STRUCTURAL YOGA THERAPY
RESEARCH PAPER

Sacroiliac Joint Dysfunction

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I examined three female clients with longstanding middle and low back pain. Each client has an imbalance in the mobility of the sacroiliac joint but their body types and readings are very different. One is hyper mobile in nature, and the other has a lot of tightness in the area of the external rotators of the legs and the back body in general. The third had a traumatic injury to the pelvis. Sacroiliac joint dysfunction seems to fall into one or the other of these three camps.

1.a. Case Study One

Initial Interview - (Rebecca) February 3, 2006

Rebecca is a former dancer and is now a Pilates instructor. She has had to deal with many issues in her body and has done a lot of investigation to figure out what has gone on. While she was dancing ballet regularly her first clues into her Sacroiliac joint problems presented as chronic and sometimes acute Achilles tendonitis. Pilates seemed to help at that point with her SI joint as well as her shoulders which she also has problems with. Rebecca is hyper mobile in general and as she says "Her body has become her work". She regularly teaches workshops related to her findings, and is very dedicated to helping people learn about how to work especially with bodies with the special issues (ones she has and continues to work through). Rebecca had prolotherapy injections into the SI Joints which are supposed to strengthen the ligaments. She also has Osteopenia and doesn't do a traditional Pilates workout any more because a lot of the exercises include forward flexion that is no longer appropriate for her to do. She has recently tried acupuncture and in the spring of 2005 began weight training with a trainer once a week and on her own two more times. .That in combination with calcium and vitamin D supplements enabled her to improve her diagnosis from Osteoporosis to Osteopenia in just under a year.

When asked about her prayer and/or meditation practices Rebecca replied "not enough" She used to have a regular practice of meditation what she calls "her own form" but she has become very busy and that has fallen by the wayside a bit. Rebecca is very intuitive about her body and feels that the nervous system is definitely a big part of the puzzle. As for her own physical assessment, Rebecca has found that her right hip tends to be hypo mobile and the left hip compensates by being hyper mobile. Her Psoas is chronically tight on the right side. Both shoulders and ankles are unstable. Rebecca's knees are a little hyper extended and bowlegged. She feels that her Vastus Medialis on both sides are weak, and her subtaler joint on the right is hyper mobile while the talus on the same side is hypo mobile and does not glide properly. Her Iliotibial bands on both sides are tight especially the right. She occasionally has knee pain possibly due to a fall on her right knee about a year ago. If she feels strong it seems to be okay. If not, she feels pain. External rotation of the right tibia from tight ITB is possibly causing torque on the joint. If the Left knee is in extreme flexion with load, it causes clicking in the knee. Usually there is an anterior rotation of the right pelvic half. (right psoas and obliques are tight) While on the left, the pelvic half is rotated posteriorly and has a medial shear (slide in the transverse plane)

Physical Assessment

Rebecca is a petite lady, but looks very strong with good muscular build. She has a Pita quality to her: dark hair, fair skinned and energetic. She holds her head a little forward and her left shoulder a little elevated. The eyes (creases) of her elbows face out while the palms rotate internally so the hands face the leg. The upper arms hang in line with the torso while the lower arms hang forward. Both legs rotate externally while lying supine but while standing, the right rotates a bit more externally than the left. Both feet pronate. There was not a noticeable leg length discrepancy at this evaluation but I would be curious to test for it at other times of the day since there is an anterior rotation of the right pelvic half

and a medial shearing of the left pelvic half. The shearing was noticeable in the Sacroiliac joint test as well as instability with the right side moving down. The Sacroiliac joint in general feels “wiggly”. Rebecca has worked very hard to find her strength and stability and can “hold it together” pretty well. In other words, she can maintain a good amount of stability when focusing on it. When she relaxes out of that support, the difference is very clear. The difference is also obvious if she has done some focused body balancing that day, or not.

	2/2/06	4/26/06		2/2/06	4/26/06
Ankle	ROM L/R	ROM L/R		MT L/R	MT L/R
Dorsiflexion	0/0	0/0		5/5	5/5
Plantar flexion	90+/90+	90+/90+		5/4.5	5/4.5
Eversion	20/20	20/20		5/5	5/5
Inversion	90/90	90/90		5/5	5/5
Supine Hip					
Psoas MT				2.5/2.5	3/4
Sartorius MT				2/2	3/3
External rotation	55/65	55/55			
Internal rotation	20/25	25/10			
Knee flexion	150/130	125/120			
Hip side and prone					
Abduction	45/45	45/45		2/3	4/5
Adduction	20/20	20/20		1.5/2	5/4.5
External rotation	70/70	70/65		4/3	4.5/4
Internal rotation	40/35	35/30		3.5/4.5	4/3.5
Hip extension	15/15	15/15		3.5/4	5/4.5
Gluteus Max. MT				4/4	4.5/4

Summary of Findings – (Rebecca)

Strengthen: Sartorius, Psoas, Gluteus medius, Gracillis, Left internal rotators, Right external rotators, Left Gluteus Maximus, Left Hamstrings

Stretch: nothing, (already hyper mobile)

Release: Right quadriceps

Recommendations

February 2nd 2006

Sacroiliac Joint Freeing exercises (shown in Appendix a)

Part A, rocking: Modifications: limit flexion (contraindicated for osteoporosis)

Part B, rotation: Feel for toning in the gluteus medius

From the Joint Freeing Series:

To strengthen hip external and internal rotation muscles (Gluteus medius): JFS exercise #5 (Windshield wipers); especially focus on internal rotation

Asanas:

To strengthen adductors and balance pelvic halves: Virabhadrasana I-(Warrior I) Modification: to feel for tone in the adductor muscles and. for Rebecca to balance tendency for rotation of the right pelvic half anteriorly, we did this pose more with the right foot forward, bringing the right leg into flexion while trying to keep the pelvis lifted off of the thigh.(repeat 3x with the left foot forward and 6x with the right foot forward)

For gluteus medius middle fibers and sartorius: Vrksasana-(Balancing Tree)

For strength in Left internal rotators and Right external rotators: Virabhadrasana II-(Warrior II) Modifications: again to balance the two sides of Rebecca's body, we did this asana asymmetrically. More repetitions with the Left foot leading. (repeat 3x right foot leading and 6x Left foot leading)

To strengthen hip extensors: Salabhasana-(Locust) Modifications: Left leg more repetitions to balance for strength.(repeat 3x right 6x left)

Summary of results (Rebecca) March-April 2006

March 2006

Rebecca was tentative about doing the standing as prescribed. She had several other modalities she was working with at the same time and wanted to give the other ones a chance.

She did feel that the joint freeing series was helpful was able to practice these exercises as well as continuing with the gym for strength

April 2006

This month, Rebecca started working with a new osteopath who prescribed a bridge pose done two ways: feet together/knees apart; knees together/feet apart (*to strengthen rotation as well as gluteals and hamstrings*).

The other exercise was designed *to strengthen gluteus medius*: Side lying with bottom leg bent and top leg hip in flexion and knee moving into flexion and extension with multiple repetitions.

Rebecca experienced an increase in strength across the board.

