

KNEE POST-SURGERY RECOVERY

STRUCTURAL YOGA THERAPY RESEARCH PAPER

June 2, 2005

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Edited by Mukunda Stiles
July, 2005

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1.a. Case Study – Initial Interview, Review of Symptoms, Subjective Pain Level, Self Assessment

Case Study 1 (Lilith)

“Lilith” had surgery in January 2004 to repair a broken right leg. A rod was implanted to support the right femur and screws were inserted to support the knee. Twelve months post op, her injury failed to heal. Lilith is a 54-year-old woman. She is 5’6” tall, slim to medium built; her constitution appears to be Pitta/Vatta (Appendix H). She has fair skin. She lacks muscle tone but isn’t overweight, she estimates about 130 lbs. Her surgery recovery is complicated by Rheumatoid Arthritis, a condition she has had for 15 years. Her knuckles are misshapen with fingers curled in, limiting the range of motion of her hands. She is homebound and uses a wheeled office chair to maneuver in the house. She lives with her mother and brother. She cares for herself with the exception of cooking meals, which her mother does for her. She works from home creating beaded jewelry using very tiny seed beads. She has minimal experience with Hatha yoga and tried Transcendental Meditation but found it hard to quiet her mind.

She has not followed up with traditional Western medicine as she felt her surgeon was not listening to her needs and didn’t have much faith that western medicine could help her. She believes she is allergic to the titanium screws in her knee and they should be removed. She takes no prescription medication, only natural herbs and supplements she self-prescribes. A holistic massage therapist works with her weekly and over the last year has been instrumental in her progression from wheelchair to wheeled office chair. She doesn’t sleep well, her leg bothers her. Chamomile tea helps and occasionally, she uses a meditation tape by Louise Hay to help her fall asleep. Her main goal is to walk again and then maybe work on healing her arthritis issue.

1.b. Physical Assessment – (Significant Changes in Bold)

General observation revealed a vibrant young woman anxious for attention and socialization. A small open wound is visible on the back of her right knee, which hasn’t healed since the surgery. She has a positive attitude and is anxious to get on with her healing. Muscle testing was an adventure for us due to the challenge of getting her from sitting to a lying position. The first muscle tests were done supine on the couch with

subsequent tests done from her chair. Due to her lack of strength, stamina and pain tolerance, we used the joint freeing series (JFS) to determine some range of motion (ROM) and most of the muscle strength (MT) measurements.

ACTION	01/02/05 (Lying on Couch)				05/14/05 (Sitting in Chair)			
	ROM		MT/JFS (Visual)		ROM		MT	
	Right	Left	Right	Left	Right	Left	Right	Left
SUPINE/SITTING								
Ankle Dorsiflexion	-30	-5	2	2	-5	0	2	2
Eversion	5	20	1	1	5	25	3	5
Inversion	20	25	1	1	10	30	3	5
Knee Flexion	80	120	2	3	105	110	2	3
Extension	-40	-10	2	3	-30	-20	2	3
Hip Flexion Bent Knee	NT	NT	3	3	150 (a)	135	4	4
SITTING								
Abduction	NT	NT	4	4	30	65	4	4
LEANING								
Hip Extension	NT	NT	3	3	-10	-15	4	4

NT = Not Tested

(a) Note: Lilith was born breech with her right knee bent up. Noted here as possible self-protection mechanism (which was not explored) and for future reference if left measurement does not achieve degree of right.

Note: Discrepancies in ROM testing may be due to creative testing methods used to establish best adaptive testing.

1.c. Summary of Findings

Strengthen (K)	Stretch (P)	Release (V)
B – Ant. Tibialis	R – Ant. Tibialis	B – Posterior Tibialis (*)
B – Post. Tibialis	R – Post. Tibialis	B – Psoas (*)
B – Gastrocnemus	B – Peroneous Longus/Brevis	
B – Hamstrings	B – Rectus Femoris	(*) Release chronic contraction
B – Quadriceps		(Sitting all day in office chair?)
R – Peroneous Longus/Brevis		
B – Gluteus Maximus		

1.d. Recommendations

Lilith has a stretching routine she does from her bed. The routine consists of neck, foot and wrist circles, shoulder rolls, torso twists and working with each finger. We added the following:

January 2, 2005

- Joint Freeing Series adapted from sitting in a chair to increase blood flow and range of motion. Lower body only to start. One to two times a day, three to five times each week.

Additional Support:

- Arthritis Diet from Indra Devi (see www.yogaforums.com) was discussed and it was found she already uses a similar diet and when she follows it, she feels the best.
- Receptivity tool (Appendix A) to open subconscious to reprogramming positive thinking.
- Portable Chi Machine (Ref 1.6 and Appendix F) to address the pain and swelling in her knee.
- MSM Cream to assist in healing the open wound on the back of her leg. (Appendix I)

January 8, 2005

Although Lilith reported she did three to four repetitions of the Joint Freeing Series five times this past week, she felt discouraged as it made her realize how far she had gotten from “normal”. She is trying to do the entire routine and is challenged by the arm movements (she can’t bring her arms up very high nor hold them there). She was also having her brother assist her in standing once a day. I suggested she continue this program for the oncoming week and not add anything at this time. Note: Lilith is very conscientious about her diet, which consists of mostly organic foods without sugar and additives.

Additional Support:

- Chi Machine to address the pain and swelling in her knee.
- Reconnective Healing (Ref. 1.7) for deep relaxation and connection to her source. This therapy had an immediate calming affect on her breathing and muscular tension.
- STF Detox Patches (Appendix I) to assist in clearing her system of toxins. Additional supplements of Vitamin C and Yucca Plus.

January 14, 2005

Lilith didn’t do much of the Joint Freeing Series and I suggested she try to incorporate it three times this week. We did not add any additional asana at this time.

Additional Support:

- Created affirmations to use with the “receptive tool” such as “I am completely cared for, I am safe, all of my needs are met, the Universe is abundant and fully available to me”.
- Discussed prayer, ritual and visualizing her ideal life.
- Chi Machine to increase Hyaluronic Acid and address swelling
- Completed a past life Integration.

January 21, 2005

Once again, Lilith did not do much of the JFS. We reviewed the series and she promised to do it five times in the upcoming week. She states, **“I noticed the swelling is down and my range of motion has increased.”** I visually validated her statement and noticed also the **open hole on the back of her leg is closing.**

Additional Support:

- Discussed “Truth” and the physical response to “Denial” which creates irritability.
- Discussed the purpose of ritual.
- Integration on the issue regarding “everything in my body backing up”.
- I asked her to meditate on the benefits of having the screws in her knee.
- Taught how to test her supplements using a muscle testing technique using her tongue.

NOTE: We will stay in touch by phone for the next two months.

February, 2005

Lilith states she has integrated the JFS into her exercise routine she created for herself. Mainly she has added the hip movements and the specific movements of her feet.

March, 2005

Lilith states she is progressing slowly and is disappointed she is not able to use a walker yet. She has strained her left knee possibly by demanding too much from it.

