parsvottanasana (Side Hip Stretch). Start with the front leg bent and hands on a wall, right and left sides, starting with 3 breaths and increasing to 5. Increasing the effects of gravity on strengthening the erector muscles and using the arms to regulate the effort.
3. Virabhadrasana II (Warrior II). Start with 3 breaths and increasing to 5. Introduces strengthening of the leg adductor muscles.

We discussed his anger toward his wife and I encouraged a more supportive role. I pointed out to him that he was successful in his business, as it continued to support his family even without his participation. I encouraged him to look for work that allowed him to feel creative.

4/1/05

CR continues to have moderate pain (6/10) pain that limited activities and require medications. He has not returned to work at his auto repair shop, but has accepted a full-time position with a local businessman. He will be maintaining his three racing Porsches. His final evaluation has been delayed due to missing appointments.

E) Summary of Results for CR

There was improved strength in the trapezius and erector spinae muscles. Narcotic pain medication use was unchanged, but his tolerance to work improved. He has returned to work.

1 - CASE STUDY #2- PB

A) INITIAL INTAKE

PB is a 40 year old man. He is overweight, slow moving, slow thinking, and impatient, but otherwise prompt, pleasant, and not angry or hostile.

He has a seven-year history of left lower back pain requiring narcotic medications and muscle relaxants for pain control and sleep. The pain started after a fall from a ladder onto his left side. He noted left back pain and muscle spasms. X-rays were negative for fractures, and he was treated with pain medications and muscle relaxants.

He continued to have low back pain, but also developed recurrent sinus infections and headaches, all requiring narcotic medications for relief. The back pain was increased by excessive activities, causing a "payback" resting period of 1-2 days. After many recurrences he noted radiation pain into the left buttocks and posterior thigh. The pain estimated in the severe range (7-8/10) is described as burning and is associated with transient numbness over the inner leg. There is no weakness, bowel, or bladder dysfunction.

PB currently takes 3-4 Vicodin daily for pain, Soma at bedtime for muscle spasms and to cause sleep, and Elavil for depression. He currently works as a computer programmer, spending large portions of his day at a desk. He frequently works late into the night. He does not follow any regular exercise program. There is no smoking or drinking history.

His wife runs a child care facility at home. Their telephone ad was omitted from the Yellow Pages, so attendance is low, causing financial stress. They do not have health insurance. She also is on chronic pain medication for headaches.

B) PHYSICAL ASSESSMENT: 1/10/04

PB is 5' 6" and weighs approximately 180 pounds. He walks slowly, sits slowly, etc. His pain is located over the left low lumbar spine. He was very weak and reconditioned. It took effort for him to get down on his hands and knees. I was getting ready to show him the hip abduction / adduction portion of the Joint Freeing Series, and he asked if he was done with the pose.

Body Reading: Lateral flexion to the left increases the pain. No scoliosis is present. There is loss of the lumbar curve. Sacral stability test was equal; however, when he attempted a supported tree pose lifting the left leg, the pelvis collapsed downward and caused pain in the back.

Table 1a

Range of Motion (normal)	1/10/04		2/4/05		3/1/04	
	Left	Right	Left	Right	Left	Right
Supine position						
Hip Flexion, bent knee (135°-150°)	100	130	100	130	100	130
Straight knee (90°)	30	30	30	30	30	30
External rotation (45°)	40	40	40	40	40	40
Internal rotation (35°)	35	35	35	35	35	35
Side lying position						
Hip Adduction (30°)	20	20	20	20	20	20
Hip Abduction (45°)	30	40	30	40	30	40
Prone position						
Hip External rotation (45°)	35	35	35	35	35	35
Internal rotation (35°)	30	30	30	30	30	30
Extension (15°)	10	10	10	10	15	15

Table 1b

Muscle tests	1/10/04		2/4/05		3/1/04	
	Left	Right	Left	Right	Left	Right
Supine position						
Hip Flexion	2	3	2	3	3	3
Psoas (isolation)	3	4	4	4	4	4
Sartorius (isolation)	4	4	4	4	4	4
Flexors with rectus abdominis	2				3	
Side lying position						
Hip External rotators	3	3	3	3	3	3
Internal rotators	3	3	3	3	3	3
Abductors	3	3	3	3	3	3
Adductors	4	4	4	4	4	4
Prone						
Hip Extension	4	4	4	4	4	4
Spine Erector Spinae	2	2	2+	2+	3	3
Upper Trapezius	3	3	3	3	4	4

C) Summary of Findings

Table 1c

	Tight	Weak	Release
Erector Spinae		+++	
Upper Trapezius		+	
Rectus abdominis		+++	
Hamstrings	+++		+++

Erector Spinae are very weak.

