

**The Effects of Structural Yoga Therapy on
DEGENERATIVE DISC DISEASE**

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1.a. Case Study (Jan) – Initial Interview – Review of Symptoms, Pain, Self Assessment - September 2005

Jan is 50 years old and is 5 foot two inches tall. She is petite and has striking red hair and green eyes. She is a computer programmer by trade and has been married for seven years. Her history is as follows: In 1990, Jan began experiencing pain in her lower back which got exponentially worse by 1991. She went to a physician, whom, after seeing the results of an MRI told her she had a bulging disc in L4/L5. After visiting the doctor she underwent physical therapy for several months, but continued to have low back pain. Prior to her initial back pain in 1990, Jan was physically active. Her activities then included swimming, skiing and dancing.

In 1993 Jan was sharing a room with her nephew at her parents' house during the 4th of July weekend and was awakened suddenly by her nephew screaming in the middle of a nightmare. As she jumped up from the bed, she immediately felt a 'pop' in her low back and sharp pain in her right leg. The 'searing' pain started to radiate down her leg two days later, accompanied by numbness and tingling. She described the sensation of her leg feeling like someone taking a "hot iron and tracing a path down my leg"... She called the physician who initially diagnosed her bulging disc in 1991. He refused to see Jan. He said there was nothing wrong with her. She saw another physician a week later, who advised her to get an MRI. He also told Jan there was more to the bulging disc—part of the disc went into the spinal canal and was now putting pressure on the joint. He spoke about doing laser surgery, a new treatment for the low back at the time. Jan was not comfortable with this idea and spoke with a family member who referred her to Dr. Sachdez, a neurosurgeon. By this time, two weeks had passed. Dr. Sachdez took a look at the MRI results and immediately decided to conduct emergency surgery on Jan the next morning. Dr. Sachez was afraid that Jan had suffered nerve damage as a result of that 2-week period she spent looking for a doctor. One of the nerves involved controlled bowel and bladder function, and so this was extremely serious. The first surgery was done on July 23, 1993.

As a result of surgery, Jan was in the hospital for a week, after which she once again went to physical therapy. Most of the initial pain went away during this period. Two months later, in September, 1993, Jan had a severe allergy attack which caused a coughing fit, during which she felt the same searing pain/pop as before in her back. She called Dr. Sachdez, who was unable to do another cat scan and felt that the inflammation left from the previous surgery would cloud the image from the CAT scan. He also did not want her aggravating or putting pressure on her disc if that were the case. He also mentioned that it was too close to the previous surgery on July 23rd. and recommended complete bed rest for Jan for a period of six weeks. At the conclusion of the six week period, Jan went to the Doctor once again, did a cat scan with contrast and found out that the L4/L5 discs had been herniated on the same (right) side. Dr. Sachdez recommended yet another surgery, a Discectomy, which is the surgical removal of part or the entire offending intervertebral disc. She had a second surgery in November 1993, and was pain-free for a year.

Jan underwent post-surgical Physical Therapy for her back and a ‘drop foot’ (right leg) which was a result of nerve damage caused by waiting two weeks to see Dr. Sachdez after Dr. Lansen refused to see her. She also had to learn to walk again. She could feel nothing below her right knee. This continued for a year following the first surgery. The doctors were also unsure as to the eventual prognosis of her ‘dropped’ right foot and Jan was told it was unlikely that she would get any feeling back at all in her right foot. The physical therapist also massaged Jan’s back and gave her several exercises and massages for the foot muscles. Towards the end of Physical Therapy Jan was given a Leg Brace. I asked her to describe the brace and she told me it was a plastic brace molded to her foot, and went from the ball of the foot under the back and side of her heel up the back of leg to under the knee. A year later the pain came back again in her lower back and became more and more painful. This happened to her on a gradual basis—there was no episode that triggered the pain. She was taking painkillers by the end of 1994 regularly. I then asked her about her quality of life at this point, and she mentioned she had “strange” feelings and feelings of frustration, devastation and basically “giving up” at that point. There was gradual disintegration over a two-year period which affected Jan’s activities of daily living--even walking became very painful.

In March 1996 Jan went back to Dr. Sachdez who did another MRI and found another herniation of the disc, (L4/L5) this time on the left side. Dr. Sachdez’ recommendation was for Jan to have yet another Discectomy. This would be the third Discectomy in three years. At this point Jan wanted a second opinion. She went to another physician, Dr. Spevak, a spine specialist who was referred to her by another relative. Jan then found out that she had degenerative disk disease and needed a spinal fusion. Dr. Spevak said the real problem was not the herniated disk, but that the discs were disintegrated—the vertebrae were basically crumbling, and therefore having another discectomy would not fix the problem long-term. By now it was the fall of 1996. Jan spoke to Spevak about her options. He told Jan to get a disco gram, a test where a needle is inserted the vertebrae of the spine to see if the doctors can recreate the pain because he suspected that there was a second disc that was causing the problem: L5-S1. Normally they would insert the needle through the spinal cord to the discs. Dr. mentioned the needle could also go to the spine from the side of the body. Jan took Demerol and asked that only if they were able to get to her spine through her side would she be okay with the test. She had an unfortunate incident with a spine tap once before and was determined not to have it happen again.. The results were that the two discs were involved (L4/L5 and L5/S1) and Dr. Spevak recommended spinal fusion surgery for both discs at the same time. For the next two months Jan was living on painkillers and took the opportunity to do research on spinal fusions. In January 1997 she decided to do the surgery.

On March 12, 1997 Jan had a 10-hour spinal fusion surgery at the Hospital for Joint Diseases—which was a double fusion surgery with instrumentation and a bone graft—rods and screws. The bone graft came from her hip. She was in ICU for a weekend. Titanium rods were placed in her back in the lumbar/sacral vertebrae: L4-L5 and L5/S1. Jan mentioned she was “out” for eight to nine months after the surgery. She did not see a Physical Therapist at this time. She started physical therapy a month after surgery for a few months. After a year, she began to feel better and do things she

couldn't do before. She could walk again. Sitting was the worst—walking was not great—lying down was the most comfortable for her. Jan mentioned that she was able to finally go out of her house in September—6 months after the surgery.

In 2003, Jan began experiencing some neck pain as well as shoulder pain. Jan then had x-rays done by an Associate Physician who told her her “neck was messed up” and that she had “Arthritic conditions in her neck.” When Jan pressed him for a more specific answer he would not give one to her and told her there was nothing to worry about. He then went on to state that the area where she had her spinal fusion (L4/L5; L5/S1) was extremely strong because of the titanium rods, but that as a result of the rods, there was pressure directly above the area, which could have contributed to the degeneration of the cervical vertebrae. He also told her she would definitely need yet another surgery soon. Jan was far from happy to hear this news. Her shoulder got worse in the fall of 2004. As a result of a sudden fall in December of 2004 her entire shoulder froze up. There was no mobility at all, and even touching the shoulder was painful. She had frozen shoulder surgery in Jan. 18, 2005 followed immediately with physical therapy through July 2005. In September 2005, Jan decided to try Structural Yoga Therapy.

In early November, 2005, Jan called me to let me know that she was experiencing unusual joint pain in her elbows, hips and fingers. I immediately told her to see a physician and because of the sites mentioned, and her physical build, I suggested a possible bone density test. She called me back two days before her session on November 8, 2005 to let me know that she had a bone density test and the results indicated that she had osteoporosis in both of her hips and her right hand. At that point, I asked her if this was her first bone density test. Her response was that in February 2000 she had a bone density test done and was told she had osteopenia. At the time, however, her physician told her that the test results were a bit higher than he would like, but that she should not really worry about it and also recommended that she “carry on” with whatever she was doing in daily life. The only other recommendation made was to take high doses of calcium.