April, 2005

Met with Lilith for evaluation of status. Discussed new therapies she is trying. She believes she **has healed the Rheumatoid Arthritis** (she believes it was caused by a virus) by using Colloidal Silver (Astragalus, Cold Snap and Goldenseal). This may be true that the core of the issue has been healed and we are now dealing with the leftover physical after affects. On my next visit, we will check ROM/MT to determine a plan of action for her physical body.

May 10, 2005

Phone follow-up. Doing ok. Got second degree sunburn; therefore hasn't done any physical activity for a few days. Hopes to get back to it soon.

May 14, 2005

Due to sunburn, Lilith has not resumed her physical workouts. She did purchase her own Chi machine and is using it twice daily, once in the morning and once in the evening (three times was too much and kept her stimulated and awake at night). She noted and I confirmed the tremendous change in the scar tissue on her knee (a benefit of the Chi machine). It was raised and rope-like but has now flattened out.

She feels she is getting better range of motion due to less pain. When we examined her knees visually, her right has no swelling and the wound in the back is completely closed with a small scar. Interestingly, her left knee appears to have retained a swollen Kapha-quality arthritis look while the right appears “normal” shape and size.

We discussed her arthritis symptoms. She doesn't show symptoms in her neck, spine or hips. Only her limbs: knees, ankles, fingers, wrists, elbows and shoulders seem to be affected.

For the next two weeks, her focus will be "Feeling the Stretch before Releasing" when doing the JFS. After reaching full range of motion, she will engage her muscles isometrically until she feels the stretch, then release. She will do the hip extension exercises on the bed one leg at a time using a bent knee to fully engage the hamstrings and making sure she engages the gluts. She will give extra attention to bilateral dorsi-flexion. She will also add some extra laps around the house in her chair as she uses her left knee to scoot and this will help strengthen it in preparation for its role as additional support in standing. She will have to watch not to overdo it.

1.e. Summary of Results of Recommendations

There is a lot of emotional trauma involved with Lilith's condition, both genetic and created throughout her lifetime. We used a technique called Integration Resolution (Appendix A), which uses Behavioral Kinesiology to uncover core issues and release them. Lilith was able to learn to muscle test for herself using her tongue. Some of the emotions and beliefs that came up related to her leg and rheumatoid arthritis were: inability to understand, fear of moving ahead in life, fear of change, inability to support self and feeling totally helpless in ability to change life's burdens.

Due to numerous other factors being involved such as arthritis, lack of strength and inability to stand or maneuver from chair, it was challenging to focus on rehabilitating the post-op knee. We were limited to testing from sitting and lying down positions.

When left to her own devices, Lilith figured out a way to integrate the JFS into her regular stretching routine. She has continued to explore other therapies to assist in her healing. Pitta Dosha types thrive on being able to take charge like this. Though Lilith feels her progress is slow, she continues to move in a forward direction. I believe her attitude and openness to try therapies "outside the box" has been instrumental to her. Her healthy lifestyle (doesn't ingest caffeine, alcohol, nicotine, etc.) and diet has probably been key to her body's receptivity to healing.

1.a. Case Study – Initial Interview, Review of Symptoms, Subjective Pain Level, Self Assessment

Case Study 2 (CS2)

CS2 has recently had her eighth knee surgery. She is a 45-year-old single woman. She has a sturdy round body, which she describes as “fat” though my observation is a typical Kapha body type. She has a light complexion, with clear smooth skin, thick hair, round eyes and a radiant smile. She has been in several long-term Lesbian relationships and has no children. Her relationship with her mother is strained and she is estranged from her biological father and hasn’t spoken to him since she was 20 years old.

This client is a Computer Tech in business for herself. She states that although she loves her job, this is a high stress profession dealing with computer problems all day long; no one calls when things are working fine. She enjoys skiing, horses and anything outdoors. She used to meditate and would like to get back to it. She works out five times a week.

Out of eleven surgeries, this recent surgery on her left knee was her eighth knee-related surgery (some have been on the right knee). One surgery was on her wrist. She has had two back Laproscopies for bulging disks – L3/4 and L4/5. Motorcross racing accidents precipitated three surgeries. She had surgery for bilateral ankle reconstruction when she was 18, surgery for a torn ACL and Patellar reconstruction at age 21 and one surgery requiring hamstring reconstruction. Giving up motorcross, the next surgery repaired a torn meniscus as a result of a racquetball injury. Two surgeries were knee joint reconstructions. She has been told a knee replacement is in her future and she wants to make her knee last as long as possible. She is not in any pain and wishes to focus on stability. She has one more session of Physical Therapy where she has been focusing on gluteal and hamstring strength and being conscious of how she moves. She avoids full leg extensions. Going downhill gives her the most trouble. She feels she is overweight and that this is a contributing factor.

Other symptoms she is experiencing are fatigue, muscle spasms, shoulder tightness, light bothering her eyes and sleeping problems. She gets irritable when she doesn’t sleep so she takes an antihistamine every evening which prevents her from waking between two and three a.m. She is having some premenopausal symptoms.

1.b. Physical Assessment – (Significant Changes in Bold)

Upon assessment, it was noted this client’s SI joint bilaterally moves down. Measurements with a Scoliometer show a Right 3-degree mid thoracic curve, her spine also twists to right. Her right knee hyperextends backwards and her left knee has a chronic slight bend. Bilaterally, her ankles pronate (Left side more than Right). There is noticeably more space between arm and torso on Left side. 1” difference in leg length was noted, Left shorter (or Right longer). After gentle rocking, this distance decreased to ½” difference. (Client mentions that she had lifts in her left shoe for a while when younger.) Surgery scars are noted on her knees and ankles.

	01/06/05				02/03/05			
	ROM		MT		ROM		MT	
	Right	Left	Right	Left	Right	Left	Right	Left
SUPINE								
Ankle Dorsiflexion	0	10			10	10		
Eversion	20	10			28	30		
Inversion	35	25			20	28		
Knee Extension	-5	-1			0	0		
Sartorius Isolation			3	2	-	-	3	3
Hip Flexion Bent Knee	100	105	4.5	4.5	105	130	4.5	5
Flexion Straight Leg		70				95		
External Rotation	25	35			35	35		
Internal Rotation	20	20			25	20		
SIDE LYING								
Hip Adduction	30	30			40	40		
Abduction		45				55		
PRONE								
Knee Flexion	115	125	CRAMP	CRAMP	120	125	5	CRAMP
Hip Extension			CRAMP	CRAMP			5	5
Internal Rotation				CRAMP	30	25		5
Gluteus Maximus Isolation			CRAMP	CRAMP			CRAMP	5

1.c. Summary of Findings

Strengthen (K)	Stretch (P)	Release (V)
B. Gastrocnemus	B. Gastrocnemus	B. Gastrocnemus
B. Hamstring-Inferior Attach.	R. Soleus	B. Hamstrings
B. Adductors	L. Anterior/Posterior Tibialis	L. Peroneous Longus/Brevis
B. Anterior/Posterior Tibialis	B. Peroneous Longus/Brevis	
B. Sartorius	B. Hamstrings	(*) Balance Flexion/Extension
L. Abductors		Eversion/Inversion
B. Internal Rotators		
B. Quadriceps		
L. Peroneous Longus/Brevis		

1.d. Recommendations

January 6, 2005

- Joint Freeing Series
- For Cramping - Drink Extra Water, Focus on Breathing
- Diet - Move Protein Shake from lunch to morning
Main meal between 10 a.m. and 2 p.m.
Something lighter for dinner – soup or salad

February 3, 2005

Follow up visit. Client is doing Joint Freeing Series. She has made changes to diet and has lost 9 lbs. since Christmas. She read Discovering Grace by Cheryl Richardsen. She realized, "I'm not a fat person, I'm fit" and recognized the gifts in her life are not random. She is cross-country skiing.