I feel that our working together was helpful as another means for self exploration and a reminder to slow down and keep up with needed spiritual practices. Rebecca's exercise regime ebbed and flowed from focusing on the asanas we worked with together, but ultimately, she listened to her inner teacher as to what was appropriate for her body, and integrated some of the joint freeing series into her regular regime. Rebecca's Sacroiliac joint is still prone to the same instabilities as before, but she has a wonderful command of her body and can, when focusing on it, stabilize the area remarkably. When she "lets it go", you can really feel the difference and Rebecca says, "You can imagine what a mess my alignment was before I started all this work." She has definitely come a long way.

1.b. Case Study Two

Initial Interview - (Cynthia) December 14, 2005

I have known Cynthia now for over two years. She is a former nurse and a birthing Doula. She is a grounded person but also very spiritual. In a long term marriage and a mother of two teenage boys herself, she assists in approximately two births a month. There is a general time frame for her clients due dates but as nature has the final say so in the birthing process, Cynthia is on call at any given point of time.

Cynthia is open to trying out new and different things and in this process had tried a combination of different exercise modalities including yoga and Pilates and has explored various spiritual practices as well. Cynthia is Sufi and suspected that one of the spiritual practices that she used to do regularly could have been contributing to her back discomfort. The practice involved the group standing in a circle and continually stepping to the left. She now partakes in a different part of the practice that is more balanced for her body.

Over recent months she hasn't been able to do as much self practice as she has wanted to, and is feeling the difference. She feels that her sacroiliac area is especially vulnerable when she is too tired or under a lot of stress. Physical intimacy makes it better.

The symptoms present as a feeling of pain and weakness on the right side and sometimes thinking about it makes it hurt.

Physical Assessment

Cynthia's body reading is interesting. She has a Kapha type body: tall and well grounded with dark features and an even steady energy. Most of her postural analysis seems pretty "regular". Her head is a little forward with her shoulders rounded and arms slightly internally rotated and forward. Her right foot is slightly externally rotated compared to the left. The thing that peaks my interest is that while her scoliosis reading is pretty neutral (only one degree to the left) she has a high left shoulder and right hip and there is markedly more space between her left arm and torso than her right. Normally I would think of these signs as pointing to a curvature in the back. It seems though, that her body reading follows my sense of her as a person, a steady central force with lots of spiraling energy around it. Her sacroiliac test showed both sides moving down, but more on the right. A combination of the back body being tight in general and a need for increased body awareness seem to be an important part of the process of balancing out Cynthia's body in order to decrease her pain.

	12/14/05	3/27/06		12/14/05	3/27/06
Ankle	ROM L/R	ROM L/R		MT L/R	MT L/R
Dorsiflexion	0/0	0/0		4.5/4	5/5
Plantar flexion	50/45	50/50		5/5	5/5
Eversion	25/20	25/20		5/5	5/5
Inversion	80/90	80/90		5/5	5/5
Supine Hip					
Psoas MT				1.5/1.5	3.5/4
Sartorius MT				2/2	3/3
External rotation	65/50	65/50			
Internal rotation	40/30	50/45			
Adduction				3.5/5	3.5/5
Abduction				3.5/5	3.5/5
Hip Prone					
External rotation	75/72	65/65			
Internal rotation	45/50	40/45			
Hip extension	15/15	15/15		1/1	4.5/5
Gluteus Max. MT				1/1	2.5/3

Summary of Findings – (Cynthia)

Strengthen: gluteus minimus, gluteus medius, Iliopsoas, Left adductors, Left abductors, Right external rotators, Erector spinae, Gluteus maximus

Stretch: Tibialis anterior

Release: Sacro-Iliac joint

Recommendations

February 2006

Sacroiliac Joint Freeing exercises (Shown in Appendix a)

Part A, rocking

Part B, rotation

From the Joint Freeing Series:

T*o strengthen hip external and internal rotation muscles (Gluteus medius):* JFS exercise #5 (Windshield wipers)

To strengthen gluteus maximus and release through the erector spinae muscles: JFS exercise #6 (Sunbird)

Asanas:

For weak hip flexors and back extensors:

Parsvottanasana-(Side of Hip Stretch)-Modifications: start from standing making sure to have the hips square and hinge forward from the hip creases (making sure not to round from the back). Feel for tone in the hip flexors and erector spinae muscles. Move in and out of this pose with the breath informing the movement. (6 times)

Dandasana-(Stick) Elevate pelvis on a cushion and lean gently back on arms for added support. Imagine a wheel on either side of your pelvis and work to rotate pelvic wheels into forward motion bringing your belly button forward and increasing the hip creases. From this action resting right on top of the sitting bones, energize and lengthen your spine up. (Hold 6 breaths and repeat 3 times)

For Left leg adductors and abductors and Right leg external rotators

Vrksasana-(Balancing tree): do standing on left leg only. To strengthen Left leg adductors Press right sole of foot into left thigh. Maintain stable hip alignment while externally rotating Right leg to draw knee further to the side. (hold 6 long breaths)

For hip extensors

Salabhasana (Locust) Variation: arms in baby cobra position lift upper body and then the legs. Keep legs lifted and open and close three times. Lower down all together.(repeat six times)(Variation inspired by Gary Kraftsow's Yoga for Wellness)

Ustrasana (Camel) Hands on the floor behind you, lift the hips up. Do ten repetitions dynamically lowering and lifting the pelvis an inch or so. Feel for toning in the gluteal muscles. (repeat six times)

Summary of results (Cynthia) January-March 2006

January/February 2006

Cynthia and I met again to check in to and fine tune the asana recommendations. We touched base from time to time on the phone to see how things were going. At this point she switched roles in her group spiritual practices from side stepping in the group circle, to a more stationary role. She also went on a family vacation. In general Cynthia gradually investigated ways to bring more balance into her life

March 2006

This month, Cynthia added swimming to the practices she was already doing regularly two to three times a week. The main areas of improvement shown from the muscle testing were in the strength of the

hip extensors as well as the Psoas and sartorius. Range of motion was more evenly balanced in the internal and external rotators as well. The main thing that seems to have made a difference in the way Cynthia feels is the strength component. While Cynthia feels it was difficult for her to maintain her regular practices she managed to do a really great job of doing them without break. She says that without having a regular check in, it might not have happened. I have confidence that she really could have done it on her own, but was glad to be a support in her process. Her sacroiliac reading is still a little bit unstable and moving down on the right, but she seems to be feeling much better and definitely stronger.

1.c. Case Study Three

Initial Interview - (Carolyn) February 20th , 2006

Carolyn comes from a creative background and lives outside of the boundaries of the mundane world. She was a dancer and went to a performing arts high school, and then created her own major in college in computer graphic arts, with a minor in psychology. She describes her experience as being "flighty, not structured and living in the moment". Her boyfriend at the time was a state trooper and besides liking the schedule, she felt a need for structure (with the subtext of "I can do this!"),so, she began a program training to be a state trooper herself. It was extremely physically demanding. In '97, she graduated and on her first run was involved in a terrible incident. What started out as pulling someone over because of a broken tail light ended up in a brawl involving a baseball bat to her left pelvic half. Carolyn describes the incident as being "Quick", feeling "Horrible pain" and then feeling like the next five years of her life went "down the tubes". Coming from an upright British family, she didn't feel much support in her recovery process. They didn't like the idea of her being a State Trooper in the first place. She describes her personality as nervous and stressed out, and gets stomach aches and IBS. Carolyn says she wants to get the most out of life and tends to take on too much in a day. She finds it hard to say "No" to friends and tries to please people. Carolyn is currently in a committed relationship and in the process of furnishing a house with her sweetie but as she says, there is "no rock yet". Her boyfriend is a bonds trader.