Jan's goals for the next three months were:

1. To be free from pain and stiffness;
2. To have a better quality of life overall
3. To be able to sleep more soundly
4. To be stronger and have a sense of being able to “stand on her own two feet” (be more grounded)

1.b. Physical Assessment (Including Body Reading and Postural Analysis)

Jan is 50 years old and is 5 feet two inches tall. She is petite and has striking red hair and green eyes. Jan is extremely energetic and vibrant.

Bodyreading results indicated that Jan has flat feet with the right leg more pronated and the left leg slightly more supinated. She tends to favor her right leg when

standing and also hyperextends the right knee. A leg length test revealed that her right leg was slightly longer than the left. The Sacroiliac Test revealed weakness initially on the right side but when tested twice more both sides of Jan's sacrum were unstable. There was, however, more of a drop on the right side. When in supine positions, Jan's left hip is higher and her pelvis is rotated. A Balance test also revealed difficulty balancing unilaterally. The Range of Motion and Muscle Tests revealed several weak and tight muscles.

ROM and MUSCLE TESTING

	9/1/05	9/1/05	12/1/05	12/1/05
Supine Hip	ROM L/R	MT L/R	ROM L/R	MT L/R
Psoas MT		2.5/3.5		3/3.5
Sartorius Isoation MT		5/4**		4/4
Hip Flexion (Bent Knee)	130/130	2.5	130/130	2.5
Hip Flexion (Straight Leg)	103/110	2.5	101/110	2.5
External Rotation	75/75	4/3.5	76/71	4/3
Internal Rotation	43/32	3/4	39/32	3/3.5
Adduction				
HipAbduction MT		4/3.5		3.5/3.5
Hip Extension MT		4/5		4/5
Prone Hip				
External Rotation	70/75	4/3.5	70/75	4/3.5
Internal Rotation	44/45	3/4	44/45	3/4
Hip Extension	15/15	2.5/3	15/15	2.5/3
Gluteus Maximus MT		4/3.5		3.5/3.5
Supine Knee				
Flexion	153/143		153/143	
Prone Knee				
Extension MT		2.5/4		2.5/4
Flexion MT		3/3.5		3.5/3.5

** with left side, left pelvis rotated to right; with right side hip rolled all the way up off the Mat.

° - indicates a significant change in measurement over the three month period.

1.c. Summary of Findings – Jan

Muscles to Strengthen	Muscles to Stretch	Muscles to Release
Psoas	Rectus Femoris (R)	Rectus Femoris (R)
Hamstrings (R), gastrocnemius, Rectus Femoris	Gastrocnemius	Gastrocnemius
Gluteus Maximus (R)	External hip rotators (R)	
<u>Quadratus Lumborum (R)</u>	Sartorius	
TFL		
External Hip Rotators		
Adductors		
Mid/low Trapezius/Serratus (L)		

L = Left; R = Right

Note: Jan’s ROM for External Hip Rotation is excessive with less ROM in Hip Internal Rotators. Both Adductors need to be stretched and strengthened. Because of the dropped foot, the muscles of the lower Right leg need to be strengthened, including the peroneals, gastrocnemius and intrinsic muscles of the foot. The tensor fascia lata on both sides need to be strengthened as well as the external rotators. Core Musculature needs to be strengthened, with emphasis on the Transversus abdominus and the obliques, in particular.

1.d. Recommendations

I saw this client on a weekly basis—one to two times a week and made the following recommendations.

I gave Jan the entire Joint Freeing Series (JFS) to practice at home with modifications as follows, and with a deliberate focus on the breath:

JFS Nos. 1-3 (Ankle Dorsiflexion, Plantarflexion, Inversion and Eversion): I initially asked Jan to do the exercises with 8-10 repetitions and increased the repetitions to 15-20 over the three-month period. In addition, we worked with increasing talar mobility by doing calf stretches v. the wall and added plies. Peroneal strengthening was achieved by working with the feet, with an emphasis on lifting the fifth (pinkie) toes up to the ceiling. To fire and wake up the plantar fascia muscles I had Jan roll her entire foot over a small ball and then used a foam roller to release those muscles. To strengthen the plantar fascia muscles, we again worked on the feet, wherein I asked Jan to imagine pulling her toes toward the arch and in the process lifting the arch off the floor. I instructed her during all the exercises to visualize the right foot actually doing the exercises and in some instances added manual support to the movement. Footwork was also emphasized in every session.

JFS No. 5 (*Hip External and Hip Internal Rotation*): Started with legs together in Dandasana. Take a full, slow and deep breath—inhale and exhale. One more inhale, then on exhalation, beginning with the left foot “flointed”—not flexed and not pointed, externally rotate the left hip as you slide the leg out to the side and away from the midline. I also instructed Jan to keep the foot flointed and then think of the fifth toe turning to the ceiling.

JFS No. 6. (*Spine Extension/Flexion*): The modification here was to go from neutral to a “comfortable” spinal extension, also with emphasis on the breath and elongating the spine.

JFS. No. 7 (*Hip Extension/Flexion*): Same as No. 6, we worked from neutral (bringing the knee to just under the hip) to hip extension, making sure the lifted heel never went beyond the sitz bones. Additionally, I instructed Jan to dorsiflex her foot here. Jan was also instructed to hug all the muscles to the bones of the extended leg and as she pressed out through the heel of the extended leg to engage the buttock muscles. For both JFS. No. 6 and 7, there was also instruction concerning the foundation—the connection of the palms/wrists and hands to the floor and the engagement of the serratus with the heart lifting slightly to the ceiling. Later on I added a balancing component to this and had Jan raise one arm off the floor.

JFS Nos. 14-15 (*Shoulder External and Internal Rotation/Shoulder Flexion/Extension*) – the approach here was the same as JFS No. 13 (b)

JFS No. 16 (*Spine Extension-Flexion/Scapula Adduction—Abduction*): (a) The movement was done from “comfortable” extension to neutral; (b) eventually upper thoracic flexion was added, first moving to neutral and then going past neutral into extension.

JFS. No 18 – (*Spinal Rotation*) – Upper Thoracic rotation emphasized here. With both hands on and pressing into hips. The Universal Principles of Alignment of Anusara Yoga was applied here: Opening to Grace, Muscle Energy, Inner Spiral, Outer Spiral, Organic Energy.

For the entire Joint Freeing Series, there was a tremendous emphasis of breath with movement and cues about the freeing qualities of the breath to affect a lightness of being (including the inner and outer body), awareness, and consciousness of mind, body and spirit. Jan has a tendency to do things quickly without thinking. A note here is that by allowing the breath to lead the way in her movement patterns, Jan became much more aware of what her body could and could not do, instead of giving up before even doing the work.