- Continue to incorporate Joint Freeing Series with more specific focus:
Ankle Dorsiflexion and Inversion to increase ankle range of motion

Knee Flexion and Sunbird to increase knee range of motion and smooth movement

- Asanas: Tadasana - Mountain Pose: Focus lifting instep/arch and strength - Balance Kapha

UtittaTrikonasana – Triangle: Same as above

Virabradrasana I – Warrior I: Same as above

Adho Mukha Svanasana – Down Dog: Stretching Calf Muscles,

Ankle Flexion

Climbing Stairs – Drop Heel, Ankle Flexion – Stretch Gastroc/Soleus

Sock Scrunch – Increase Arch, Mobilize bottom of foot

Stick - Raising Left Leg – Strengthen Rectus Femoris

Additional Support:

- Discussed nurturing self. Light Essential Oil in bath, scented candles, scented lotion.

April 2005

Client has not returned phone calls. When seen in passing, stated did not feel she could be a good subject, as she has not been doing her yoga. Her horse recently fell on her recouping knee and she may need another surgery.

1.e. Summary of Results of Recommendations

Prior to CS2 becoming a Structural Yoga Therapy Case Study, we had worked together to clear some emotional issues using Behavioral Kinesiology. She didn't return for her follow-up session. One of the most noticeable changes in the short time we worked together with the yoga therapy was in CS2's self image. She felt pride in herself. In her words, "I realized, I'm not fat, I'm fit." I believe these two therapies together allowed her to move rapidly forward. She was making very good progress until this last accident. Her range of motion and muscle strength was increasing rapidly. Her muscles were not cramping as often. Sometimes we get stuck in patterns. We feel safe because we're comfortable in known territory. Fear of change and what it might bring can paralyze us, locking us into creating the same traumas over and over again. Eventually, the physical manifestation makes or breaks us. It's our choice, we create our lives. Those with a predominant Kapha Dosha will take the longest to change. There comes a time to let go of some clients, letting them know we are here for them when they are ready.

1.a. Case Study – Initial Interview, review of symptoms, subjective pain level, their self assessment

Case Study 3 (CS3)

CS3 is a 37 year old female. She is married with no children. She leads an active lifestyle enjoying all kinds of outdoor sports such as skiing, biking and hiking. She is very friend and family oriented. She is possibly tri-doshic (all three doshas present to the same degree). She is medium build, strong and without physical or health issues in the past. She is intelligent, straightforward and personable. Spiritually, she believes: "My

life revolves around me good and bad. I believe in evolution, everything I do comes back to me”. She feels organized religion is politics, has no doubt in past lives and life on other planets. Her opinion of healing is “It is a direct reflection of me and what’s going on around me”.

Typical of many residents of the small mountain community where she lives, she holds down several jobs, four at the time of her knee surgery. At this time, she is not working, as she puts it, “Right now, it’s all about me creating health”. Her typical day begins at 7 a.m. with no breakfast, eating lunch consisting of a sandwich, yogurt or salad around 11:30 a.m. Dinner is light, usually veggies. Bedtime is around 10 p.m.

As a result of a skiing accident, CS3 had left knee surgery to replace her ACL and repair lateral and medial meniscus tears. At the same time, she broke her left ankle, which didn’t require surgery. She has been very aggressive in a recovery program. In addition to Physical Therapy (PT) once a week, she works out on her own at the PT office several times a week. She has never done yoga and is very interested in adding it to her life.

1.b. Physical Assessment – (Significant Changes in Bold)

General observation reveals right hip higher than left, right foot externally rotated, right arm hangs closer to the body than the left, her upper body leans to the right. Left leg is one half inch longer than right, flushed and muscles are atrophied. Her right S/I joint doesn’t move. Her left knee is inflamed and hot to the touch.

	05/13/05				06/06/05			
	ROM		MT		ROM		MT	
	Right	Left	Right	Left	Right	Left	Right	Left
SUPINE								
Ankle Dorsi-flexion	15	5			15	15		
Knee Flexion		115				130	5	5
Hip Flexion – Bent Knee			1	1			4	3
External Rotation	30	35	4	1	45	40	4	4
Internal Rotation			1					5
SIDE LYING								
Hip Adduction	30	35	2	2	20	20	5	4
Abduction			5	2			4	4
PRONE								
Knee Flexion		120	3	0		125	4	2
Extension		-5	4	0		0	5	2
Hip Extension			4	0	15	15	5	5
External Rotation			2	1			5	4
Internal Rotation		25	1	3		35	5	4
Gluteus Maximus Isolation			2	1			5	5

1.c. Summary of Findings

Strengthen (K)	Stretch (P)	Release (V)
B. Gluteus Maximus	B. Hamstrings	L. Quadriceps (*)
L. Gastrocnemus	L. Rectus Femoris	L. Hamstrings (*)
B. Adductors	L. External Rotators	
B. External Rotators	B. Internal Rotators	(*) Balance Extension/Flexion
B. Anterior Tibialis	B. Abductors	
L. Hamstrings		
L. Abductors		

1.d. Recommendations

May 13, 2005

- Alternate ice 20 min. and rest at room temperature 20 min. to decrease inflammation.
- Use a cooling liniment like Sombra or Biofreeze after working out to offset inflammation
- Joint Freeing Series with following adjustments:
 - Focus on left ankle flexion and eversion
 - Focus on internal and external hip rotation
 - Eliminate all postures on knees with exception of Sunbird– do from a side-lying position
 - Cat/Cow (sitting number 16.) focus more on lower body/hip area

May 20, 2005

CS3 states noticeable increase in ROM daily. She is doing a lot of squats in PT and her right leg is sore from it. She notices some swelling in left ankle and knee. We performed ROM and MT tests. ROM of ankle dorsi-flexion and plantar flexion has increased on the left side. Eversion has decreased on both sides. Knee flexion has increased bilaterally. Hip external rotation has decreased on the left and internal rotation has increased on both sides. Strength in knee flexion has increased substantially from 1 to 4 (possibly due to the ability to muscle test more aggressively due to lack of pain and swelling).