Rectus abdominis is very weak.

The left hip dropped and pain was noted on tree pose with the left leg raised.

The hips have decreased range of motion and the supporting muscles are weak.

D) RECOMMENDATIONS FROM INITIAL SESSION

The starting program was the same as for Case #1. Cobra was omitted because of his extreme weakness. He was advised to stop poses that increased his pain.

2/4/05

PB followed the program 3 times a week. He requires recovery days and reported the program caused muscle aches the following day. He liked the Sacral Mobilization Series and the abduction/adduction motions, so he increased the duration of these poses. He stopped Cat/Cow.

In the supine position he added individual leg lifts with the hip externally rotated. He repeated Fish Pose again at the end of his program.

He reported sleeping better, but his pain remained severe (7/10) and still required narcotic pain medications.

Cobra and Warrior II were added to the program.

3/1/05

He reported increased strength, which was validated with repeat measurements. He no longer complained of muscle aches the day after doing his program.

He demonstrated his therapeutic Yoga program. There was little objective evidence of pain. Unfortunately, he continued to use the same number of pain pills. He was advised that the pain medication should not be used to completely block all of his pain, so his mind would be able to use discomfort as a method of modifying his daily habits, similar to how he used it to modify his Yoga practice.

He was invited to start our Yoga for Recovery program.

E) Summary of Results for PB

There was objective evidence of increased strength of the abdominal muscles, erector spinae, and trapezius muscles. Objective pain decreased, but subjective pain remained severe (7/10), and his use of narcotics was unchanged.

2 A) Herniated Lumbar Disc

A Herniated Lumbar Disc is a tear of the annulus fibrosis. The fibers separate and allow nucleus pulposus to move into the spinal canal. The cause is usually a flexion injury, but in many cases, a specific injury is not recalled. Age related degeneration of the annulus and posterior longitudinal ligament occurs silently then a sneeze or trivial movement can cause the rupture.

The displaced disc presses on the spinal cord or the nerve roots as they exit through the foramen. The pressure damages the nerves. Inflammation develops in the area, increasing the pressure. Both limit the subtle gliding of the nerve root with motions, causing a stretch injury of the nerve root.

The tear and local inflammation cause pain in the low lumbar spine. The nerve irritation causes the pain to radiate into the gluteus and down the leg along the course of the sciatic nerve. Herniated discs may only cause local pain and no sciatica, or sciatica without any local lumbar pain. This paper emphasizes patients who have the nerve irritation and radiating pain into the leg.

Herniated discs account for 75 per cent of cases of sciatica. Other causes of sciatica include pressure from the ischial tuberosity and piriformis muscle syndrome.

2 B) Gross and subtle body common symptoms

Most patients have poorly localized low back pain and abnormal posture.

The location of sciatic pain is determined by the level, direction, and amount of herniation of the disc. The L5-S1 is the most common followed by the L4-L5 level. In severe degenerative disease multiple levels can be involved.

The L5-S1 level presses on the first sacral root. Pain is felt and radiates to the midgluteal region, posterior thigh, posterior calf, heel and plantar surface of the foot over the 4-5th toes. Skin sensitivity and numbness occurs in the same areas, but is more frequent in the lower leg and foot. Weakness if present involves the hamstrings, foot evertors and plantar flexors. The ankle reflex is absent in most cases.

The L4-L5 level presses on the fifth lumbar nerve. Pain radiates to the posterior thigh, hip, groin, lateral calf, lateral ankle, and extends on the top of the foot to the 1st and 2nd toes. Again numbness is more common in the lower leg and foot. Weakness develops in the extensors of the great toe and foot.

The rarer compression of the 3rd or 4th roots causes pain in the anterior thigh and knee with numbness in the same distribution. Weakness develops in the anterior thigh flexors. The ankle reflex is absent.