Other Recommendations:

- (1) To strengthen adductors, mid/low traps and abdominals: (a) Setubandha with a yoga block between the thighs. We also worked with the feet and peroneals in this pose as well as really engaging the muscles of the back body and the back of the arms as they supported her body by pressing firmly into the earth to lift the heart center to the ceiling. This pose was a combination of static and dynamic beginning with a slow breath and dynamic movement three times and then holding for 10-30 seconds or 6-8 breaths; (b) the block was then released and after doing apanasana with an emphasis towards a neutral spine, rolling bridge was taught to work the abdominals (6 repetitions and progressed to 12 reps); (c) Navasana;
- (2) Half Dog v. the Wall with a block between the thighs and hands shoulder width against the wall. (a) added slow running in place to work the muscles of the lower leg.
- (3) Psoas Release (a) Sliding Leg Extensions
- (4) To work on serratus and mid-trapezius: (a) Cat-Bow pose. And (b) single arm cobra; (c) plank pose with one arm off the floor –also used a block between legs here to engage adductors.
- (5) (To Strengthen Hip Extensors and External Hip Rotators): (a) Eka Pada Salambasana (Single Leg Locust) Worked with each hip/leg in both a neutral and externally rotated position. (b) Vrksasana; (c) Warrior II focusing on the hip rotators, muscle and organic energy. With all prone exercises/asanas given to Jan a pillow was placed below the pelvis to support the lumbar spine.
- (6) (To improve overall Balance, Coordination and Proprioception): (a) Balancing Tree on Floor; (b) with a block between hands; (c) standing on a foam pad and progress to a half-foam roller. (d) Standing Balance Exercise with a 11b dumbbell in each hand. Stand on one foot on the floor and the other leg extended in front of body; with eyes open and gently swing arms back and forth—to challenge close eyes. Repeat c and d here as well.
- (7) Client was retrained how to navigate functional activities of daily living using the support of her foundation (legs); her core musculature and maintaining a neutral spine throughout in sitting, standing and lying activities. Other activities included sitting at her desk at work, with or without the phone, brushing her teeth, sitting/lying in bed and squatting. Additionally, attention was paid to releasing the neck muscles during movement.
- (8) Supine Back body release, crawling exercise, spinal rock and neutral cat were given as warm-ups at the beginning of every session.
- (9) Tadasana was utilized to address the correct postural alignment.. Abdominal exercises were also given while standing in Tadasana. “Since the abdominal muscles

must protect your back while you're standing and moving round they should be trained while you're standing and moving". **Back Trouble, A New Approach to Prevention and Recovery, Deborah Caplan, PT.**

1.e. Refinement of Initial Recommendations and Results of Recommendations

September to December 2005

Refinements to the recommendations were given in this period.

September, 2005

Jan began to make progress on the exercises given above. She was very diligent in doing the exercises and asanas that she liked, and not so diligent in doing the ones she was not fond of. In addition, it takes her a few times to learn things and make them her own. Her balancing improved only slightly in August. She was also worried about losing her job and mentioned that she had only about six or so months left—she was under the impression that her employer would be laying a bunch of workers off at her facility.

October, 2005

Jan mentioned that her general sense of well being had begun to improve from our meeting four weeks ago. Her balance and proprioception had improved to the point that she no longer needed help. She stated that her low back was generally okay, but when she gets fatigued from sitting too long at work or stressed out, her back “seizes” up. I reminded her about the wave breath, and the deep ujayii breath and she mentioned forgetting to do them. I then gave her specific homework to do each of these breathing practices for 10-15 minutes every day, whether or not there was an episode. A visualization technique was also added to the instruction with the utilization of a soft, transparent ball and breathing this soft ball into the area of tension/tightness (lower back) wherever she felt pain or discomfort. Towards the end of October, Jan mentioned feeling tightness in her hips (which began to hurt especially when doing the JFS), elbows and right fingers, wherein she was instructed to see a physician.

November 2005

Hamstrings showed some improvement as well as glutes. I also got a call from Jan in early November to get some news. After receiving a bone density scan, she had been diagnosed with Osteoporosis in her hips and the right hand. She was now extremely depressed. In spite of this, I noticed that the ROM in her left shoulder was practically back to 180 degrees, in spite of a complaint that at the 1 o'clock position of lifting her arm over her head, she felt a “catch” in the joint. I saw her the next day for her session, and we spent the entire session doing the Joint Freeing Series, Strengthening and Restorative Poses.

December 2005

The Rolling Bridge was taken out of Jan's exercise program and a modification was made to Navasana--the boat pose. It became a rolling half-boat, emphasizing the eccentric contraction movement of the asana. Weight bearing exercises/asanas were given and encouraged through the proximal joints of the body, especially the femoral and humeral heads in quadruped positions, and included neutral alignment of the wrist. Jan was taught how to get on and off the floor, bed or any surface. Core Stability continued to be emphasized and Squats with a Stability Ball was added to her program as well as wall push-ups and "push hands" v. wall. To challenge weight bearing proprioceptive exercises and tools were added, including discs, foam rollers and stability balls. I also encouraged Jan to do weight training and cardiovascular exercise as an addition to Structural Yoga Yoga Therapy and she is now committed to doing so. I also added a gentle vinyasa to her program. Jan also reported that her back was much better 90% of the time and she felt 'lighter and more energetic than she had been in years'. Jan our Structural Yoga Therapy Sessions to this overall sense of wellbeing.

2.a. Name and Description of Condition

What is Degenerative Disc Disease?

Many of the problems in the spine are caused because of the process of degeneration of the intervertebral disc. All daily activities test the spine's ability to support your body weight. Over time, these repeated daily stresses and minor injuries can add up and begin to affect the Spinal discs. Minor injuries to the disc may occur and not cause pain at the time of the injury. However, as they add up, the disc eventually begins to suffer from the wear and tear and begins to degenerate.

Anatomy – Degenerative Disc Disease

“Back specialists sometimes look at a spinal segment to understand and explain how the whole spine works. A spinal segment is made up of two vertebrae attached together by ligaments with a soft disc separating them. The spinal segment allows us to focus on the repeating parts of the spinal column to better understand what can go wrong with the various parts of the spine. All of the parts should work together to allow weight bearing, movement and support. When all the parts are functioning properly, all spinal segments joint o make up a remarkably strong structure—the spinal column. When one segment deteriorates to the point of instability, it can lead to problems at that segment causing pain and other difficulties.

The spine itself has three main segments: the cervical, thoracic and lumbar spine. The cervical is the upper part of the spine, made up of seven vertebrae (bones). The thoracic is the center portion of the spine, consisting of 12 vertebrae. The lower portion of the spine is called the lumbar spine. It is usually made up of five vertebrae, however, some people may have six lumbar vertebrae.

The normal spine has an "S"-like curve when looking at it from the side. This allows for an even distribution of weight. The "S" curve helps a healthy spine withstand

all kinds of stress. The cervical spine curves slightly inward, the thoracic curves outward, and the lumbar curves inward. Even though the lower portion of your spine holds most of the body's weight, each segment relies upon the strength of the others to function properly.

Between each vertebra of the spine is a soft, gel-like cushion called a disc that helps absorb pressure and keeps the bones from rubbing against each other, otherwise referred to as intervertebral discs. The annulus is the disc's outer layer and the strongest area of the disc. It also helps keep the disc's center intact.

Lumbar Spine

“The lowest part of the spine is called the lumbar spine. This area has five vertebrae. However, sometimes people are born with a sixth vertebra in the lumbar region. The base of your spine (sacrum) is a fusion of many bones, and when one of them forms as a vertebra rather than part of the sacrum, it is called a transitional (or sixth) vertebra. This occurrence is not dangerous and does not appear to have any serious side effects.

The lumbar spine's shape has what is called a lordotic curve. The lordotic shape is like a backwards "C". If you think of the spine as having an "S"-like shape, the lumbar region would be the bottom of the "S". The vertebrae in the lumbar spine area are the largest of the entire spine, so the lumbar spinal canal is larger than in the cervical or thoracic parts of the spine. Because of its size, the lumbar spine has more space for the nerves to move about.