- Reviewed and refined JFS.
 - Keep toes pointed up throughout ankle motions, especially eversion
 - Use muscles to initiate movement – do not help with hands until the last moment
 - Roll knee in (internal rotation) before hip adduction and out (external rotation) before abduction
- Added Warrior Vinyasa – focus strength
- Taught Ujjaye breath to use with Vinyasa – focus strength

May 25, 2005

CS3 states focus of PT is “side stepping (abduction) and stairs”; she is using a stair stepper with light leg weights. She is doing the JFS in the morning (sitting on a therapy ball for the second half of the series). She does the Warrior Vinyasa if she has time. She feels the yoga is helping her healing. She feels stronger today overall and believes the warm weather is a factor. Discussed emotional issue that may be involved with knee injuries. CS3 states that she has already thought about this and concluded her lessons were time management, saying no and asking for help.

Upon observation, it is noted her walking gate is smoother than last week, the left knee barely lacks flexion; in other words, she is not limping/straight-legging it as much. Her left knee is still in chronic flexion upon standing and she holds her left leg slightly behind her right. Her right foot turns out and is pronated, flattening the arch.

There is bilateral increase in ankle plantar flexion. Bilaterally, adduction has decreased slightly with abduction increasing. Left knee flexion has increased slightly. Strength in hip extension has increased with knee strength staying about the same or decreasing slightly.

- Observed CS3 doing JFS and refined the following:
 - Breathe slower/move slower
 - Focus on muscles creating the action
- CS3 is ready to try Sunbird pose on knees. A massage table was used and suggested using thick padding or on bed at home.
- Stationary poses were introduced which support the Warrior Vinyasa - Virabhadrasana I and II (Warrior I and II), Parsvottanasana (Side of Hip Stretch)
- Suggested incorporating focus of above poses with Warrior Vinyasa, moving in and out of pose six times to increase balance of movement between flexion and extension, then holding each posture 3 to 6 breaths to focus on strength.
- Added Dandasana (Stick Pose) and Paripurna Navasana (Boat) to increase rectus femoris strength for knee extension.
- Savasana – up to 18 minutes to address impatience, integrate work she has just done and quiet body and mind. Mentioned not letting it frustrate her if she can only stand a few minutes to start.

May 31, 2005

CS3 has decreased PT to once every two weeks and has started swimming. She is not doing the Warrior Vinyasa very much (doesn't like to remember all the steps and what comes next). She really likes the stationary poses. She feels her focus now is structure and balance. She is working with a massage therapist to loosen the muscle attachments in chronic contraction (internal/external rotators, ankle tendons and ligaments). Observation shows smoothness in walking gate with

very little limping. Her right hip appears higher than the left and right leg is externally rotated showing her body is still torqued to the right to accommodate swinging her left leg to the outside to bring it forward. Her left S/I joint moves down and the right is not moving. ROM and MT show flexibility and balance of agonist and antagonist is more of a focus than strength.

- Dropped Warrior Vinyasa and added some more stationary poses (Vrksasana (Tree Pose), Dandasana (Stick Pose), Paripurna Navasana (Boat), Setubandhasana (Bridge), Urdhva Prasarita Padasana (Upward Stretch)). Reiterated Vinyasa style of moving in and out of pose six times with breath for balance, then holding for six breaths for strength.

June 6, 2005

CS3 continues PT but is being prepped for conclusion. She is swimming, doing the JFS and the static yoga poses daily. Observing her walking, her gait is smoother though her left leg acts more like a peg than part of the motion. ROM and MT revealed increased flexibility and strength; however, knee and hip flexion and internal/external rotation on the left side has not reached average numbers consistently nor matched the right side's capabilities. We refined the JFS for her and added Adho Mukha Svanasana (Downward Facing Dog) to her static poses. She will call for an appointment when she is ready to move on.

1.c. Summary of Results of Recommendations

CS3 is able to manage inflammation in her left knee as it has noticeably decreased with each appointment. Also, it does not resurface as quickly or to the extreme of the first two appointments after working with the knee. She has increased body awareness and feels more control over her healing. Her range of motion and strength has increased rapidly. She feels the yoga therapy has been a beneficial adjunct to her physical therapy. In her words, "Physical therapy helped me, but swimming and the Structural Yoga Therapy was the most beneficial".

2.a. Name and Description of Condition

Knee injury is a very common condition. The knee is a hinge joint and theoretically it is strong, well protected and should function appropriately. However, its vulnerability lies in the fact that it is located below the torso, bearing the weight of body, head and arms. It is a major component of moving the body from place to place, therefore sports activities, where quick side to side motion is required, is one of the main contributing factors to injury.

Physical therapy is advised after surgery, therefore, a yoga therapist will typically see someone with this condition post-op and post physical therapy. Sometimes the condition will be chronic with the person having several surgeries in a row or over years. Many end physical therapy prematurely, sometimes due to insurance constraints or personal

choice, and have not achieved full range of motion or do not know how to prevent future injury.

The reasons to add Structural Yoga Therapy to someone's recovery program are to alleviate pain, restore function and/or address deformity such as scar tissue and metal or plastic screws and implants. Ironically, these are the same reasons for surgery in the first place: alleviate pain, restore function and address deformities from genetics, age and accidents.

Methods of Surgery

Surgery is a very invasive procedure oftentimes requiring anesthesia, cutting and implants. Traditional open joint surgery usually requires hospitalization and has a greater risk of infection. The large incisions made produce excessive scar tissue. This type of surgery is definitely more traumatic than the newer techniques of arthroscopic surgery. Arthroscopic surgery can be done on an outpatient basis. Three small incisions are made resulting in less procedure and recovery time than the traditional surgery method. Most patients don't need crutches and are walking within two hours. Unfortunately, when arthroscopic surgery is not appropriate, traditional surgery continues to be used. (Ref 1.1)

Surgical Procedures

Three surgical procedures described here are resurfacing, reconstruction and replacement.

Resurfacing can be accomplished using either arthroscopic or traditional methods. This is commonly used for damaged meniscus (the fibrocartilage cushion within the joint). Some bone is removed on both Tibia and Femur. The damaged meniscus is removed and metal and plastic components inserted and glued in place. Patients are usually walking within two to three hours after surgery but use crutches for one to two days. Bruising is present for about ten to fourteen days. Within two weeks, they can maneuver stairs using a straight leg.

Reconstruction can also be done using arthroscopic or traditional methods. It is used to repair or replace the joint, remove torn cartilage and also bone spurs or loose pieces. Patients can achieve moderate activity in two to four weeks with a brace and the brace can usually be removed with normal function at about five to six weeks.

Replacement is the most invasive, and at this time, can only be accomplished using traditional methods. The damaged area is removed; the bone ends are reshaped and replaced by metal parts. Cartilage is replaced using Polyethylene (a polymer used for electrical insulation, packaging, etc.). The posterior side of the patella is also resurfaced using this material. A hospital stay of three to five days is required. There is very limited activity for two weeks, increasing to moderate activity up to four weeks post-op. Normal activity can be achieved within five to six weeks with the exception of squatting and kneeling, which comes over time.