Physical Assessment

Carolyn has a vata build with a little bit of kapha mixed in. She is slight on the upper body and a little more weighted on the lower body likening a pear shape. She has light features. Carolyn carries herself with her head shoulders and arms a little forward, while her left foot slightly turns out and inches forward. Her sacroiliac test shows moving down a little on the right and more on the left. She reports pain at her left SI joint and still has scar tissue there. When I first tested her SI joint in class before our initial assessment, the right side felt protected or insulated. Although her pain is on the left, my impression is that perhaps the right is protecting itself. She is aware of her pain more at night and often needs to take over the counter anti- inflammatory medication to allow her to go to sleep. Exercise at all and especially yoga is new to her immediate experience. Having come from a dance background, however, has laid a nice foundation for awareness and re-discovering her body.

	2/20/05 ROM L/R	4/19/06 ROM L/R		2/20/05 MT L/R	4/19/06 MT L/R
Supine Hip					
External rotation	45/55	50/60			
Internal rotation	60/45	50/35			
Flexion(rec fem/psoas)	135/135	135/135		2/2.5	4/3
Psoas MT				2/1	2/2.5
Sartorius MT				2/2	3/4.5
Hip side and prone					
Abduction	45/45	45/45		4/3	4/3
Adduction	30/30	30/30		2.5/2	2.5/2.5
External rotation	40/50	40/50			
Internal rotation	55/55	60/60			
Hip extension	15/15	15/15		1/1	2/1
Gluteus Max. MT				.5/1	2/1

Summary of Findings –(Carolyn)

Strengthen external rotators internal rotators Rectus femoris Psoas Sartorius Gracillis Gluteus Maximus Hamstrings

Recommendations

February 20th 2006

Sacroiliac Joint Freeing exercises (Shown in Appendix a)

Part A, rocking

Part B, rotation

From the Joint Freeing Series:

To strengthen hip external and internal rotation muscles (Gluteus medius): JFS exercise #5 (Windshield wipers)

Asanas:

To strengthen adductors

Virabhadrasana I-(Warrior I) Modification: to feel for tone in the adductor muscles and. for Rebecca to balance tendency for rotation of the right pelvic half anteriorly, we did this pose more with the right foot forward, bringing the right leg into flexion while trying to keep the pelvis lifted off of the thigh.(repeat 3x with the left foot forward and 6x with the right foot forward)

For gluteus medius middle fibers and sartorius

Vrksasana-(Balancing Tree) To strengthen Left leg adductors Press right sole of foot into left thigh. Maintain stable hip alignment while externally rotating Right leg to draw knee further to the side. Repeat on other side (hold 6 long breaths)

For strength in hip external rotators and abductors

Virabhadrasana II-(Warrior II) Modifications: again to balance the two sides of Rebecca's body, we did this asana asymmetrically. More repetitions with the Left foot leading. (repeat 3x right foot leading and 6x Left foot leading)

Dandasana-(Stick) Elevate pelvis on a cushion and lean gently back on arms for added support. Imagine a wheel on either side of your pelvis and work to rotate pelvic wheels into forward motion bringing your belly button forward and increasing the hip creases. From this action resting right on top of the sitting bones, energize and lengthen your spine up. (Hold 6 breaths and repeat 3 times)

For hip extensors

Salabhasana (Locust) Variation: arms in baby cobra position lift upper body and then the legs. Keep legs lifted and open and close three times. Lower down all together. (repeat six times)

Ustrasana (Camel) Hands on the floor behind you, lift the hips up. Do ten repetitions dynamically lowering and lifting the pelvis an inch or so. Feel for toning in the gluteal muscles.(repeat six times)

Summary of results (Carolyn) February-April 2006

February/March 2006

When Carolyn first came to my yoga class it was the first exercise she'd had in quite a while. While it seemed okay during the process of range of motion and muscle testing, she felt sore for several days following. We decided to have her wait on doing the asanas and focus on the joint freeing exercises for a while and then gradually add in the asanas bit by bit. She progressed from doing very little physical activity to adding in a gentle practice from time to time.

April 2006

The muscle testing showed that supine hip internal rotation tightened up a bit in the direction we'd wanted it to go while prone hip internal rotation went to even more of an extreme. The strength of the Psoas/rectus femoris and sartorius went up the most markedly, and the hip extensors gained just a little bit of strength. With a closer look into how Carolyn was doing Ustrasana, we found that we had needed to do more quadriceps lengthening in order for her to begin to feel the strength building in the hip extensors. This time period in Carolyn's life has been very stressful and as a result, she has had a difficult time in maintaining her asana practice. There are also stomach problems involved that have made it difficult. In Carolyn's sacroiliac reading, the left side moved down this time instead of the right.

In general both sides feel much more stable and even. Carolyn's pain has decreased and instead of having to take anti-inflammatory before going to bed, she now does breathing practices.

Stress was a common factor in general for the three ladies tested, and in each case seemed to make things worse. The focus we did have allowed for a bit of slowing down and investigating for all of them. More specific focus on the other koshas in general, would have been very effective.

2.a. Name and Description of Condition

"In the first part of the 20th century, sacroiliac joint (SI joint) syndrome (dysfunction) was the most common diagnosis for low back pain, or lumbago. Before 1932, SI joint syndrome was a particularly popular diagnosis. It was actually called the 'Era of SI Joint' because so many physicians felt that the SI joint was the cause of most back problems. Any pain in the low back, buttock or adjacent leg was usually referred to as SI joint syndrome. In 1932, the discovery of herniated (or ruptured) disc led many physicians to assume that most pain in the back was the result of this new problem. Thus was born the 'Dynasty of the Disc', and the SI joint was somewhat forgotten. In the late 1980's many physicians rediscovered the SI joint as a possible source of back pain. Yet even today SI joint pain is often overlooked as a cause of low back pain. Many physicians have not been trained to consider it when diagnosing back pain and many are still reluctant to believe a joint that has so little movement can cause back pain. The symptoms of back pain from problems in the SI joint are difficult to distinguish from other types of low back pain."(www.spineuniversity.com/public/print.asp?id=89)

It is useful to familiarize ourselves with the tests that may be done by a client's Orthopedist or physical therapist. Here is a list of the tests that may be done on your clients, with a short description of they are meant to assess.

An in depth description of these related pelvic tests is located in appendix d.

Related Pelvic Tests

- *Supine to Sit Test*: to assess for a functional leg length discrepancy:
- *Sacroiliac Joint Motion or Gillet's Test**: to assess mobility of the sacroiliac joint:
- *Sacroiliac Joint Gapping or Transverse Anterior Stress Test*: a stress test to assess the anterior ligaments that cross the sacroiliac joints:
- *Sacroiliac Joint "Squish" or Transverse Posterior Stress Test*: a stress test to assess the posterior ligaments that cross the sacroiliac joints:
- *Faber Test* (also called Patrick's Test or Figure 4 Test): Faber stands for flexion, abduction, and external rotation. To assess the hip and psoas muscle:
- *Gaenslen's Test*: to assess for hip or sacroiliac joint dysfunction:

*Note: this test differs from the Structural Yoga Therapy protocol. There are differing schools of thought when it comes to this test. The results for this almost identical SI joint test are read in the reverse.