Low back pain is a very common complaint for a simple reason. Since the lumbar spine is connected to the pelvis, this is where most of weight bearing and body movement takes place. Typically, this is where people tend to place too much pressure, such as: lifting up a heavy box, twisting to move a heavy load, or carrying a heavy object. Such repetitive injuries can lead to damage to the parts of the lumbar spine.]

In between each of the five lumbar vertebra is a disc, a tough fibrous shock-absorbing pad. At the end of each vertebra are ‘endplates’ which help hold individual discs in place. Each disc contains a tire-like outer band (called the annulus fibrosus) that encases a gel-like substance (called the nucleus pulposus).

Nerve roots exit the spinal canal through small passageways between the vertebrae and discs. Pain and other symptoms can develop when the damaged disc pushes into the spinal canal or nerve roots”. (reprinted from Spineuniversity.com)

2.b. Gross and Subtle Body Symptoms

Disc herniation occurs when the annulus fibrosus breaks open or cracks, allowing the nucleus pulposus to escape. This is called a Herniated Nucleus Pulposus (HNP) or herniated disc. A herniated disc occurs most often in the lumbar spine, in particular at L4-L5, L5-S1 levels. The reason for this is because the lumbar spine carries most of the

body's weight and is not as supported as other areas of the spine, e.g. the thoracic spine which has the ribcage surrounding it as well as several muscles. People between the ages of 30-50 years of age appear to be vulnerable because the elasticity and water content of the nucleus decreases with age.

Disorders Affecting Intervertebral Discs, Herniated and Bulging Discs

A slipped disc can mean a ruptured disc or herniated disc (pronounced “her-knee-ate-ed”). Unlike the name slipped disc, discs do not slip. Each intervertebral disc is sandwiched between two vertebrae supported by a system of ligaments that help hold the spinal package together.

Disc disorders are contained or non-contained. A bulging disc is an example of a contained disc disorder. It has not yet broken open—the nucleus pulposus remains contained within the annulus fibrosus. It could be compared to a volcano prior to eruption and may be a precursor to herniation. The disc may protrude into the spinal canal without breaking open. The gel-like interior (nucleus pulposus) does not leak out. Instead the disc remains intact except a small bubble pops out attached to the disc.

A non-contained disc is one that has either partially or completely broken open—a herniated or ruptured disc. For e.g., imagine a tube (annulus fibrosus) of toothpaste (nucleus pulposus) placed under pressure. The pressure causes the toothpaste within the tube to move wherever it can. If any part of the tube is weak toothpaste may leak out. When a disc herniates the contents may spread out to the spinal cord and nerves. The disc material has little space to go – into the area occupied by the spinal canal and nerve roots.

Regarding the leaky toothpaste tube, the disc's gel-like nucleus contains a chemical that irritates the nerves causing them to swell. After the chemical agent has done its job, the remnants of the chemical remain and continue to press on the irritated and swollen nerves. To complicate matters, sometimes fragments from the annulus (tire-like outer disc wall) break away from the parent disc and drift into the spinal canal. These fragments may travel in the spinal canal, and depending on the type of injury and the condition of the discs, more than one disc may herniate, rupture, or bulge. Sometimes injury causes a combination of disc disorders. There are five stages of Disc Herniation.

The Five Stages of Disc Herniation:

Stage I: Slight movement of the gel within the envelope with no peripheral neurological signs and symptoms—often pain free. These symptoms include: muscle atrophy, tingling, numbness, loss of control and sensitive to sensations of heat and cold.

Stage II: Larger movement of the nuclear gel but still contained within the annular ring; mild back pain

Stage III: Mild to moderate protrusion of the nuclear material: back and leg pain is present without true positive neurological signs

Stage IV: Disc bulges, impinging on the nerve root with positive neurological signs and back pain

Stage V: A disc extrusion or sequestration where the nuclear material has left the annular ring; back pain actually diminishes while neurological signs and symptoms extend more peripherally and intensify

The disc, especially in the lumbar spine, often protrudes posteriorly and laterally and can be a result of flattening the lumbar curve with an overstretched posterior longitudinal ligament.

A constant pain in the lower back and uncontrollable weakness in the legs or feet is a common symptom for people who suffer from a herniated disc. Although the symptoms can be different, the cause is often the same – a disc in the spine has herniated, and is exerting pressure on a nerve root.

Most lumbar herniations are the result of years of pressure exerted on the lower spine, the area of the back that gets the most usage. Gravity, weight, and bad posture over a period of time tend to take their toll and we as humans also tend to rely more on the lower back than the rest of the spine for strength activities such as lifting heavy objects and reaching for things. Over time, the back simply gets tired and ‘gives out’ in an attempt to inform the body that it is tired.

All joint/disc injuries are a vata imbalance. **The Yoga Sutras of Patanjali, Chapter II, V. 47 states:** “Yoga Pose is mastered by relaxation of effort, lessening the tendency for restless breathing, and promoting an identification of oneself as living within the infinite breath of life”. As a result of this vata imbalance, the breath or prana is also affected and should therefore be considered as a way to heal through Structural Yoga Therapy. Jan was, and continues to be very aware of her body. She made a conscious effort to work with the breath during our sessions and did her breathing practices homework diligently. I taught her the Wave Breath, and the Spinal Rock utilizing the Breath and used visualization with the breath as part of her home practice.

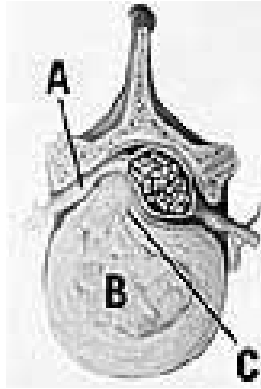


Fig 1: Lumbar Disc Herniation (Spine-health.com)

- A: Exiting nerve root.
- B: Disc.
- C: Torn outer annulus.

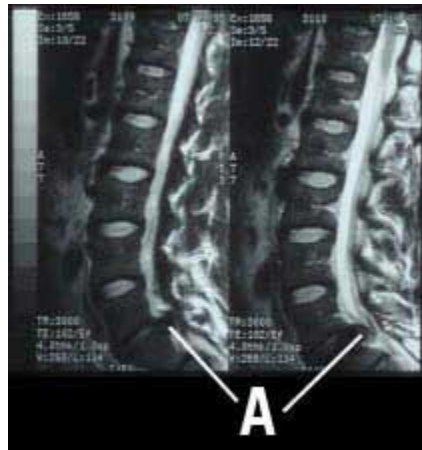


Fig 2: MRI of Lumbar Disc Herniation (sagittal view) (Spine-health.com)

- A: Herniated disc at L5-S1.

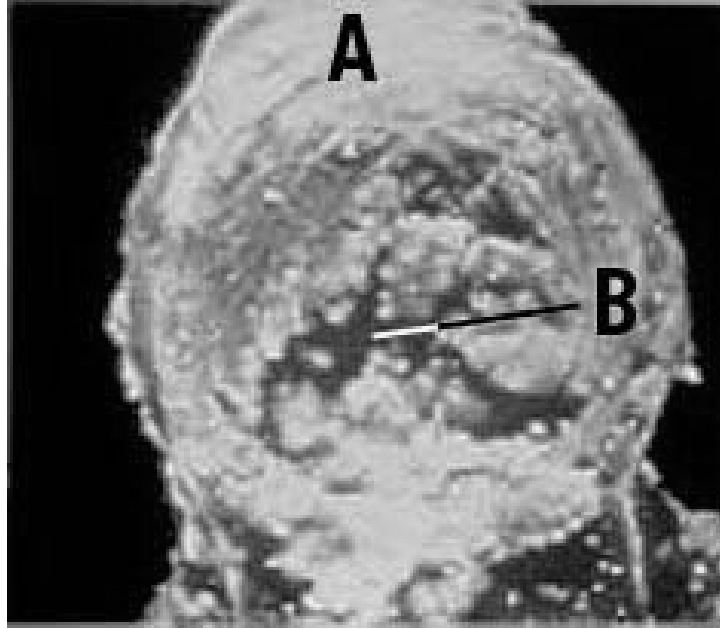


Fig 1: Degenerative Disc Disease (Spine-health.com)

A: Outer annulus.