2.b. Gross and Subtle Body Considerations

Gross Body - Physical

As stated earlier, the knee is a hinge joint. Additionally, there is a gliding component to it. Therefore, it not only hinges but also moves. Average range of motion of flexion is 135-150 degrees.

Three bones make up this joint. The distal portion of the Femur, located in the upper thigh, attaches superiorly to the joint. The proximal portion of the tibia bone, located in the lower leg, attaches from the inferior direction and the patella which is a floating or sesamoid bone is located anteriorly or in front of the joint and held within a ligamentous capsule. The patella moves over the end of the femur and doesn't actually articulate with the tibia.

Four main ligaments hold these bones together. Two ligaments cross each other within the joint. The Anterior Cruciate Ligament (ACL) (note: most commonly injured or torn) attaches on the anterior intercondyle of the tibia and fastens to the medial aspect of the lateral femoral condyle. The Posterior Cruciate Ligament (PCL) is the stronger of the two and runs from the posterior intercondyle of the tibia to lateral surface of the posterior medial femoral condyle. Two ligaments reinforce the sides of the joint. The Medial Collateral Ligament (MCL) begins at the medial epicondyle of the femur attaching to the shaft of the tibia. The Lateral Collateral Ligament (LCL) runs from the lateral epicondyle of the femur attaching slightly posteriorly on the lateral side of the tibia. The MCL is stronger than the LCL due to angle of the femur creating additional need for stability.

The muscles involved with this joint's movements are Extension - Quadriceps group (Rectus Femoris, Vastus Lateralis, Vastus Medialis and Vastus Intermedius), and Tensor Fasciae Lata assisted by the action of the superficial portion of the Gluteus Maximus (attaches into the Iliotibial Band). Flexion - Hamstring group (Biceps Femoris, Semitendinosis, and Semimembranosus) and the Gastrocnemius, Sartorius, Gracilis and Popliteus. External Rotation (bending knee turns out, foot and calf displace medially) – Gracilis, Semitendinosis, Semimembranosus, Sartorius and Popliteus. Internal Rotation (bending knee turns in, foot and calf displace laterally)– Biceps Femoris and Tensor Fasciae Lata assisted by the superficial portion of the Gluteus Maximus (attaches into the Iliotibial Band). Note: The Iliotibial Band is Ligamentous and acts as a stabilizer to the lateral side of the knee joint.

The knee joint plays a major role in many physical activities such as walking, standing, sitting, jumping, climbing, kneeling, squatting, kicking, pivoting and weight bearing of the torso.

The need for surgery can be due to injury, deterioration or deformity, which interferes with normal activities and cannot be addressed or unsuccessfully addressed by medication, weight loss or lifestyle changes. The causes can range from accident to genetic. Age can be a factor as cartilage cushions may deteriorate over time or

osteoarthritis/degenerative arthritis may set in. Unfortunately, overuse is oftentimes involved; it can increase deterioration and wear the joint completely down to bone on bone. Bone loss promotes new bone growth or bone spurs can develop. Also, small debris from cartilage and bone may break free and float.

Noticeable symptoms include swelling, limping, instability, pain, stiffness, limited movement, heat and discoloration.

Some challenges in post-surgical rehabilitation include other issues that would directly affect the joint such as prior trauma to the same area or a degenerative disease such as arthritis. Time, money and insurance limitations can also effect a patient's decisions during the process. A major factor is attitude and commitment.

Subtle Body – Energetic, Emotional, Mental, Spiritual

Energetically, joints are crossroads. The knee joint relates to the Root Chakra. In other words, crossroads related to physical survival or life progress or changes (Ref 1.2). Change in home life, job or relationship can be a contributing factor. Change being the key word. How one responds to progress or change in these areas will affect the knees. Emotions related to knees include pride and ego (Ref 1.3), stubborn, inflexible, unwilling to bend (Ref 1.4) and once again, inability to handle progress or changes in life. Beliefs of being a victim, unable to change circumstances and blaming others contribute to the thought patterns involved. This is a control issue. Wanting to be in control yet not feeling in control. Spiritually, for whatever reason, faith in a higher power has been destroyed and there is an unwillingness to “go there”. Stubbornness, pride and inflexibility keep one from considering another perspective.

2.c. Related Challenges

Other factors to take into consideration when addressing post-surgery recovery include physical limitations such as age, weight, general health, other injuries or diseases. Diet plays an important role in rebuilding healthy tissue. Also adapting the plan to a person's lifestyle (sedentary, active, travel, 8-5 job, etc.) and environment will play a key role in compliance and commitment from them.

3. Ayurvedic Assessment and Ayurvedic-based Yoga Recommendations (Ref 1.5 and Appendix H)

Ayurvedic Assessment

The predominant Dosha will have a great influence on the way a person addresses knee surgery recovery.

Someone with **Vata** as a predominant dosha may exhibit signs of instability in their way of addressing a rehabilitation program such as trying one therapy for a while then something else; but more likely, they will be using multiple types of therapies all at once.

Vata reflects low tolerance for pain; therefore, someone of this predominant dosha will be looking for help and reassurance. They just want to “fix the problem”. They may show feelings of nervousness, anxiety and restlessness. When out of balance, this dosha type can have low stamina, lack of concentration and memory and worry a lot. This dosha type likes routine yet will bore easily if it is exactly the same all the time. They won’t remember what they’re told, therefore, two alternate simple plans written down will have more effect than a long complicated one. As a therapist, taking the role of teacher works well for this type of person. Give them the details, they are going to want to know why. If it makes sense to them, they are more likely to commit and follow through.

Those with **Pitta** as a predominant dosha will not want to be told what to do but would rather have support for coming to their own conclusions. Give them recognition. An approach of “Looks like you’ve been doing ... did you try...” rather than “You should do...” gets more acquiescence from them. They want to get back in control and “fix it themselves”. They tend to overdo so overuse may be a factor in their injury. Emotionally, they may show signs of frustration and anger. When out of balance, they can be critical and judgmental. The task here is to rein them in slowly. First giving them the challenge they are seeking, then gently leading them to cool down (without them realizing it, of course). As a therapist, the role of friend, partner and confidant will give you a chance of input. This dosha is very sharp and attentive. New information will be immediately downloaded but don’t try to feed them something they already know. Rather offer a different perspective on the same subject.

If **Kapha** is the predominant dosha, this person is going to need motivation. When out of balance, an attitude of “What’s the use” may be prevalent. Their pain may be dull and achy and seem to be present all the time. They just want to be left alone (to die). It will take them a while to tell you what’s wrong with them. When out of balance, they tend to be slow movers and slow talkers. They will respond to someone who is loving and caring and will listen to someone they trust as “authoritative” on the subject. Strength and stamina are two of Kapha’s strongest qualities. They are actually very hardy and just need a reason to get up and get going. As a therapist, taking a role of coach and cheering section will help them the most. Remember not to be discouraged working with this Dosha as Kapha takes the longest time to balance/heal.