2.b. Gross and Subtle Body Symptoms

With regard to the Gross and subtle body Symptoms, we must look at the basic anatomical structure and function and what we do with it. In other words, aside from the bones and joints themselves, each individual comes up with a very unique strategy to use the equipment they came with.

The sacroiliac joint (SI joint) is a multi-dimensional joint, made up of the connection between the two pelvic halves-Iliums and the sacrum. There are ligaments on the front back and bottom of the joint securing it in place and the articular surfaces of the joint are the only ones in the body to be made up of two different kinds of cartilage one rough and one slippery.

If we look a little deeper into the specific movements involved we can differentiate between the movements of the bones that make up the pelvis and the sacrum The sacrum and the pelvic bones link together in a curved groove and rail connection As we move into an anterior pelvic tilt with the pelvis, and the top of the sacrum moves forward as the tail bone moves back, at the same time the sitting bones move away from each other and the left and right iliac crests move together. This is called nutation, and likens the shape of the bottom of an hour glass (Top closes as bottom opens). Nutation allows for the bottom of the pelvis to open up for the end stages of childbirth.

As we move the pelvis into a posterior pelvic tilt, the sacroiliac joint moves into counternutation (the top of the hour glass). The top of the pelvis opens wider as tailbone tucks under I like to use the image of a flower opening up at this point you can see the difference between the false and true pelvis (like the shape of a margarita glass)the false pelvis is the top layer of the margarita glass. In the birthing process, this allows the baby to descend into the pelvic cavity in preparation for the end stages of childbirth.

“The pelvis has three important functions. First, it transmits weight from the axial skeleton to the lower limbs in the standing position or to the ischial tuberosities when sitting. Second, it provides attachments for numerous muscles which insert onto and control the lower limbs. Third, it houses the terminal parts of the digestive and urinary tracts and the reproductive systems of males and females”. (http://www.vh.org/adult/provider/radiology/pelvis/functions.html)

Subtle body symptoms translate as an inward reflection of what is happening on the outside just as the gross body is the outward sign post to what is happening on a deeper level. Outer signs might be seen as a “stuck-ness”, lack of stability, or protective reflex in the body. An example: for a lack of mobility in the sacroiliac joint could be, where are you “stuck in your life?”, or as in a blunt trauma to the Sacroiliac joint, “Where am I holding my armor up to protect me in my emotional body or Relationships?” In general we can look at where and how Prana is being affected. Is it stuck, flowing all over or still shielding us when the trauma has already passed?

2.c. Related Challenges

Some challenges related to Sacroiliac dysfunction are the difficulty to get an accurate diagnosis, and dealing with the vata nature of instability. In the western medical world, viewpoints differ about the sacroiliac joint. Some physicians feel that a joint with such small range of motion can’t be the cause of substantial back pain and from that standpoint can offer you no more insight as to how to deal with the pain you are experiencing. It is important to work with someone who is willing and equipped to do the proper joint and muscle tests needed.

The nature of Sacroiliac dysfunction is either one of stuck ness or looseness in the joint. Release can be helpful for the first; the second is a bit trickier. When dealing with instability, it is important to know what practices will bring a steady regularity to give you a foundation to work from. Like water or sand that runs through your fingers, the vata condition can be illusive and, challenging for the practitioner and the client in many ways. The client needs to stick to a regular practice, but it is not their nature to do so. They need a lot of support, repetition and encouragement. Dory, the blue fish from "Finding Nemo" is good example of a fish with vata issues. She has no long term memory, and when told something (even something very important) forgets it within moments. When there is pressing work to be done it can be very challenging to remember that is the nature of the condition/person.

3. Ayurvedic Assessment and Ayurvedic-Based Yoga Recommendations

Ayurvedic Assessment: With Sacroiliac dysfunction, the body is out of balance in one of two ways. The joint/person is either stuck and stiff or loose and unstable. From an Ayurvedic standpoint the first case is a Kapha imbalance. If you are dealing with a Kapha Stuck type of issue, besides release for the joint, you might need to explore other modalities to help you deal with the other koshas that might also be stuck. These could include anything from energy work to psychotherapy depending upon which modality you resonate with the most. The Vata looseness or instability is exacerbated by stress. When Kapha (strength) is way down, increased vata presents as instability. Diminished strength over time especially chronic stress related issues will not simply need strength in the muscles, but stamina as well. This strengthening process over time should extend from the physical to the subtle bodies. It is important for the prana to become balanced or the pain will flare up elsewhere. Unstable prana translates as unstable mind.

Ayurvedic-Based Yoga Recommendations: While all three of my case studies had different Prakritis (natures), and causes of their pain, they all had in common a vata imbalance. The joints are vata, the moving elements of the body. While we did a certain amount of body balancing on the grosser, physical level, the next layer of work is deeper investigation into the more subtle koshas in order to balance the doshas. Using the breath, identifying the emotions that come up and where they manifest in the body and then clearing the mind to relax into the intellect and finally settle into the bliss body. To dig a little deeper into the Kapha, devotional element, in other words, what do you love…and…what fires you up? In order to stabilize Vata and to find strength/stamina and a steady fire in the body, regular breathing and meditation practices as well as relaxation should be done. The joint freeing exercises along with the wave breath is very easy way to start, and has proven to be very therapeutic for all of these cases.

4. Common Body Readings/Findings

Relevant muscle imbalances revealed by posture include muscles supporting the feet, legs and hips. Relevant common body readings (Structural Yoga Therapy page 103):

Postural Change	Tight Muscles	Weak Muscles
Body leans backward	Gluteus maximus, thoracic erector spinae	Tibialis anterior, psoas, rectus abdominus
Flat back	Middle trapezius, rectus abdominis	Lumbar erectors, psoas, hip flexors
Hip elevated	Quadratus lumborum, psoas	same as opposing side
Hip twisted	Abdominis oblique, psoas, tensor	same as opposing side

	fascia lata, sartorius	
Feet turned outward	Psoas, external hip rotators, sartorius, gluteus maximus	Tensor fascia lata, gluteus minimus
High arch	Tibialis anterior, tibialis posterior	Peronials

5. Contraindicated – Modify or Eliminate

"The sacroiliac joint remains healthier if not stretched too much. In fact, focusing on creating stability is the key to preventing overstretching and thus remaining pain free in the sacroiliac joint."(Lasater) Some of the very poses that may be prescribed to help the sacroiliac joint, if done incorrectly, could exacerbate the problem.

The poses to be especially cautious with are twists and forward bends. In the acute pain phase of the dysfunction, it may be wise to eliminate these poses altogether. When you feel you can work specifically without creating torque of the sacrum and ilium moving apart, modify these poses so that the pelvis and sacrum stay meticulously together.

6. General Recommendations

Once you have been properly diagnosed,

Therapeutic/Free of Pain:

- In the acute stages of Sacroiliac dysfunction, it is important to address any inflammation and/or swelling involved with the injury. Ice the area not longer than 20 minutes at a time.
- Get a thorough screening done by a physician or physical therapist whose opinion you trust with proper muscle testing and joint tests.
- Rule out any other possibilities for the pain (ie. Is it purely muscular or is the joint really the culprit).
- Stop doing any asanas in your yoga practice that could be suspect in adding to your pain.
- Assess your daily routines for possible actions/positions that could aggravate the situation.