B: Inner core where protein is degenerated, making the disc less able to function as a "shock absorber."



Figure 2: X-ray of Degenerative Disc Disease

A: Disc degeneration with collapsed disc space at L5-S1. (Spine-health.com)

2.c. Related Challenges

Degenerative Disc Disease is particularly debilitating, from a physical, emotional and mental standpoint. Approximately 90% of disc herniations will occur at L4/L5 or L5/S1, which causes pain in the L5 nerve or S1 nerve, respectively. In most cases, if a patient's low back and/or leg pain is going to resolve after a lumbar herniated disc, it will do so within about six weeks. During this period conservative treatment should be used to help reduce the back pain, leg pain and discomfort caused by the herniated disc. Presentation: Decreased lordosis. Flexion may, but not always, accentuate symptoms and extension may reduce and centralize the symptoms. In upright standing there is often a lateral shift of the ribcage away from the painful side and pelvis opposite from ribcage, which can lead to a functional scoliosis.

Approach: Always work on stability before mobility. Core Stability and Hip Differentiation are primary for this population. Exercises in Pilates and Asanas in Yoga Therapy should follow these two principles. Stretch and strengthen the piriformis. Stretch the psoas and quadratus lumborum in mid ranges. The Joint Freeing Series Nos. 6 & 7 would apply here as well as the Side of Hip Stretch, Warrior II and Triangle from the 24 Asanas from the Structural Yoga Therapy Kinesiology Chart. It is also important to work with the breath with this population to free energy and space within the body and increase awareness.

Precautions: Excessive Flexion should be avoided as well as any compressive movements for the lumbar spine.

Over time the collagen (protein) structure of the annulus fibrosis weakens and may become structurally unsound. Additionally, water and proteoglycan (PG) content decreases. PGs are molecules that attract water. These changes are linked and may lead to the disc's inability to handle mechanical stress. Understanding the lumbar spine carries a large portion of the body's weight; the stress from motion may result in a disc problem (e.g. herniation).

Other approaches to treatment for this population include:

(1) Surgery—usually recommended when no improvement is noted after a course of conservative treatment. However, most patients will get better without surgery.

Spine Universe.com Options for surgery are the following:

(a) Discectomy – this procedure is the surgical removal of part or the entire offending intervertebral disc.

(b) Microdiscectomy – this procedure incorporates the use of a microscope to magnify the surgical field during removal of the disc. Physical Therapy usually follows both procedures.

(2) Chiropractic – A chiropractor may be able to relieve pressure on the spinal nerve, restore joint mobility and help return the body to health using palpation and

manipulation techniques, carefully applied pressure, massage and manual manipulation of the vertebrae and joints (adjustments)

(3) Acupuncture – Some patients report that acupuncture has provided relief from back pain and helps to promote healing

(4) Herbal Medicine – Certain herbs have healing properties.

(5) Osteopathy - Osteopathy helps the muscles relax and creates increased flexibility. It is a system of diagnosis and treatment that involves mobilization, joint manipulation and massage.

3. Ayurvedic Assessment

Degenerative Disc Disease affects Vata, Pitta and Kapha. The degeneration of the discs is caused by Vata and the inflammation or pain that is sometimes caused by this condition (for example sciatic pain) is a Pitta imbalance. A vata-balancing diet, is one of the goals for this condition. A secondary goal would be to balance Pitta with abdominal exercises. Nutrition is also important here. Lots of water is crucial for this population, as well as a diet using both oils and herbs to increase both circulation and movement in the joints. **SYT Notes**. Muscles' function is to move bones. The stronger a muscle is, the more support it can offer the joint, so it is also important to strengthen the muscles surrounding the area of the degeneration as well as the supporting muscles of foundation: the legs. In addition, the muscles along the entire back body also need to be strengthened above and below the area of degeneration.

3.a. Ayurvedic-based Yoga Recommendations:

People with Degenerative Disc Disease benefit from doing yoga poses that balance vata, enhance Kapha as well as decrease Pitta. Weight –bearing poses such as standing poses would be very important here. Other poses would be poses that decompress the spine (work in neutral and elongated spine positions). The first focus would be “stability before mobility”—working on stabilizing the pelvis and spine and then adding dynamic movement later. Another emphasis would be to work on the abdominal muscles because they are usually lethargic and/or weak with this population. Additionally, with degenerative disc disease of the lumbar spine, the sacrum usually becomes rigid as it attempts to support the entire spine. Another approach towards this population would be to create as much intervertebral space as possible in the lumbar spine, to allow the sacrum to be free to drop downward and thereby also releasing itself from L5. Additionally a “whole picture” view and approach would be towards decompression of the entire spine, and not just the area that is affected. **Frawley, David, Yoga and Ayurveda: Self-Healing and Self-Realization, Twin Lakes, Lotus Press, 1999**

The order of exercises should be the following model:

(a) Stability before Mobility (referring to both the spine, pelvis and legs). The client should also be retrained to do activities in daily life with a strong awareness of the breath and neutral spine.

(b) If a client has had a discectomy, the tissue contracts during healing towards the site of the trauma and at the same time. This loss of movement creates tension and a loss of flexibility at the injured site, as well as the vertebra just above and below it. To address the above, giving poses and utilizing pranayama and visualization techniques with an eye towards creating space between the discs, as well as focusing on the muscles close to the vertebra right above and below the injured area; and secondly, bearing in mind that the spine is a single entity and that what happens at one end of it affects the other end and therefore the entire spine, a strong emphasis on length throughout the entire spine would be key to success with this population.

(c) Yoga poses incorporating both static and dynamic movements

(d) Balance poses are also very important for this population

(e) Increasing the challenge of both static, dynamic and balance poses to challenge the client as needed.

4. Common Body Readings/Findings

Relevant Body Readings (Structural Yoga Therapy Page 103). Muscle Imbalances revealed by posture include muscles support the legs, hips, and feet

<u>Postural Change</u>	<u>Tight Muscles</u>	<u>Weak Muscles</u>
1. Feet Turned Outward	Psoas, Ext. Hip Rotators, Sartorius, Gluteus Maximus	TFL, Gluteus Minimus
2. Feet Turned Inward	TFL, Gluteus Minimus	
3. Hip Elevated	Quadratus lumborum, psoas	Same as opposing side
4. Hip Twisted	Abdominus oblique, psoas, tensor fascia lata, sartorius	Same as opposing side
5. Hyperextended Knee	Hamstrings, gastrocnemius	Lower quadriceps, popliteus

5. Contraindicated – Modify or Eliminate

Exercises that compress the spine should be avoided. Therefore abdominal crunches and full situps are contraindicated. Poses involving excessive spinal flexion and in particular lumbar flexion should be avoided, as they can do further damage to already-damaged discs. Forward bends should generally be avoided, unless they can be taught

with a neutral spine. Additionally, when doing a forward bend such as Paschimottanasa, the first instruction should be to root the sitz bones to the floor and lengthen the spine on an inhale. This elongation and lengthening should be kept while moving into the pose and the client should go only as far as needed. If the thoracic spine begins to round, the client would need to move back to where the entire spine stays in a neutral position and would only go forward a few inches. Blanket(s) should also be placed under the clients buttocks to facilitate neutral spine and to release the hip flexors. Poses like Uttanasana, Ardha Parsvottonasa and Prasarita Padottanasana can be taught with hands placed on the wall, and the client would only come as far as the torso is parallel to the floor. Apanasana, a normally contraindicated pose, can be taught one leg at a time keeping the spine in neutral as a modification. In addition, a note here would be to make sure each knee stays in line with the hip while doing the asana. With prone back bending poses it is important to place a blanket under the hips/pelvis to ease any pressure on the lumbar spine. The general principle in all yoga poses is the elongation of the spine (back body). A cue to elongate the front and side bodies will help here as well. Twisting poses should be approached with extreme caution and the emphasis with twists should be on elongating the spine and lifting from the ribcage.