An intact posterior longitudinal ligament will direct the ruptured disk to the side with symptoms occurring on the corresponding side. Direct posterior rupture can cause bilateral symptoms and also affect bowel and bladder control and is called the cauda equina syndrome.

2 C) Related Challenges

Other diseases can cause similar symptoms. Cancer of the lung, breast, prostate, and others can metastasize to the bone and soft tissue of the spine. Compression fractures from osteoporosis collapse the nerve root foramina and compress the nerve roots. Spurs from degenerative disk disease can press on the nerve roots. Infection can also spread to these areas causing inflammation, swelling and intense pain.

MRI (magnetic) scans define the patient's anatomy and can distinguish a ruptured disk from these other possibilities. However, many ruptured disks do not cause symptoms, so finding one on a scan does not always explain the patient's symptoms. This frequently causes confusion and can lead to an unnecessary and unsuccessful surgery. Unfortunately, after the patient sees the ruptured disk on a scan, they often assume a passive or impatience "sick" role, which intensifies their symptoms.

Chronic pain causes insomnia and drastically alters a person's daily activities. Financial problems develop because of the inability to work. This alters the self-image, changes the internal dialogue and progresses to depression.

Drug dependency is frequent in this group, because of impatience and the need to remain functional. Addiction assumes a life of its own with the mind continuing the pain after the back (physical) problems are solved.

Obesity increases pressure on the lumbar spine, which is a weight bearing structure.

3) AYURVEDIC ASSESSMENT OF THE CONDITION

A herniated or ruptured disc has elements of a Vata and Kapha imbalance. Chronic pain associated with a Vata imbalance. Pain is a perception of the mind or in the Yogic Darshan, the Manomaya Kosha. There is a dullness of the senses; therefore, pain may not be related to a physical abnormality, or pain may not be in proportion to the extent of the injury. This often explains why patients do not respond to physical therapy or traditional treatments.

The ruptured disc, a structural abnormality of the body, is a Kapha imbalance. A SYT evaluation will find additional weaknesses of the physical body, the Annamaya Kosha, that delay healing and contribute to future injuries. The recommended Yoga postures should increase strength in these areas. The erector spinae and hip rotators are frequently weak with herniated discs.

A Yoga practice to balance these elements would include slow rhythmic movements that emphasize breath followed by steady postures to develop strength.

4) COMMON BODY READING

In a relaxed or neutral position, the body will adjust to relieve pain or pressure on the nerve root or torn ligaments. Look for tilting of the pelvis and shifting weight to one leg. This can mimic finding of scoliosis. Tight hamstrings, weak psoas muscles, and weak erector spinae muscles decrease the lumbar curve and predispose the lumbar spine to additional injuries.

The level of the involved nerve root determines the location of the radiating pain and muscular weakness.

5) CONTRAINDICATED YOGA PRACTICES

Forward bends or movements that cause loss of the lumbar curve are contraindicated. Loss of the lumbar curve pulls the spinal cord or nerve root against the protruding disc, causing injury and swelling of the nerve. This causes both early (acute) and delayed pain as inflammation develops in the nerve root.

An important part of a yoga practice is developing self-awareness in the body. A yoga pose should be steady and comfortable. The challenge is to link the delayed pain to earlier activities, so their daily practice and other activities can be appropriately modified.

6) GENERAL RECOMMENDATIONS FOR HERNIATED DISC

A) Relief of pain. Even if only transient, this restores confidence in the patient's mind that their body can heal itself. It allows a mind that is preoccupied with pain a moment to pause and relax, relieving feelings of hopelessness and frustration, and decreases the likelihood of developing depression. It decreases dependency on narcotic medications.

These patients have weak core muscles, so start with a reclined, restorative pose. Lying supine eliminates compression on the disk from body weight. Muscle spasms frequently accompany back pain and respond to alternating heat and cool packs, and gentle massage.

B) Stabilize situation and lifestyle change recommendations. The lumbar spine is a weight-bearing joint, so achieving an optimal weight is very helpful. Age causes drying of the discs. Hydration with water improves the flexibility of the disc and helps it move back into place (Think of Play Dough); encourage drinking water, especially in older patients. Activities causing sudden flexion, pounding or twists of the spine should be avoided. Examples include the following: skiing, running, golf, diving, tennis, etc.