Stabilize the Situation:

- Once you have a clear program to follow, make sure that you follow through with persistence until your pain has resolved.
- Set check points for yourself over a period of time to keep on track of your progress.
- Re-evaluate your stress level at the moment. Is it adding to your issue?
- Do deep relaxation.
- Plan for the practical aspect of your meditation practice.(when where how/how long)

- Re-affirm your meditation practice

- Balance out your sitting and standing for the day. Do you sit for long periods of time without standing?

- Set a timer to go off regularly to remind you to stand up and walk around(sitting is a de stabilizing position for the sacroiliac joint in and of itself)

Maintenance:

- Continue with the JFS and your strengthening regime.

- When the asymmetries become more balanced, add in symmetrical poses to keep the body balanced.

- Continue to pursue balance in the deeper koshas to keep the whole person happy. As Mukunda says, “We are like holograms. We change any part and the whole thing shifts”

7. Questions and Answers from www.yogaforums.com

Unstable SI Joint (coupled with tight hip muscles)

Posted: Tue Sep 23, 2003 3:59 pm Post subject: Sacroiliac joint pain
Question: I have searched your database of previous Q & A's pertaining to SI joint pain and have tried several things to no avail. I have pain in my Right SI joint that results in tightness in the hip flexors & rotators and side of leg. I have been through 11 weeks of physical therapy with little relief. The therapist diagnosed it as an unstable SI joint that "gets stuck" out of position coupled with tight hip muscles (he felt that the SI joint was moving instead of the hip). I have also sought chiropractic adjustments to ease the pain recently -- the chiropractor said that the joint was "frozen" and "locked into place" and is adjusting to free it up and thinks the joint is "too tight." I was also X-rayed due to my Doctor being concerned about Spondylitiis. (X ray should very mild Osteoarthritis - no sacroilitis.)
I presently teach about 7 classes a week (Kripalu style) and feel the pain mostly when doing twists and some forward bends. I have modified those to make sure I am moving the hip in relation to the pelvis to ease any strain on the joint and also do gentle stretches/Asanas for the hip muscles daily. Before teaching I had a desk job for 14 years and frequently sat cross-legged (R over L leg habitually) which is probably the precursor for the problem. Any thoughts or advice? Namaste, T

Posted: Tue Sep 23, 2003 4:30 pm Post subject:
Answer: I always prefer to see those who are outside the general guidelines. Is that possible? Perhaps even videotape yourself and send me tape to evaluate. If not or until then some ideas are to use only muscles of tone during asanas. Do not try to stretch. Only work to feel muscles contracting, especially during twists and forward bends. Use hip flexors for strength. If this does not help it within a week then I would also suggest doing my joint freeing series daily for 2 weeks and nothing else.
Other thoughts are what is the major stress in your life? Are you tending to it? Or is there something big you are avoiding? This is often accompanying lower back pains -- especially not dealing with an intimate or business relationship issue that is a "pain in the back,"

Functional leg length discrepancy

Posted: Fri Aug 06, 2004 11:43 am Post subject: Sacrum dysfunction
Question: I was a competitive runner in high school from age 12 onwards. At age 15 I would run 1 of 4 races in a meet & then find I could barely walk. It seemed one leg was shorter than the other. I went to a chiropractor 3 times/week in order to continue racing. The following year I quit & haven't run seriously since, although I have done nearly every other dance, sport, or body exploration I could manage.
With the continued movement, but not the jarring of running, the sacrum discomfort was alleviated. It is still aggravated by sitting too long. In high school I had an MRI & in college I saw a "spine" doctor at Cornell Med in NY & then a chiropractor & later on an osteopathic doctor. The MD reiterated that I have a mild, beginning scoliosis (Lumbar curves to L slightly), which I had managed to keep from developing by studying ballet & maintaining tall posture.
The osteopath (2 years ago) took an x-ray & said one leg was longer than the other, causing my pelvis to twist. He gave me a heel lift (L foot) & said I would have to wear it the rest of my life. He did acupuncture on my L QL's & said the muscle was so tight & had been so tight for so long that they could barely get the needles into the muscle to release it. It remains tight to this day. However, I was wary of him & didn't trust him. Immediately after I was at Kripalu for yoga teacher training & I had a session with Lee Albert--Positional Release Therapy. This helped tremendously & I quit wearing the heel lift. However, he said just the opposite of the Osteopath--which was that it was highly unlikely the bones of my legs were different lengths & far more likely that there was an imbalance in my hips. He prescribed Garbasana (child) 5 minutes each day & Matsyendrasana (seated spinal twist) each day.
I have not, I regret to admit, been religious about doing these 2 postures every single day. Now I find not only are my sacrum & pelvis more loose & moody, but my L knee has been feeling strange for the last few months. It feels as though the shin bone, where it meets the knee, is about to pop through the skin & is very tender to the touch. I have difficulty doing child pose now b/c of this. I can also feel when I do it upward-facing--pavana muktasana--that the L ASIS bone is tilted uncomfortably forward into my thigh & my right lower back is not as even in the floor as the L.
Three more details: There is a band at the groin--just below the L ASIS bone--that has been bulging for years. Initially I thought it was a swollen lymph node, but now wonder if it is the Psoas or another muscle that is stretched too far over the bones in my pelvis. Secondly--I have had spider veins in my thighs since age 15 & they have been slowly creating broader maps through my legs. They have spread into the shin & calf of my L leg. Most everyone says it's nothing to worry about--but I can't imagine that faulty circulation is something to ignore.
And finally, I have had low arches, but in the past few years of focus & awareness through yoga practice (coupled with Kathak--Indian dance--for 6 months & now Flamenco--although I am unsure if these foot-active dances are ultimately helpful or hurtful), I have strengthened & broadened my feet & lifted the arches somewhat. I notice discrepancies in the feet & toes on each side, but have not been able to figure it all out--to piece all these various bits together & understand how to better align.
So, having taken all your time with so much information, I am simply hoping you might confidently shed some light on what is going on & what I can do to heal.

Many thanks, Melissa.

Posted: Fri Aug 06, 2004 11:49 am Post subject: Sacrum Dysfunction
Answer: I agree with the Postural Release Therapist, that there is an extremely remote possibility that your legs are uneven length. Most likely there are muscular imbalances. I have assessed over 30,000 people in 30 years and found only 2 with true leg length difference, both due to auto accidents. So you need an accurate assessment of what muscles are tight what are weak so we can do something specific for you. It doesn't sound to me from your history that that has been done. A mild lumbar scoliosis can

cause this situation to give spasm to Quadratus Lumborum (QL) and the resulting appearance of leg length difference. This being the case the two poses you were given will not likely make a lasting difference because they are not affecting the QL and psoas. You need to be seen by me or one of my graduates. Refer to my website for the graduates in MA or CO or to my travel schedule under the workshop page -- www.yogatherapycenter.org/workshops Namaste Mukunda

Posted: Sun Jun 12, 2005 5:01 am Post subject: Sacrum Dysfunction and Swelling in Pelvis
Additional Comment: I have mild rotational scoliosis and one leg longer than the other twisted pelvis. I have undiagnosed symptoms very similar to yours. My history of diagnosis is - hernia, groin strain, facet joint degeneration, psoas bursitis. You might have psoas bursitis especially with your history of running. Also your symptoms could be caused by your scoliosis or leg length discrepancy which apparently can be structural or caused by bad muscles and posture. I am still looking into all this myself so guessing as I go but have come across a few web sites which suggest 'releasing the psoas muscle' which can be done by a chiropractor or an osteopath this is a very strong muscle which if in spasm can cause your hips to twist and for you to appear to have scoliosis and leg length discrepancy. Good luck, Barbs