The yoga practice needs to be both slow and mindful, to increase awareness of both the inner and outer body, as well as the breath. A vigorous vinyasa practice would be contraindicated for this population.

This population would also need to be re-educated on proper alignment principles, functional movement as well as body mechanics which would then positively affect their lifestyle and activities in daily living. In the end, this will also contribute to setting them free from pain.

6. General Recommendations

6a. and b. Therapeutic/Free of Pain/Stabilize the Situation

Muscle Control for Pain Control): The majority of people who come to yoga therapists for degenerative disc disease and/or back pain are mainly interested in obtaining relief from pain. “Regaining muscle control and support of the injured lumbar segment will assist in relieving pain, and this is a potent ‘selling point’ for the program.” Notably, a considerable amount of the Yoga therapist’s clients have been suffering recurrent and/or chronic pain or have gained only temporary relief from previous treatments, and are actively seeking something that will help them in the long term. Compliance with the asanas increases when clients observe that once they can achieve activation of their deep muscles—particularly the co-contraction of the transversus abdominis and multifidi, (whose support can accommodate this deficit), their backs feel safer or they can control their pain. The very first treatment session should concentrate on the above. Additionally, with this population always begin with supine and side-lying positions and progress to standing, kneeling and seated positions to regain function and control.

Low Impact Aerobics - Low-impact Aerobics offers many benefits including improved muscular endurance, coordination, strength, weight loss and strong abdominal muscles (as the abdominal muscles get stronger the load to the lumbar spine is decreased). The loads on the discs during walking are only slightly greater than when lying down. Walking, bicycling, and swimming are excellent forms of aerobic exercise.

Studies have shown that aerobics help to combat anxiety and depression, two things that are common with people with Degenerative Disc Disease. Often there is a feeling of complacency and “giving up” because by the time they get to the Structural Yoga Therapist, they have tried many modes of medical intervention which may not have worked entirely to their satisfaction, physically or otherwise. Therefore, svadyaya or self-study as well as Ishvara Pranidhana (surrender) are necessary components of adherence to the Structural Yoga Therapy program and the client needs to be made aware of this. The Structural Yoga Therapist should also gently direct the client towards this and allow them to look and work from the inside out. “The cultivation of self-awareness through your practice is an essential aspect, not only for your recovery from depression but for the ultimate goal of your yoga practice – to become a *jivan mukti*, an awakened one.” **Amy Weintraub, Yoga for Depression**.

The beginning of the exercise program. The first exercise to introduce involves lying supine on the floor with the arms by the sides, knees bent and feet on the floor. Pillows should be placed under the head, the extended arms by the side and under the feet to facilitate relaxation in this position. The client may stay in the position for 10-16 minutes to begin. The wave breath and the spinal rock may be practiced while in this position to facilitate awareness.

Following this exercise, **Judith Lasater’s Down in the Back: Poses for the Lower Back Program** can be taught. The length of this program varies, depending on the time available, and can last anywhere from twenty-five to thirty-five minutes. The poses consist of the following: (1) supported down dog pose using a yoga strap tied to a doorknob and placed in front of hips, while the client goes into dog pose on the floor. The belt around the hips supports the body weight, and as the client hangs, the abdomen relaxes—the wave breath can be done here too; (2) Supported Half Dog Pose: this pose gently stretches the long muscles of the back by placing the lower back in traction; (3) Simple Supported Backbend: this can be used as a good introduction to backbends and is gentle, improves flexibility, and is possible for almost anyone; (4) Elevated Twist on a Bolster: this pose is a great way to stretch the external rotator muscles and also stretches the muscles at the sides of the rib cage, including the latissimus dorsi. When these muscles are stretched, the function of the lumbo-sacral spine is enhanced; (5) Supported Child’s Pose; and (6) a basic relaxation pose with Legs on a Chair.

Further along the program. As the client begins to improve with the asanas above, which are mostly about stretching and release, static and dynamic poses should be introduced with an eye towards strengthening. Stretching and release should not be forgotten, however—a good balance is needed. I have observed with this population that most clients respond favorably to an emphasis on both stretching and strengthening

exercises right from the beginning. However, depending on whether the client's predominant dosha is Vata, Pitta or Kapha this approach may need to be re-routed or modified. In Structural Yoga Therapy, the Therapist's approach is dependent on what the client presents in terms of physical, mental and emotional or mind, body and spirit as well as their dosha imbalance and what kosha they also present at the session.

Balancing exercises should also be introduced. To challenge the client other functional and proprioceptive exercises can be used utilizing discs, foam rollers, stability balls as well as standing poses and other yoga asanas. Clients may also add cross-training exercises, for example weight training and cardiovascular exercise as long as they are under the supervision of an expert in the field with knowledge of and experience in working with Degenerative Disc Disease. If they are doing cardio on their own, care should be taken to maintain a neutral spine and use their supportive musculature when necessary.

Throughout this entire program there should be an emphasis on the breath, or pranayama as well as encouraging breath with movement for awareness and clarity. The breath is the true link between the mind, body and spirit. The Wave Breath, Ujjai and Nadi Shodhana are useful here as well as meditation, both static and dynamic. There is often a feeling of frustration and helplessness in this population. Applying Structural Yoga Therapy which includes asana, pranayama and meditation helps them to get a feeling of well being and being in control of their lives—physical and emotional.

6.c. Maintenance

On a physical level, it is important that the client fully understands that the changes that Degenerative Disc Disease has caused in his/her life can be helped, and as a result, the approach to exercise, diet, pranayama and meditation has to be a commitment to a daily practice. This means that anything contrary to what is taught from a safety perspective will allow symptoms to worsen. Therefore, neutral spine needs to be addressed, understood fully and incorporated into daily activities and all movement patterns.

There is more to Degenerative Disc Disease than what meets the eye. It is important that the Structural Yoga Therapist get to the root of the actual problem by listening to what the client says as well as what the client doesn't say. Ultimately success will be imminent if there is mutual respect and understanding as well as empathy, flexibility and accommodation on the part of the Structural Yoga Therapist as well as having the ability to "hold the seat of the Teacher" and also to hold a sacred and safe space for the client at all times.

Mukunda Stiles, in his book Structural Yoga Therapy, p.323 states: "The state of balance, or harmony, is called sattva. This is the goal of yoga therapy—to achieve a sattvic state of peace and tranquility. . . .By purifying the body, senses, and mind, the yogi experiences his natural self. . . . The process of structural yoga is therefore presented as part of a larger scheme aimed at contentment through self-realization (p. 327).

7. **Questions and Answers from www.yogaforums.com**

Degenerative Disk Disease
Low Back Pain
Osteoarthritis

Herniated Disc/Degenerative Disk Disease

Q. Posted Tuesday, 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 no 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 this condition to best serve him? Thanks for your help. Sincerely, S.