It is very unusual for a person to be only one dosha. The predominant dosha usually rules but another one may be trying to rule out of it’s home.

When looking at the knee, focus on the dosha present in the knee joint.

Vata	Pitta	Kapha
Cold, Dry, Airy, Unstable	Hot, Fiery	Heavy, Slow, Dense
Creaking, Popping	Inflammation, Redness, Swelling	Stiffness, Immobility
Inconsistent Pain	Sharp, Burning Pain	Dull, Aching Pain

The next step is to decrease these predominant Dosha characteristics within the knee joint. Address the pain first.

Vata knee pain may come from instability. Vata goes all over the place. Focus and attention is necessary; in this case, on the knee. Bring their mind into play. They like figuring things out. Have them close their eyes and ask themselves questions like, “What am I doing to create this pain?” “What can I do to relieve it?” “How can I prevent it in the future?”. Sometimes, they may realize just by moving more consciously, they can relieve the pain. Teach them how. Next address this dosha’s dryness. Lubricate the joint inside and out. Use lots of ghee, sesame oil and olive oil. Drink ghee with warm water. Cook with these oils or put on food. Massage the joint with warm sesame oil. Castor oil can be used. Cover with heat. This not only warms the area, but also encourages maximum absorption of the oil. Creaking or popping sounds can indicate bone rubbing on bone or floating, calcified particles. Therefore, when using asana to strengthen the joint, adapt the poses to avoid creating that sound.

Pitta knee pain may come from overuse. The greatest challenge for this person is going to be to “stop”. Though patience won’t be at the forefront for this dosha, discernment is one of its finest qualities. Ask questions and point out facts that stick out such as, “What activities have you been doing?” “You say that you went golfing and your knee felt great during and after. Then you went bowling the next day and it swelled up like a balloon.” Guiding them to the self-realized conclusion of what is creating the pain, they may say something like “I probably shouldn’t bowl for a while.” Next focus on decreasing the inflammation and swelling. Use an ice pack for twenty minutes, then let it rest for twenty minutes at room temperature. If inflammation continues, continue the cycle a few more times. Aloe Vera Gel is cooling, gently cover the area. A paste of turmeric can be applied to the area alone or mixed with the Aloe Vera Gel. Wrap the joint to rest it by not bending it for a day or two. Asanas will need to be challenging enough to distract them from the fact that the knee isn’t being used right now. Focus on strengthening or stretching weak or tight muscles in preparation for supporting the knee joint when it is ready to come back into play.

Kapha knee pain may come from underuse. Things are stagnant within the joint. To stimulate blood flow, use ice and heat alternately for twenty-minute cycles. Tell them what is going on and what needs to be done to change it. Remember Kapha needs motivation and a reason to do something. Tell them how to do it. “This is what you will need to do to....” Use the natural qualities of this dosha for Asana support. Place them in a strong stationary pose, then begin moving the joint with Ujjaye breath.

Ayurvedic-Based Yoga Recommendations

To bring back Vata balance, asanas should focus on incorporating the breath with rhythmic movement such as Palm Tree Vinyasa. Though challenging for this type, restorative poses should be encouraged to rebuild energy and stamina. Rhythmic and warming pranayam techniques such as Nadishodna, Ujjaye, Kapalabhati, Agnisar Dhouti and Brahmari are beneficial. A vata reducing diet of cooked oily comfort foods and warm spiced milk before bed will bring balance to the entire system. Shatkarma Therapies such as abhyanga, shirodhara, basti and nasya for relaxation and lubrication can be suggested (Appendix G).

Meditation should be included. A guided practice, which begins with mental activity such as mantra or listening to a tape, will capture the attention of the “monkey mind” which is so prevalent here. Lightwork meditation, which begins as a guided technique, is beneficial (Appendix D). Though consistency is needed, creativity within the plan of action will keep boredom at bay. A calming lifestyle is key for this type of person’s overall wellbeing as they tend to burn the candle at both ends.

Balancing Pitta will require a challenging asana practice ending with a cooling one. Focus on the stretch, not the burn, then move focus toward release. Use a vinyasa such as “Sunbird” or “Surya Namaskar”. Allow several quick repetitions gradually encouraging the pause between movements (to feel the stretch) and at the end (to feel the release). After this practice, Pitta dosha type may be more receptive to a long Savasana. Cooling pranayam practices such as Sitali and Sikari can be recommended. Nadishodna can be given focusing on moving toward the challenge of not using the hand to block the nostrils. Bhastrika is beneficial for this dosha but may need supervision due to possible overheating if done improperly. Cool drinks such as water mixed with a little fruit juice and a Pitta-reducing diet of cooling-type foods will be beneficial. When brought to this cooled state, they will be less agitated and more receptive to Meditation. A Meditation practice focusing on discernment is beneficial. A suggestion presented to contemplate for instance: “What are the benefits to me of this knee injury?” “What is my body trying to tell me?”. Tatrak can be used for bringing pause to the motion of this dosha. The wick of this dosha’s candle is like a fuse, burning hot and fast with a big bang at the end.

Balancing Kapha will require getting them moving. While all three doshas can be stubborn, this one expresses it by burrowing in and staying there. Use of Pavanmuktasana (Joint Freeing Series) will gently encourage movement. Recommending yoga class participation to get this dosha out and about with the encouragement of peers is beneficial. Static asanas should focus on strength, which is in their nature and will give them a sense of accomplishment. Warrior Vinyasa concentrating on strong Dristi and Ujjiye breath is a good choice. Bring the focus to feeling the strength. This dosha likes to be warm but not sweaty hot. They perspire easily. The challenge is to kick up the energy without kicking up too much heat, which can be draining. Panchakarma techniques such as Basti and Vamana will help release congealed stagnant substances (Appendix G). The main pranayam technique to use is Kapalabhati, which assists with clearing the lungs, and nasal passages and is cooling. Use of a neti pot beforehand will assist with cleansing the nasal passages. Include a devotional-type meditation practice, one that includes prayer, chanting and ritual. This dosha is very family and community oriented, therefore, group meditation supports this need. When out of balance, this dosha will tend to be sad and depressed with no self-confidence. People with this predominance will tend to feed this with food, which will then cause retention of excess weight. Having a larger frame body to begin with, this extra weight discourages them even more. A Kapha balancing diet will create the fuel needed to run this body type (this dosha doesn’t digest and metabolize carbohydrates well). Encouragement by bringing attention to positive accomplishments and attributes will promote feelings of self worth and meaning in their lives. Focus on helping others

will bring them out of their burrows. This dosha needs encouragement to step up and light their candle.