C) Maintenance and long term considerations. Long-term maintenance has the goal of preventing recurrent injuries. Devotion to a daily practice will frequently determine the effectiveness of the program

and the likelihood of preventing new injuries. The recommended asanas should be based on the results of a **Structural Yoga Exam**. The most important concept is protecting the lumbar curve. Strong muscles protect the underlying ligaments. Strengthen the erector spinae muscles and correct the pelvic tilt by lengthening the hamstring muscles and strengthening the psoas and rectus femoris muscles. Improved abdominal muscle strength changes the pivot point for forward bends.

7) Questions & Answers

The following questions and answers were found on Yogaforums.com with searches on sciatica and herniated disc.

Question: I thought backbends were contraindicated with disc herniation. Is it really beneficial to do gentle backbends like Salabhasana? And are forward bends with knees bent okay?

Answer: Yes this is the general rule however I find nearly all students benefit from locust as long as they learn to decompress before they lift the legs. The legs must be reaching backward during the poses. Some students can even do cobra with no problem. Bending forward with knees bent is often OK. However, I would not even give this for someone who is having active discomfort and not able to walk upright.
Mukunda

Question (August 6, 2004): I have two sciatica clients, in Denver, who I have been helping with Yoga Therapy for 2 months. I am writing to ask for your advice. They both have gained benefit from the Joint Freeing Series, hydrotherapy and Ayurvedic advice. However they both have had painful relapses recently and

I thought you would know what to tell them as to what to expect for recovery time. Neither of them has patience and this of course is part of the syndrome. The man is Pitta with vata provocations (type A pushing). The

woman is Vata with Pitta provocations. She always gets emotional when she is touched by any healer and is confused about why. I feel like her psychotherapist and know she is on a brink. Suggestions?

Answer: This condition often takes long term management. In about half the cases there is a cure and no more symptoms but then there does the other half need to be changing their protocols roughly seasonal.

As a vata

displaced condition, it is quite common for there to be a need for profound relaxation and change in life direction to relieve the deeper pushing of vata. When vata is displaced it is a force that is trying to change your

thoughts, emotions, prana (all the koshas) into a life nurturing direction. Until that is clear there is pain and discomfort. Psychotherapy is often needed to get behind the emotional and mental fog that arises from the

imbalance of vata and Pitta which will manifest as vata's memory loss and/or loss of pitta's discernment quality. Spiritual counseling and searching for the inner teacher is the deeper need however. Thus a psychotherapist doing sadhana can bring wonderful relief and support for the need of regular sadhana for these suffering clients. Mukunda

Question (April 24, 2005): I had a herniated disc seven months ago. I went to physical therapy for a few months. The pain didn't go away as time went on, so due to my anxiety, I would never sit. I'd just sit stand all day or lay down. I haven't even bent my back. So I've been standing for three months or so now.

The pain in my leg is gone unless I jump around. It will come back for a short amount of time, but then go away. According to my doctor, my disc should be healed. For the first time, I've been sitting down. I tried to sit on the floor today; my lower legs began to hurt. I don't know what to do.

What do you recommend? Lee

Answer: The main recommendation is to hydrate. As the disc is made of 80% water one with this condition is often chronically dehydrated. Just filling up your tank regularly, 1-2 quarts per day minimum; water can make a huge difference. In addition there are mild back bending poses like cobra and locust using only your hip muscles not arms while doing them that can help send nutrients to the disc. Individually tailored Structural Yoga Therapy can help too if you are near me or any of my graduates. Namaste Mukunda

Question (August 5, 2004): I have a student who has sciatica in her left hip. From closer observation, I notice that her left hip is considerably higher than her right hip and her right hip is twisted forward. Her spine is curved to compensate for hip height difference, and perhaps one disk is starting to think about bulging. She does feel comfortable in child's pose). What do you recommend I do with her and is there anything/adjustments that I should do while teaching her in a general yoga class to help her condition? Many Thanks C

Answer: In general you want to do postures that improve her alignment in asana as this may help her sciatica. Also of course avoid contraindicated poses for sciatica – hamstring stretches and emphasize strength of the gluteal region (hip extensors more specifically) in poses such as locust and stretch of its antagonists, the hip flexors in poses such as the runner stretch or lunge. Giving extra relaxation exercises (such as child's pose) is also helpful as sciatica as a vata imbalance inhibits the ability to relax and sleep. Calming pranayama like the wave breath and concentrating on progressive relaxation is a must.