Posted: Sat Jun 18, 2005 11:15 am Post subject: Sacrum Dysfunction
Additional Comment: I agree with Barbs in that there are many possibilities. I find that often all these variations of symptoms boil down to a root cause of dysfunctional motion of the sacroiliac. My spiritual teacher recently gave me an exercise that corrects this uneven motion regardless of what symptomology there is. The S/I should move up on the hip going into flexion (lifting the thigh) while standing. The host of other muscles involved can then receive the energy provided by the sacral nerves and subtle prana flows from the first and second chakra. This exercise can be learned by anyone who has attended my workshops or best by graduates of my Structural Yoga Therapy training. The list of grads is on my website. www.yogatherapycenter.org blessings. mukunda

SI mobilization series + practice question

Posted: Wed Sep 10, 2003 6:47 pm Post subject: SI mobilization series + practice question
Question: I did a private session with you during your June visit to the Yoga House in Pasadena. I was having pain around the right hip, low back, and upper buttock. You diagnosed me with right internal hip rotation above average, left internal hip rotation below average, external hip rotation above average on both sides. You further diagnosed bowed legs and the left sacroiliac moving down. You recommended strengthening adductors, right hip externals, and hip internal rotation, as well as stretching the left iliotibial band and internal hip rotators. You taught me and gave me the instructions for the sacroiliac mobilization series (and several other stretches).

I did the SI mobilization series daily for a couple of weeks and found that the hip/back pain was worse. When I laid off, it improved. I have a 4-5 times per week asana practice (mix of yin yoga and vinyasa flow--lots of suraya namaskr). During classes and practice my hip feels very good and flexible. Often in the mornings (the day after practice or not) the hip is sore. I've started the SI mob. series up again the past few days and find that the right hip is much more mobile than the left. The pain in the right hip has increased relative to before starting the SI series again. I'm wondering if I was doing the SI series wrong or just gave up on it too easily.

Another question about the mix of practice between classes, regular asana practice, and SYT asana practic. I find that if I do all of the SYT asanas you recommend, it takes a good 45 minutes. That's a substantial chunk of the 60 to 90 minutes I usually practice. My classes run 90 minutes and I usually don't warm up with the SYT series before class. Any recommendations on balancing among these

(wonderful) options?

Namaste,

Robert Mittman

Posted: Tue Oct 21, 2003 8:07 am Post subject:
Answer: that could be the case. when the si series causes pain you need to elevate your hips. There should never be pain from any yogic practice and especially this one. The pain which is in the body is to be lessened or removed from yoga. When it does not do that the practice must be modified immediately. I suggest you go back to my program with that in mind and correspond to me directly via email - yogimukunda@comcast.net or a phone call 303-442-7004 for more immediate feedback on your practice.

I would recommend doing the entire SYT practice only once or twice a week rest of the time do the recommendations I have personalized for you. Those practices need to be done daily. Without doing them faithfully you are wasting your time and money on seeking private yoga therapy advice. The rest of the time can be composed of what is your personal sadhana.

SI issues women vs. men

Posted: Mon May 19, 2003 9:38 pm Post subject: sacroiliac
Question: Can you explain some of the reasons why women seem to have more difficulty with the sacroiliac than men.

Posted: Mon May 19, 2003 9:46 pm Post subject: sacroiliac
Answer: Anatomical differences between the sexes is a factor in sacroiliac and piriformis syndromes. The female sacrum connects two vertebrae to the ilium and the male sacrum has three. The average female sacrum is slightly wider and shorter, because of the birth canal, than the more narrow, longer male sacrum. Many refer to the sacrum as the "keystone" of the body. This reference comes from a term used in construction to describe the last stone to go in place when building an arch. If the "keystone" is out of place, the arch will collapse.

More SI Joint references and apana prana

Posted: Fri May 10, 2002 9:15 pm Post subject
Question: Dear Mukunda, hope you are well. I am writing with questions about the sacroiliac joint-mine in particular. I have had other joint pain (and saw you in Calgary about that-Vata displaced and now my SI has gotten into the game-slight since Feb and more active in April. My questions are: 1) what are my best resources to learn about the SI joint? I have Mary Pulig Shatz (which has helped me some) Anatomy of movement (which has kind of helped me understand the movement) and read and reread Judith Lasater's article from Yoga Journal Last year. I have also been lucky to work with Judith 2 weeks ago when she visited Calgary but I still need to know more. My symptoms are pain/ache about the size of a quarter on the right SI joint and recently some low back tightness, almost spasming on the right side. I think (still not sure because it's been hard to get it settled down) it's irritated by hugging knees into the chest and forward bending (hip flexion) which, as I understand moves the SI through it's maximum ROM. I also noticed pain after doing cobra/locust. At your Calgary session in March I irritated it doing Right leg extension and flexion of the knee and you adjusted me to allow more external rotation on the right leg. I still notice any lifting of the right leg while sitting irritates. What I have been

doing for 1 week is Shatz's recommended rocking to identify protruded SI. I identify the right side, but it's the sore side, protrusion is difficult to know for sure. I have found some success by pulling in the right knee to chest and levering with the left leg straight and lowering to the ground but MOSTLY with the left leg straight and abducting-that really seems to adjust me and it lengthens my right leg, which is shorter. Also Judith told me over the 2-day workshop that I was left side posterior, then anterior then posterior again. She also left me with some strengtheners. I would like to know as much as possible re: assessing the SI to know what's really up with me or any future students, how does pain on one side reflect that it may represent STUFF on the other side and what to avoid while SI is irritated - If anyone knows for certain, as well as tried and true strengtheners. I recognize each case is individual. Sorry to be so long winded but I am eager to nip this and learn as much as I can. Thank you for allowing this exchange and looking forward to your return to Calgary in JUNE. Smile and breath, M

Posted: Fri May 10, 2002 9:22 pm Post subject:
Answer: On an energy level, which I believe is the causation of S/I distress, meditate more often deeper, with intention to restore apana prana to its home in the lower abdomen and pelvic region. Ask yourself what do I need to learn and see what your inner teacher says. Ask with faith and confidence that the guidance is there and that the Divine is there to protect and guide you in all your affairs. Do this with sincerity and what you need will be provided fully? Then also do the following.

Main reference I would suggest outside of what you have mentioned is to look at my website recommended reading to see you have covered all primary recommendations there first. More advanced reading would be the Low Back Pain Syndrome book of the 7 book Pain Series by Rene Cailliet, MD, published by FA Davis Co..... In addition you can look for Physical Examination of the Spine and Extremities by Stanley Hoppenfeld, MD, Orthopedics published by Appleton-Century-Crofts, NY. The other factors are to strengthen the gluteus Maximus by doing legs in external hip rotation and extension from a variety of basic poses -- locust, cobra, sunbird, and any other creative motions you can generate. Do them mildly and avoid hip flexion that are clearly painful to you.