4. Common Body Readings/Findings

In order to address an issue using Structural Yoga Therapy, it may be necessary to look beyond the obvious afflicted area, checking directly below but also directly above. In the case of knees, functionality in ankles and hips can have a direct effect on the demands placed on the knees. After a trauma, muscles that are secondary movers can take over for the primary movers. Since this isn't their main function, added stress to these muscles can create additional trauma. Also, sometimes muscles try to do the job of bone becoming rigid and inflexible. A Range of Motion and Muscle Strength Test will give clues to what's going on out of the ordinary or normal function expected. Lack of Dorsi-flexion in the ankle joint can limit knee flexion creating a stiff leg or swinging leg to the outside when walking, running, going up and down hill (stairs especially), etc. This in turn can create sacroiliac dysfunction and hip pain. Since many of the muscles responsible for actions of the knee attach to the pelvis, they either become chronically contracted (lack of blood flow, oxygen and nutrients and create trigger points (Appendix C)) or they are chronically stretched, atrophying the tissue. Left untreated, function of additional muscles can be restricted affecting other areas of the body. In the case of knees, the unaffected knee, ankle and hip should be examined to determine any detrimental consequences from oversupporting the afflicted side.

Common body readings may be (Structural Yoga Therapy page 103):

Postural Change	Tight Muscles	Weak Muscles
Hyper-extended Knee	Hamstrings, Gastrocnemius	Lower Quadriceps, Popliteus
Chronic Bent Knee	Lower Quadriceps, Popliteus	Hamstrings, Gastrocnemius
Knock Knees	Adductors, Gluteus Medius	Gluteus Medius, TFL
Bowed Legs	Gluteus Medius, TFL	Adductors, Gluteus Medius
Tibial Torsion	TFL, Gluteus Medius	Gluteus Max, Sartorius, Tibialis Ant.
Feet Turned Outward	Psoas, Ext. Hip Rotators, Sartorius, Gluteus Maximus	TFL, Gluteus Minimus
Feet Turned Inward	TFL, Gluteus Minimus	Psoas, Ext. Hip Rotators, Sartorius, Gluteus Maximus
Pronated Ankles	Peroneus Longus/Brevis	Ant/Post Tibialis
High Arch	Ant/Post Tibialis	Peroneus Longus/Brevis
Flat Foot	Ant. Tibialis	Post. Tibialis

5. Contraindicated – Modify or Eliminate

Any asanas that create pain should be eliminated. Any activity that moves the knee joint beyond “normal” range of motion should be modified or eliminated.

Asanas such as Hero Pose (Virasana) can be supported by bolsters or blankets between knee and thigh and/or under ankles. Sitting up on a block or small bench may help by removing the weight of the torso. Gradually over time decrease the space between knee and thigh as range of motion increases.

Advanced postures such as full Lotus Pose (Padmasana) should be eliminated. When “normal” range of motion has been reached, begin with Easy Pose (Sukasana) which doesn’t strain the knee joint and Popliteus muscle. Short periods of Half Lotus can reintroduce the range of motion requirements for this posture. It may not be appropriate for Kapha body types to do this pose at all ever again.

All poses requiring lunging such as bowling and especially moving in and out of a lunge position as in Sun Salutation (Surya Namaskar) should be modified or eliminated until supporting muscles have reached 4 – 5 on the Muscle Test Scale.

General activities that require quick response should be eliminated until muscles have full range of motion and reach 4 – 5 on the Muscle Test Scale. Activities such as Basketball, softball and football are examples of this unconscious quick motion. Also activities which require some side-to-side motion from the joint such as skating, soccer and golfing should be eliminated until recovery readings are close to “average”.

Step Aerobics should be eliminated until “average” strength and range of motion is achieved and can be done without creating signs of swelling or inflammation. Stairmaster equipment can put added stress on the joint due to the mechanical resistance. These activities can be reintroduced gradually. Individuals with a predominance of Pitta in their Dosha may try to add these activities too soon, re-traumatizing the joint and thereby, prolonging the healing process.

Squatting with weight (such as powerlifting) should be eliminated. Until the muscles have achieved full strength, the ligaments take over the role of stabilizing the joint. Ligaments attach bone to bone, are located within the joint, are more fibrous than muscle tissue and thereby do not have the flexibility of the muscles, which move the bones and stabilize the joint from the outside.

6. General Recommendations

My philosophy of using Structural Yoga Therapy in a therapeutic setting is to follow S.O.A.P. guidelines I learned in massage school and also reinforced in my SYT training with Mukunda Stiles. S = Subjective. What do they say: why they are here, what they think is going on, has there been a diagnosis, etc. O=Objective. As a neutral observer, what I see, what my intuition is telling me and what they might not be telling me. A=Assessment. Physical exam: results of range of motion, muscle strength, pain level, inflammation, etc. P=Plan. Setting goals and creating a treatment program.

Before treatment can begin, the first question is: Are they in pain? If the answer is “yes”, what is causing the pain and how do we eliminate it.

Therapeutic – Free from Pain:

Knee surgery is a trauma. It can affect muscles, bones, cell tissues, fluids and nerves. It disrupts the natural flow of energy. If there is an open wound, treat it with patience and

allow it to heal. Give it time, allow it to rest. Good nutrition will support rebuilding the tissues.

Swelling indicates the body trying to heal itself. Assist it by creating a pumping action alternating ice and heat at twenty-minute intervals.

Scar tissue is the body's Band-Aid. The fibers are layed down in a criss-cross pattern instead of the smooth side by side striations of normal tissue. This blocks blood flow and restricts movement. If scar tissue is forming or old scar tissue is present, help break this tissue down and realign the fibers with deep massage (Appendix B). Advanced Neuromuscular Therapy (Appendix C) can be used.

If pain is present, cease any activity that may be a contributing factor. Increase the blood flow by alternating ice and heat every twenty minutes. Cooling topical analgesics such as "Sombra/Sore No More" and "Biofreeze" can be used. Heating Oriental liniments such as "Por Sum On", "Wood Loc" or "Zheng Gu Shui" may be beneficial. Increasing the Hyaluronic Acid (Ref. 1.6) within the joint reduces pain and has shown an added benefit of enhancing sleep. Swedish stroking-type massage can be used to flush the tissues as metabolic waste products are produced when doing deep muscular work. On an energetic level, opening the channels and increasing movement using Reiki or Reconnective Healing (Ref. 1.7), etc. can be beneficial. Creative Visualization, used in a meditative way with the hands by visualizing them as very cold as ice and cooling the knee tissues, then fiery hot and heating the tissue, can be helpful for some.

The second step I use for treatment is to personalize a SYT program for each individual.

Stabilize the Situation:

Establish short-term goals. Use the ROM and MT Worksheet (Ref. 1.5) to determine focus of muscles to strengthen, stretch or release. Modify or eliminate any factors that may be interfering with recovery such as activities, yoga practices, diet and other lifestyle habits. Create a "realistic" Structural Yoga Therapy program that fits into current daily life. Follow through is almost more important than the program itself. If there is no commitment, there will be no benefit.

After assessing a client's needs during the first appointment, I always suggest the JFS (adapted to the individuals capabilities) as their assignment for the week. This can be adapted and is gentle enough for every individual. Everyone can benefit from it and most importantly, it shows me how committed the individual is to participate in their healing and how they follow directions and process information. It also gives me a chance to think about my ROM/MT findings, research and answer any questions I might have and consciously create a plan of action for them.