I will now address the answer to this more explicitly as you are in my Structural Yoga Therapy (SYT) certification course. At this point you have had only 2 of the 12 weekends required for certification, I think others will also benefit from hearing the full scope of this work. I want you to help you utilize my book and my skills more beneficially. Use me by all means, but overtime learn to use me to point to what you cannot get to from referring to my writings. I want you to utilize my response to see how you can utilize your powers of observation and discernment more acutely (being a Sherlock Holmes of body reading assessment) in making future assessments.

There are six levels of assessment information that can be utilized in making a thorough SYT set of recommendations for any given situation.

1 -You began this question well enough showing a closer observation thus utilizing bodyreading skills from chapter 12 of my book. By using this step alone you can create a helpful program of SYT. One solution to your question about what to do can be found in by using my book. It tell you what muscles are contracted making postural changes (see table 3 page 103), another chart shows therapeutic asanas for postural change (table 6, page 266). However this first level of SYT is not very precise.

2 - The second step in the progression to more accurate SYT recommendations is to take and evaluate this body reading in a kinesiological manner. So that is what I will do next I will say the postural imbalances you identified in kinesiological language. For new readers kinesiology is a second level of anatomy studies applied to understanding what muscles are contracting to create movements. Left hip is elevated (thus a contraction of left quadratus lumborum & possibly psoas), right hip is internally rotated (contracting gluteus medius anterior fibers and tensor fascia lata also some of the adductors which are internal rotators too); this implies that the left hip is externally rotated (contracting the gluteus maximus and deep 6 rotators anterior to it - among them is the piriformis infamous for causing sciatica). By considering the antagonists (opposing movers) of these contracted muscles you can discover what muscles are over stretched. A sample list of muscle antagonist pairs is located in table 4 page 122; and another chart shows what asanas strengthen and stretch what muscles (table 5 page 254-255). From this knowledge you can create a more precise set of recommendations that direct the students awareness to feeling the stretch and strength where it is needed.

3 – The last three steps go beyond the scope of my book covering information only given in my certification training. A step you left out, because you are new to this training, is to do a range of motion (ROM) assessment of the client either following the joint freeing series (JFS) as it is given in chapter 16 – Anatomy and Mobility Assessment or through a detailed assessment by learning to use the goniometer

(sold via my website bookstore) based on our SYT Examination Manual. This manual is available only to students in the training. This provides exact angles of ROM to be more precise than JFS assessment based on guessing the angles of motion. Either manner will tell you what muscles are tight. Then referring to the previously mentioned table 5 you can give yet more helpful recommendations.

4 - Later on you will learn to do a physical therapy based form of muscle testing (MT), also detailed in your SYT Examination Manual, to determine how much a muscle is weakened. With these four assessments - bodyreading, kinesiology understanding, ROM, and MT - then you can utilize your thinking more clearly in giving accurate Structural Yoga Therapy recommendations.

5 – You can also give recommendations based on an understanding of the condition; in this case sciatica or you could look up that topic (www.yogaforums.com for the archives of such questions). Sciatica can be a mixture of three factors that compress the sciatic nerve – from its roots at L4-S3 as a result of **herniated** or degenerated disc; a contraction of the nerve in the gluteals between the piriformis above and the obturator internus below; or tight hamstrings affecting the area where the nerve divides into its two components – peroneal and tibial nerves. For this precision, the student will need to comprehend the scope of the full 2-year program. A more informed set of recommendations would take into consideration all five factors. In this way by understanding the specific muscles that are imbalanced with her unique sciatica condition, understanding the specific muscles that are imbalanced with her unique sciatica condition can create a more personally tailored program, more pertinent to this woman.

6 – An Ayurvedic assessment of the condition will also point out what of three approaches is best utilized in giving the above recommendations. This material is given out sparingly in this course until my book Ayurvedic Yoga Therapy is published (hopefully by the end of this year). A training in this method will be given May 16-21 in Zurich, Switzerland.