A. For herniation avoid strong or prolonged forward bending as they nearly always herniated posteriorly and to the right side. Safest is gently 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.

Q. Posted Friday, April 26, 2002

I have been studying some of the books written by Viniyoga teachers and I notice in some books Utthita Trikonasana is performed with the feet pointing forward. I was taught that one foot turns out to 90 degrees and the other in 15 degrees. My questions if not whether one is right or wrong but the effects to the structure of each. My understanding is if the feet are pointing forward you slightly come forward before going to the side to place the hand on the floor. In trying this I find if I don't go slightly forward the hand won't reach the floor as the pelvis and ribcage come into contact with each other. I also would like to know which method you would consider safer in general and especially with those who have sacrum or low back problems. It would seem to me with one foot turned out the sacrum is more vulnerable.

I have a student who has a herniated disc. I am a new teacher and am not too informed on how to proceed. I have been told that those with disc herniation should not do strong forward bends or lateral bends. If this is the case, is there something they can do as an alternative while the class is doing these types of poses that can help his/their condition. Thanks for your help. Sharon.

A. Good question and well framed. Indeed the point is not how to do the pose but rather what is happening to the body in the manner in which the body does it. Changing the way in which they do yogasanas benefits many people with postural misalignments or injuries. I feel it is safest to look carefully at the student and assure that they are not harmed, stressed or aggravated but helped by this potentially beneficial practice. . . .

The major motion to give students with herniated disc is mild backbending such as a locust or sunbird (Chakravakasana – leg lifting from cat pose), one leg at a time. The most common herniation is L4-L5 disc moving to the right side (80%) therefore usually locus lifting the right leg as you extend the leg provides the most relief.

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

A. 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.

Low Back Pain/Sciatica

Q. Posted Monday, December 30, 2002

I am suffering from Back Pain since 3 years. I work for a software company in India. Recently Yoga session started in our company and I joined it. I don't remember all the names of asanas correctly. I get immediate relief from back pain within 5 minutes after starting yoga session. But the session is held weekly and hence after 3 or 4 days my back pain starts again. I request anybody to suggest me asanas which I can do daily and which would bring relief to my back pain. Thanks. Kiran.

A. Namaste, Kiran (posted by Chandra),

I have been on holiday – sorry for delayed reply . . . In my experience, the rolling bridge pose as I learned from Mukunda Stiles has been of tremendous help for me and my yoga students as a therapeutic treatment of back pain. I have found it to be helpful for pain relief throughout the spinal column when done slowly, progressively, and with attention to the physical response of the body. For people suffering from back pain, I recommend this one dynamic (flowing on the breath) asana above all others. If you would like instruction in this asana, it is best given in person or by reviewing the instructions in Structural Yoga Therapy. IF you would like, I can give you general technique through this forum.

You do not state the specifics of your back issue. If this is a chronic condition, you may want to post to Mukunda or make arrangements to see him for a private session so that

you can receive specific and personalized instruction. Generally, back pain indicates a weakness or imbalance of the muscles which stabilize the spinal column. You may need to strengthen muscles in your belly or your back, or to stretch muscles which are holding tension or are short in proportion to their antagonist (opposing muscle). Overall strengthening exercises as found in a good general yoga class will help you to develop your general fitness level, decreasing the apin level, and to become more aware of the area of tension or weakness which is causing the back pain, empowering you to appropriate action to avoid it in the future.

Q. Posted Friday, August 6, 2004

I have a client who is suffering low back pain and down the legs as well as reduced mobility due to spondylolysis and spondylolistheses. He has suffered from it for over a year and can not say precisely what brought it on although he feels strongly that negative energy is a key factor. He has trouble lifting his legs, walks with a shuffling gait, and has great trouble with stairs. He tries to limit the muscle relaxants and anti-inflammatory meds but they are the only treatment that gives relief. He has tried physio but did not find it helpful. He is in his forties and not physically active.

The MRI report is as follows:

. . . At L5-SI there are degenerative and plate changes and a grade I anterolisthesis of L5 on SI. There is loss of disc space height. There is a diffuse disc bulge associated with the anterolisthesis. This results in mild narrowing of the neural foramina bilaterally. The spinal canal remains widely patent. Although it is not well seen on these images, there appears to be a bilateral pars defect of L5.

IMPRESSION: - There is a spondylolysis with a grade I spondylolisthesis of L5 on S1. This results in narrowing of the neural foramina bilaterally. The spinal canal remains patent.

I think I understand that this is fundamentally a mechanical problem: The bilateral pars defect of L5. My inclination is to recommend hamstring stretches and gentle core strengthening to start. I am unsure how to proceed considering the disc bulge and pars defects. Any advice and insight into this condition, that you are able to offer, would be much appreciated. Namaste, M.

A. First let us define what are spondylolysis and spondylolisthesis. The former, according to Taber's Encyclopedic Medical Dictionary, is a general term meaning a "breaking down of the vertebrae structure" and the latter is "any forward slipping of one vertebrae on the structure" and the latter is "Any forward slipping of one vertebrae on the one below it. Predisposing factors include the previous, degeneration and birth defects such as spina bifida". Thanks for the details medical assessment accompanying your summary of this client. You say he is not physically active. That is a major hurdle to overcome. He needs to be given a program that he will do one that will motivate him to

attempt to overcome with self effort the pain and limited range of motion that he is blessed with learning form. In general I start this type of client with simple recommendations for exercising and lifestyle changes that will support lessening his stress. That would focus on joint freeing series to increase circulation, increase water intake and regulation of sleeping, resting, eating habits especially getting to bed on time. If he will not do this then I would refer him back to physical therapy or other modalities that will take care of him. Having the initiative to work on himself cannot be a burden for a yoga therapist otherwise you are a yoga teacher trying to do physical therapy. A major distinction for me is that a yoga therapist should focus on clients doing yoga sadhana to improve his entire lifestyle not merely exercise therapy. Let us leave that to the PT and OT world.

That said my experience of these conditions is that they respond well to a combination of deep tissue bodywork and personalized yoga routine based on an assessment of what is weak with yoga to strengthen the specific muscles and an assessment of limited range of motion so that program will also focus on increase joint range of motion (not stretching muscles; as that intention will heighten inflammation due to increasing pitta). Rarely are the hamstrings tight enough to cause limited range of motion except in this type of chronic condition. But still I find more relief not from stretching what yoga teachers find tight, better is to strengthen what is weak. In this combination of skills I have counseled a client to 11 years of relative comfort, that is, when he followed my advice. . . . It is a condition of management, not elimination of the difficulty. Blessings.

Osteoarthritis

Q. Posted Saturday, April 27, 2002

I wonder if you would take the time to address osteoarthritis in general. I'm looking for what people can do to avoid it and to stop it from attacking joints. (Pretty big subject, but I know you have ideas on it.) Also, I have a new student with a rotator cuff problem. How should I handle that as far as telling her which poses to do and not to do? Thank you. I always enjoy your messages. K from Iowa

A. Posted Saturday April 27, 2002

For any form of arthritis, I recommend my joint freeing pose series from my book. This is best to do by itself without any other form of exercise for 2 weeks minimum. This can relieve much of the pain. AI also mentioned the arthritis diet from Indra Devi, which is a cure. The anti-pitta diet from Ayurvedic diets is recommended as a long-term solution. IF you didn't get that I can send it to you.