SI Joint-short term vs. long term help

Posted: Sat Apr 27, 2002 3:08 pm Post subject:
Question: I am suffering from sacroiliac pain in the right side. I visited a chiropractor but it doesn't cure me completely. After some time the pain returns quickly. An x-ray was taken and I suppose that my pelvis is slightly rotated forward on the right side. Please let me know what postures I can use to get rid of this problem permanently

Posted: Sat Apr 27, 2002 3:15 pm Post subject:
Answer: I love hearing a request for a permanent solution to a repetitive problem. The permanent solution is stop identifying your Self as being a physical body. The short-term solution for the body issue is to mobilize the sacroiliac properly. The following exercise does that and needs to be done regularly until the new pattern is established as a reflex. 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 iliac crest (top of pelvis) exhaling as you contract your belly. 12X or until you feel the motion becoming smooth whichever takes longer. Your 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. 12X then reverse legs and repeat. This should be done before any exercises or asanas.

8. References

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www.yogajournal.com/health/562.cfm ("Out of Joint", Judith Lasater's commentary on resolving yogis Sacroiliac discomfort)

www.spine-health.com/print/topics/cd/sjd/sjd001.html (definition of Sacroiliac Joint dysfunction and an aid in understanding back pain and neck pain)

www.spineuniversity.com/public/print.asp?id=89 (Anatomy of the Sacroiliac joint, causes of SI Joint syndrome, symptoms, diagnosis, treatment options, possible complications from surgery)

www.yogajournal.com/practice/633.cfm ("Poses for Sacroiliac Pain", Esther Myers' Which yoga poses to do and which to avoid)

http://www.vh.org/adult/provider/radiology/pelvis/functions.html (functions of the pelvis)

9. Appendix

a. Sacroiliac Stabilizer © 2006 Mukunda Stiles

Sit on the floor with your knees bent and feet to the left side, so that the left foot points back beside the hip and right foot is adjacent to the left 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. Be sure the inner knee is comfortable. This should not be done with the knee in pain. 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 (Fig. 1). Then arch your lower back forward contracting the psoas as you inhale (Fig. 2). Repeat 12 times, 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.


Fig. 1

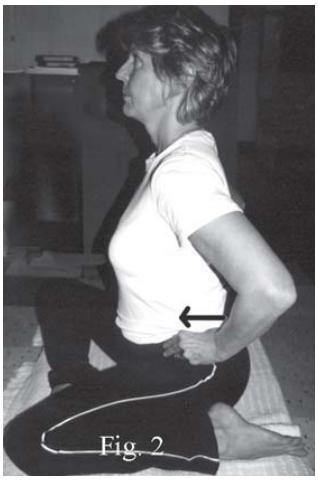
Fig. 2

The second part of the series is to place your hand on the top of the left thigh near the groin and use it to move into internal hip rotation (Fig. 3) and then external hip rotation (Fig. 4). 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 12 times, then reverse your legs and repeat. Once completed, stand and do several "marching steps" bringing the knee waist high, then recheck your sacroiliac joint to see if this exercise has effected a change, a movement toward balance.


Fig. 3


Fig. 4

b. Orientation and Imagery

(I use this imagery in my own teaching to educate my students about their anatomy and alignment)

- **Landmarks And Orientation**
- **Rotation**
- **Pelvic Neutral Position**
- **3 Dimensional Opening And Closing**

Landmarks And Orientation … The Rope Swing and Laser Lights

Sitting on a yoga block, imagine the sitting bones are like the two knots on the bottom of a rope swing. We want the platform of the rope swing to be flat and level to the ground, and the knots to be directed straight down rather than sitting on the back or front side of them. When moving on from the seated poses, the rope swing knots can turn into laser lights that can be directed forward or backward moving the pelvis into posterior or anterior pelvic tilts respectively

Rotation … The Pelvic Wheels

Layering movement into our picture, let's imagine a wheel on either side of the pelvis. As the pelvic wheels move into forward motion we are moving into an anterior pelvic tilt. The belly button moves forward and the sitting bones move back As the pelvic wheels move into reverse motion we are moving into a posterior pelvic tilt.

An example of tying these few images together:

- With a client in downward dog who is in a posterior pelvic tilt, we can direct them to work toward shining their laser lights higher up on the wall, and bringing their pelvic wheels into forward motion bringing the belly button closer to the thighs. This would hopefully bring their awareness to the alignment of the pelvis in relation to the legs and torso.

Pelvic Neutral Position … Absolute and Relative Neutral

Absolute versus relative neutral positioning are terms that I have nicknamed to differentiate between an anatomically absolute neutral position for the pelvis that we can aspire to, and an appropriate degree of neutral positioning to work on that will be safe and effective for the individual student.

Depending on a student's condition and level of body awareness, it may or may not be appropriate to aspire to an "Absolute Neutral" position.

For example:

- If they have been holding their alignment in a posterior pelvic tilt for a many years, it may be too much of a shift to go into absolute neutral and cause muscular discomfort.
- In Some instances where a herniated disc has protruded anteriorly (these are not the most common directions for herniations to happen and would most likely have occurred in a golf or

dance injury). Since the herniation has happened while doing a backward bend or backward bend in combination with a twist, going into absolute neutral position may simulate a back bend and, doing more backward bend could aggravate the condition.

This being said, if it can be done without causing tension in the back it can be a great place to work for functional stability (using the energetic actions of Mula Bandha and Uddiyana Bandha) since it re-affirms the natural curves of the spine.

Anatomically absolute neutral position for the pelvis is to be aligned such that the hip points (ASIS) and the pubic bone are in the same plane. This creates a neutral base for the spine which allows its natural curves (lumbar, thoracic and cervical) to fall into place.

- **Hero**: A good place to find this position for the pelvis is hero pose on a block. I find that students tend to fall into a relatively good position for the pelvis and spine in this pose.

- **Pelvic Rocks to Find Neutral**: Lying on your back, move into posterior then anterior pelvic tilt and make the "bell swing" of the pelvis smaller and smaller till you settle out into what you perceive as a neutral pelvic position. Then place your thumbs on your hip points and your finger tips on your pubic bone, lift your head and look at where you actually are in space. Usually there will still be a little posterior tilt happening. In this case it is useful to imagine the tail bone is weighted a little more, and the hip creases are softening and becoming deeper. Envision a level on the space between your bellybutton and your pubic bone and do your best to "level" out the bubble.

Since most students, in my experience, tend to be in a posterior pelvic tilt, and have possibly been holding their alignment in this posture for a long time, it is good to take "baby steps" toward an "Absolute neutral" and find an appropriate degree of neutral positioning to work on at this time.

- **The Ten Second Pause**: The technique for finding what I am terming "relative neutral" is to go into an absolute neutral position and hold that position for ten seconds. Then relax and see where your spine and pelvis "settle out". Inevitably it will be somewhere between where you started and where you held. This is an ideal alignment to work with for that day. As you progress, your next practice should be a little closer to neutral and so on, until you have enough strength and awareness to maintain an absolute neutral position. (Kane, Kelly 2005)

3 Dimensional Opening And Closing … The Flower and the Hour Glass

If we look a little deeper into the specific movements involved we can differentiate between the movements of the bones that make up the pelvis and the sacrum, the sacroiliac joint (SI joint). The sacrum and the pelvic bones link together in a curved groove and rail connection. As we move into an anterior pelvic tilt with the pelvis, and the top of the sacrum moves forward as the tail bone moves back, at the same time the sitting bones move away from each other and the top sides of the ilium move together. This is called Nutation, and likens the shape of the bottom of an hour glass (top closes as bottom opens). Nutation allows forthe bottom of the pelvis to open up for the end stages of childbirth.