One also needs to keep in mind the guidelines from my first book, Yoga Sutras of Patanjali, as these guidelines help us to become clear on what is harmful and avoid all such movements that cause himsa (see YS II, 33-35), such as straight leg forward bends. These writings also reveal how we can guide ourselves and students through the progression of Classical Yoga training leading to freedom from all forms of pain and suffering. Mukunda

Question (May 20, 2003): In one of the earlier question/answer columns, if I remember correctly, you talked about working with someone with a herniated disc. I went to the archive and didn't find what I was looking for. What I remember is that in working with someone with a herniated disc you could give gentle twists or side bending to maybe ease the bulge of the disc back into place. I have a student who has a herniated disc so any information you might offer would be greatly appreciated. He has some discomfort but a doctor who saw him said since he was skiing with not problems, surgery to correct the herniation wasn't recommended. Also, what postures would you recommend and what postures would you avoid? What would be the best way to approach his condition to best serve him? Thanks you for your help. Sincerely, S

Answer: For herniation we avoid strong or prolonged forward bending as they nearly always herniate posterior and to the right side. Safest is gentle backbends while encouraging elongation of the spinal column -- that is pelvis moving away from the cranium. Twists are usually good as long as that same principle is applied. I also highly recommend water, as disc problems are often associated with dehydration. Mukunda

8) References

Calais-Germain, Blandine. Anatomy of Movement. Eastland Press, 1993.

Harrison's. Principles of Internal Medicine, McGraw-Hill, 1994.

Stiles, Mukunda. Yoga Sutras of Patanjali. Weiser Books, 2002.

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9) Appendix

January 31, 2002

In Yogaforums.com from Mukunda

Dear Friends in Yoga -

The sacroiliac is the key joint to the lower body. There have been so many queries on problems related to this that I wanted to share with you an exercise I have devised that relieves a host of offshoot problems - knees, lower back, sciatica, and even menstrual irregularities. While these conditions are not necessarily caused by S/I dysfunction, they accompany it. I find that by creating natural motion in the S/I it begins to help vata/pranic energy find its way to balance.

The sacroiliac joint has a small amount of motion #8211; adduction, abduction, flexion and extension. Without these motions or moving into extension (downward) during hip flexion (lifting your knees or sitting), your lower back and hips can be quite uncomfortable. The solution is to mobilize the sacroiliac properly.

The following exercise balances the joint so that as the hip goes into flexion, the psoas will contract with sufficient force to overcome its antagonist, the gluteus maximus, and the joint will flex (move upward). The movement needs to be done regularly for those who have frequent lower back discomfort until the correct pattern of motion is established. This should be done before any other exercises or asanas for those with reoccurring lower back, sacroiliac or hip strains.

Sit on the floor with your knees bent and feet to the right side, so that the right foot points back beside the hip and left foot is adjacent to the right knee. If you are stiff and unable to sit comfortably erect, then place sufficient padding under your pelvis to make it comfortable to be erect and move. Avoid leaning so far to one side that your hand needs to support you on the floor.

The first movement is to pelvic tilt back and forth from the iliac crest (top of pelvis) exhaling as you contract your belly and round your lower back. Then arch your lower back accentuating your natural lumbar curve by contracting the psoas as you inhale. Repeat 12X, or until you feel the motion becoming smooth, whichever takes longer. You are looking for a feeling of release (Kriya) in the tissue, energy, or emotion that will react to the motions.

The second motion is to take the top of the right thigh (not pelvis) and move it into internal and then external hip rotation. During internal hip rotation your pelvis will lift from the floor, during external rotation your ischial tuberosity (sitz bone) will touch the floor. Inhale as you lift your hips moving into internal hip rotation. Exhale as you lower the hip coming into external hip rotation. Continue for 12X, then reverse your legs and repeat.

When finished stand up and walk in place for 6-10 steps which will assist in promoting stability. Blessings.
Mukunda

10) Biography of Author

Mark Pierce is a Physician who is Board Certified in Internal Medicine. He graduated in 1979 from UC Irvine, School of Medicine; and completed his residency training at Orange County Medical Center in 1982. He currently practices at Hilltop Medical Clinic, an urgent care center, and provides weekend coverage for a local Oncologist. He is an Associate Professor at UC Davis, teaching at the Mercy Family Practice Residency Program.

He has practice yoga for 12 years and currently teaches at his wife's studio, Nancy Sutton's House of yoga. He is incorporating the concepts of SYT into his medical practice.