For rotator cuff problems again I recommend Joint Freeing series do the entire series and the motions for the shoulder do twice as many as others. In general it is a vata imbalance and needs gently but persistent activity. Stretches can irritate it. I do not recommend trying to stretch out the shortened muscles or trying to increase range of motion. Do all

poses but do not try to stretch the shoulder. When you feel the shoulder stretching, back off . . .”

Q. Posted Sat. Jan 11, 2003 – Degenerative Arthritis

Dear Mukunda, I have a sister-in-law who has had 2 back surgeries and one hip surgery due to degenerative arthritis. The last back surgery was 3 months ago and it does not seem to have helped her much. She is 68 years old and has never done yoga. She is of German descent and a farmer of stocky build. Would there be something you could suggest that I could help her with? She has also had rotary cuff surgery because of a severe injury, and it left her with a weak arm. Her only exercise is walking. Also for a bursitis at the upper femur: how can that be stretched? Thank you for all the e-mails. I do enjoy them. J.

A. For someone at this stage of life, who only does walking for exercise, the joint freeing series is the best to give her. By emphasizing learning to coordinate the motions with her breath, she can begin to develop more bodily intuitive sensitivity to what she should and shouldn't be doing. I would not give more specifics unless I see such a person face to face. Bursitis is not a condition that responds to stretching. Stretching increases pitta and bursitis as well as arthritis is an inflamed pitta condition. Therefore doing stretching is quite likely to inflame her condition. JFS is much better to be done gently and slowly to her capacity. If she is willing to make some bigger changes I would recommend she undertake Indra Devi's arthritis diet, which is basically for all increased pitta conditions. This will make the biggest difference. Details can be found on the archive site for Q & A. Blessings, Mukunda

Q. Posted January 23, 2005 – Bulging Disc

Namaste. I hope all has been well with you. I have recently had the dx. (Via MRI) of slight bulging disk at L 2--L 3 (bulges to the left), and also narrow neural canal at L4-L5, causing constant pain. Would you be willing to educate me as to which postures should be avoided or modified? And also, do you know of any yoga therapy which might be able to "put the disk back in"? I do have a body bridge, and could lie over it sideways (on the left side), which seems to me might help. I am very discouraged, sad and worried, and would appreciate your input greatly. I am going to go to a good acupuncturist, and maybe a chiropractor to try to help this. Thank you very much. S

A. There are many factors for disc not all bulging disc cause pain. In my experience the major factors for lower back pain are overworked, emotional struggles with intimate friends and dehydration. Increasing water to half your body weight in ounces per day and keeping to it for at least 3 months makes a major difference. Disc can be replaced but major need is for strength in all the supportive tissues. I cannot give you specific guidance in this format a face to face session would be required for that. MD analysis is helpful for me but is not enough and in the right direction I need to assess muscles and joint mobility. However contraindications are all extreme motions of backbends, forward

bends, and twists. These are all safe when done with full breathing, learning to send prana to detect energy in the region, and awareness of what specific muscle you are stretching or strengthening in each pose. This information is found in my book under kinesiology of Asanachart.

Thus it is not that a specific pose is recommended but rather what muscle to work and how in each Asana. Often small misalignments in Asana are needed to generate energy flow to disc spaces. This is why classes rarely help with back pain. I find that gluteals and in general hip rotator muscles are often quite weak when they are assessed in an individual session. By custom designing the program I can often help people return to pain free movements. I am doing what I can to train people to do this; so far the group in Boston will have some graduates this fall. The training requires a lot of diligence and a 2 year commitment. I would suggest you read more on my archive website -- www.yogaforums.com for more comprehensive suggestions, it is searchable by topic

Q. Posted May 20, 2003 – Herniated Disc

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

A. For herniation we avoid strong or prolonged forward bending as they nearly always herniate posteriorly 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.

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9. Appendix

Judith Lasater's "Down in the Back Program" reprinted from "Relax and Renew"

Hanging Dog Pose

Props: yoga mat, belt, door with doorknobs

In Downward-Facing Dog Pose, one of the most versatile yoga poses, you make an inverted V shape with your body, mimicking the stretch a dog takes when first rising from sleep. In the supported version, Hanging Dog Pose, you loop a belt around your hips and over a doorknob, and allow these props to support your body weight. As you hang, the abdomen relaxes. It is this feeling of letting go that brings relief to those with lower back pain.

Setting Up. Spread out your yoga mat, with then arrow end centered on the edge of the open door. Firmly fasten your belt into a wide loop and place it around both doorknobs. Step inside the loop and stand with your back to the door. Hold the belt and walk forward until it presses against your body, where the thighs meet the torso.

Bend your knees, lean forward, and put your hands on the floor. Walk your feet back toward the door and walk your hands forward until your body is in the shape of an inverted B. Let the belt hold the weight of your body. Make sure that the belt pulls evenly against both sides of the door . . .

Let your head hang as you allow the belt to hold your weight. Breathe slowly and evenly as your back muscles lengthen. As you exhale, move your belly into the pelvis so it forms a concave shape. Relax, confident that you are on your way back to health. Practice hanging for two minutes and gradually increase to three minutes.

Supported Half Dog Pose

Props: Table, single-fold blankets, clock or timer

This pose gently stretches the long muscles of the back by placing the lower back in traction. As your torso rests on the table, gravity's pull on the back muscles is relieved.

Stand in front of the table, feet hip-width apart. Bend forward from where your torso meets your thighs, and rest your torso on the table. Your torso and legs should be at ninety degrees to each other, with your legs straight and feet resting lightly on the floor. . . Rest your forehead either on the table or on your folded arms.

Breathe slowly and easily. Let your torso and arms rest completely on the table. Slightly bend your knees and let the weight of your legs drop toward the floor. Allow your back and neck to lengthen on each exhalation.

Simple Supported Backbend

Props: bolster, long-roll blanket

Sit on the floor in front of the long side of your bolster, knees bent and feet resting on the floor, with a long-roll blanket by your side. Move slowly and with caution. If lying back causes discomfort in your lower back, begin by lying on your side over the bolster and then turning onto your back. If you can lie back, place your elbows on the bolster. Then use one hand to support your neck as you take your head back. Now lie over the bolster so that your middle back is supported and your shoulders rest comfortably on the floor.

The length of your torso will affect your comfort in this pose. Breathe slowly and evenly. Feel held by the props. Your arms are wide open and free. With each inhalation, your front body opens; with each exhalation, your belly and organs soften and your mind quiets. As you gradually relax, allow your back to sink into the props. Imagine you are lying in a beautiful and safe space.

Practice Simple Supported Backbend for one minute, gradually increasing your time in the pose. To come out, remove the eye bag. Push with your feet and slide toward your head. Rest for a few breaths with your lower back flat on the floor and your legs supported by the bolster.

Elevated Twist on a Bolster

Sit up in the middle of the long side of the Bolster. Bend your knees and place your feet on the floor. Slide forward a little and place your hands on the floor behind you. Gently lie back so that your hips rest in the middle of the bolster and your shoulders lightly touch the floor.

Press your feet into the floor as you slide your hips to the far left side of the bolster. Then move the feet over to align with the hips. Make sure the lowest rib on either side of your back is supported by the bolster. Place your arms on the floor, palms up, so they and your torso form a T shape.

10. Biography

Adriene has been teaching Yoga and Pilates for over ten years and has a private practice in New York City where she teaches Structural Yoga Therapy, Yoga, Thai Yoga Bodywork and Pilates. An avid Cyclist and New York City Marathoner, Adriene is also a certified Personal Trainer and a Classical Pianist. Her multi-faceted background in Yoga, Pilates and Health & Wellness allows for a full-circle approach when working with clients.