As we move the pelvis into a posterior pelvic tilt, the sacroiliac joint moves into counternutation (the top of the hour glass). The top of the pelvis opens wider as tailbone tucks under. I like to use the image of a flower opening up. In the birthing process, this allows the baby to descend into the pelvic cavity in preparation for the end stages of childbirth.

In order to understand pelvic neutral position, it is helpful to understand the movements of the pelvis.

In layers simple to more complex. Once you have a firm understanding of the pelvis, its movements and where it is appropriate for you as a individual to stabilize, then you can think about what I call "making the back the back and the legs the legs" in other words, having a greater awareness of the legs moving independently of the back preventing unnecessary stress to the back when the legs are meant to do the movement and thus keep the sacroiliac joint happy.

Visibly how this might look is that when the legs move into flexion the pelvis goes into a noticeably exaggerated posterior tilt.(as opposed to the subtler movements of the SI joint itself.)

c. Hip Differentiation
(Kane School of core integration training manual)

Differentiating the movement of the femur bone from the pelvis is a bio-mechanical principal that pervades Joseph Pilates based work. Moving forward we will call this principle 'hip differentiation'. The following exercises are designed to promote a release of the musculature surrounding the hip joint to allow a more complete excursion of the femoral head in the acetabulum.

Knee Stirs
Start: Supine neutral, hips flexed, hands on knees.

Cues: Maintain neutral pelvis, stir femur bones slowly in both directions; allow the femoral heads to release deep into the hip sockets.

Focus: To release the superficial hip flexors (TFL, rectus femoris, sartorius). This should allow the femoral heads to release deep into the hip sockets.

Knee Folds
Start: Supine Neutral

Cues: Maintain neutral pelvis, flex hip to 90º, and flex other hip to 90 º. This is the beginning position. On exhalation touch the toes of one foot to the mat and rebound the leg to the beginning position. Inhale at the top. On exhalation, repeat on the other side.

Focus: Stabilization of the pelvis while femur articulates in the socket (hip differentiation). To release the superficial hip flexors (TFL, rectus femoris, sartorius) and activate the psoas major and iliacus while maintaining a neutral pelvis position.

d. Related Pelvic Tests
(Clinical Massage Therapy by Fiona Rattray and Linda Ludwig p.1097)

Supine to Sit Test
To assess for a functional leg length discrepancy:

- Place the client in a supine position with the knees in extension.
- Compare the level of both maleoli.
- Instruct the client to sit up.

- Note whether the affected limb appears to lengthen when comparing maleoli levels.
    - If the affected limb appears longer when the client is supine, but shorter when sitting up, this is **positive** for functional leg length difference on the affected side due to anterior innominate rotation.
    - If the affected limb appears shorter when the client is supine, but longer when sitting up, this is **positive** for functional leg length difference on the affected side due to posterior innominate rotation(Magee, 1992)

Sacroiliac Joint Motion or Gillet's Test*
To assess mobility of the sacroiliac joint:

- Place the client in a standing position, using her outstretched hands against a wall for stability, if necessary
- Kneel behind the client and, with one thumb, palpate for the posterior superior iliac spine on the affected side.
- With the other thumb, mark the S2 spinous process on the sacrum.
- Instruct the client to stand on the unaffected leg and, flexing the hip and knee on the affected side; slowly raise the knee as high as possible.
- At the same time palpate for the relative motion of the posterior superior iliac spine. Normal sacroiliac joint motion is indicated if the thumb on the posterior superior iliac spine moves inferiorly as the knee lifts.
    - A **positive** sign for sacroiliac joint hypo mobility is indicated by the thumb on the affected side moving as the knee lifts.
- Compare the unaffected side for sacroiliac joint mobility.

*It is important to note that there are differing schools of thought when it comes to this test In Structural Yoga Therapy the results for an almost identical SI joint test (variation is both thumbs on the SI joint instead of one thumb on the S2 spinous process on the sacrum) are read in the reverse.

- Normal sacroiliac joint motion is indicated if the thumb on the posterior superior iliac spine moves superiorly as the knee lifts.

Sacroiliac Joint Gapping or Transverse Anterior Stress Test
A stress test to assess the anterior ligaments that cross the sacroiliac joints:

- Place the client in a supine position.
- Apply a crossed arm pressure to the medial aspects of the anterior superior iliac spines, attempting to push the spines laterally and inferiorly at the same time.
- Be careful not to painfully compress the soft tissue lying medially and anterior to the anterior superior iliac spines.

- The test is **positive**, indicating an anterior sacroiliac ligament sprain, if the client reports unilateral gluteal or posterior leg pain.

Sacroiliac Joint "Squish" or Transverse Posterior Stress Test
A Stress test to assess the posterior ligaments that cross the sacroiliac joints:

- Place the client in a supine position.
- Place one hand on the lateral side of each anterior superior iliac spine and apply pressure from lateral to medial and then posteriorly towards the sacroiliac joints at a 45 degree angle, stressing the posterior ligaments.
    - The test is **positive**, indicating a posterior sacroiliac ligament sprain, if the client reports pain local to the sacroiliac joint.(Magee 1992)

A variation:

- Place the client in a side lying position.
- Apply pressure to the upper most iliac crest in a medial direction.
    - Pressure or pain reported by the client local to the sacroiliac joint is a **positive** sign for posterior sacroiliac ligament sprain.

Faber Test
(also called Patrick's Test or Figure 4 Test)

Faber stands for flexion, abduction, and external rotation. To assess the hip and psoas muscle:

- Place the client in a supine position with legs extended.
- Place the client's foot of the unaffected side on the knee of the uninvolved side, making the shape of the number four. The affected hip is now abducted, flexed and externally rotated.
    - If the affected knee remains above the unaffected knee, the test is **positive** for a possible hip joint pathology or shortened or spasmed psoas muscle.
- To assess the sacroiliac joint:
- With the client in a supine position, stabilize the unaffected anterior superior iliac spine with one hand and gently push the affected knee in a posterior direction.
    - Pain reported by the client local to the sacroiliac joint is **positive** for sacroiliac joint dysfunction (Hoppenfeld, 1976).

Gaenslen's Test
To assess for hip or sacroiliac joint dysfunction:

- Place the client in a side lying position on the unaffected side.

- Instruct the client to flex the unaffected hip and knee to the chest, holding them there.
- Stand behind the client and stabilize the pelvis with one hand.
- With the other hand, hyperextend the client's affected leg at the hip.
    - The test is **positive** for sacroiliac joint or hip dysfunction if the client reports pain in these areas.

A variation:

- Place the client in a supine position, with the affected hip just off the edge of the table.
- Instruct the client to flex the unaffected hip and knee, holding the knee to the chest, while allowing the affected leg to slowly drop into hyperextension.
    - Pain reported in the sacroiliac joint is a **positive** sign (Gerard, Kleinfield, 1993)

10. Biography

Frances Taylor-Brown currently teaches in Manhattan, New York in the following modalities: structural yoga therapy, yoga yogilates, pilates (mat and equipment), dance-inspired exercise, personal training, and thai yoga bodywork. Her personal and professional philosophy focuses on incorporating body, mind and spirit through the creative connection of movement/exercise, holistic health counseling and supportive community which fosters personal empowerment