On the second appointment, if appropriate, I add a Vinyasa Series (Appendix H). I first look for what Doshas need balanced. I give Palm Tree Vinyasa focusing on breath for Vata, Warrior Vinyasa focusing on strength for Kapha and Sunbird Vinyasa focusing on stretch for Pitta. I may change this Vinyasa in subsequent appointments depending on

the individual's needs, i.e. Surya Namaskar (Sun Salutation) at a quick pace to increase Pitta in a predominantly Vata Dosha.

By the third appointment, again based on the individual, I try to add individual asanas to address specific needs. Sometimes I suggest holding the posture to strengthen or stretch certain muscles. Sometimes I suggest moving in and out of the asana to create balance between the agonist and antagonist muscles or encourage release of chronically contracted muscles.

I use subsequent appointments to track client progress and adapt the therapy program to their changing needs.

It is important to set a date for follow-up appointments before the client leaves. This affirms the client's intentions, creates a time frame and gives motivation to achieve set goals. It also states the therapist's commitment to support the process. Depending on the severity of client's condition, seeing them weekly for the first month or two helps keep them motivated and moving forward. It allows time to fine tune the practices and verify their understanding.

Once they have a program in place and are following it, meeting once a month to adapt or add practices can give them the support to continue including SYT in their healing.

Maintenance:

When full range of motion and muscle strength is achieved, I help the clients create a "realistic" maintenance program they can integrate into their everyday lives. Together, we establish long-term goals that support keeping their rehabilitated knee healthy. We address life style changes that may be necessary to prevent future injury. If we haven't already explored the other levels of healing: mental, emotional and spiritual, we determine how I might support them in these areas.

7. Questions and Answers from www.yogaforums.com

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Knees February 7, 2005

I took your SYT course at Kripalu a couple of weeks ago. I am the one who was blowing my nose the whole time. The one from Puerto Rico. I am writing first, to say thank you again. Your teaching left quite an imprint that continues to deepen in my sadhana and in my life each day. It feels beautiful. I look forward to doing the 2-year training with you.

The second thing has to do with my **knee**. At the course you only had time to check it out briefly. You told me to strengthen all my leg muscles. You said bridge reps would be helpful. I think, however, my **knee** is worse than I knew. I actually think I might have injured the meniscus. When I am standing naturally, with equal weight on both feet, my left **knee** is comfortably straight while my right **knee** is slightly bent. I had been feeling resistance to that **knee** straightening for a while. Now it requires me to really engage my

quads to get the **knee** straight and even then it feels kind of jammed. It clicks with each step I take, always. The clicking point is at about a 5 - 10 degree flexion. And there is a slight gravelly sound on extension. And, there is quite a bit of soreness near the connection to the fibula. Bummer.

I am really hoping that it isn't something that is going to require surgery. And, at the moment I have no health insurance. So, I have been spending more time with all the stuff in the JFS that strengthens the legs. I have been doing slow flowing reps of warrior poses I and II as well as bridge reps focusing on muscular contraction rather than momentum. And, I found a sequence for **knee** strengthening in Anatomy of Hatha Yoga that I have been practicing as well. Basically it consists of standing with my legs wide apart and strongly engaged while I turn my trunk right and then left and then bend forward and back on each side turn a million times. Any thoughts you might have about this would be hugely appreciated. I know you are busy and get lots of inquiries from loads of students. So, I'll be patient.

I would recommend that you go to my archive site - www.yogaforums.com and do search about knee conditions there you will find my answers to many similar complaints. Also recommend taking glucosamine chondroitin supplements which seem most helpful for connective tissue injury. I cannot say what injury is without seeing you but suggest you do vata balancing and Kapha increasing practices. First is JFS done with rhythmic breathing -- key is not too many times 6-10 is enough to get the sense of prana flowing into the joint tissue. Definitely the million times recommended in Anatomy of H. Yoga is likely to aggravate by increasing pitta. Do not do much let it heal. In second phase of healing once swelling, tenderness to touch is passed then increase Kapha by doing JFS as it says in my book for strength. Think of toning all directions of motion - adduction, abduction, flexion, extension, mildly on rotations (again I disagree with twisting torso with legs planted as in anatomy book as it can stress rotators medial and lateral sides of the knee. These motions are especially likely to aggravate the meniscus or ACL or PCL, the inner knee delicate structures.

To increase Kapha safely you should feel the specific muscles you are toning and only do one muscle per asana as in the JFS Strengthening series; holding poses only 6-10 breaths or more specifically as long as you can focus on one muscle awareness. So in bridge tone hamstrings. In Locust tone gluteals. In Virabhadrasana I tone adductors; in Virabhadrasana II tone abductors, like that then you will be safely building tone and power to immune system. Be cautious if you suspect meniscus injury. Do not be aggressive, keep sattvic attitude, not rajasic attitude I am going to heal no matter what (that creates trouble). Blessings. Mukunda



Torn Meniscus January 25, 2005

Mukunda,

Q- I am working with a woman who had surgery for a torn meniscus in Oct. About 2 mos. after the surgery she started having a pain on the lateral side of the **knee** that goes to

the calf. Now she has a baker's cyst behind the **knee**, and her doctor says that Synovial fluid leaks into the cyst. MT for sartorius, psoas, and gluteus maximus were very weak. She has had "knock" knees her whole life but with lots of hatha yoga in the last year or so she seems to be changing the alignment of her legs for the better. I think her problems probably started with her hips. Her external rotation of the hips isn't very good, and this goes along with the weak muscles mentioned above. What would you recommend? JFS for the hips? I don't know about the Baker's cyst. I do think there is always some pain when muscles are changing/realigning, but not to the degree she has had. Would you suggest some poses that would not stress the **knee** too much but strengthen the weak muscles such as bridge, stick, locust, bound ankle (maybe), Warrior I (maybe, depending on the **knee**). Also, I guess strengthening the quadriceps is almost always a good idea with a **knee** problem. Any help you can give with this will be appreciated.

A – Note that the weak muscles have in common that they are external hip rotators. Also this weakness is correlated with her range of motion being small. So you want to give plenty of variations of motions and asanas that work those muscles from mild to moderate difficulty. Definitely JFS but also modify sunbird motions to give external hip rotation motions. Modify all motions to not stress the **knee** or be weight bearing long. Give extra padding to knees and if necessary change to another position. Your ideas and directions are all good. Definitely tone the quads but also think that the entire 4 compartments (adduction, abduction, flexion and extension) of the hip need toning when there has been **knee** surgery. Give all actions in dynamic manner not static asanas, as this builds tone the safest and quickest. Namaste



Degenerating Ligaments December 20, 2004

I have found out about this forum through a friend who practices structural yoga therapy. My question might be a little off topic here, but I hope you may have some advice.

I have a friend who has been practicing ashtanga yoga for about 15 years, and has been recently diagnosed with a mild version of a connective tissue disorder called ehler's-danlos syndrome. It seems that the root of the problem is a missing protein in collagen formation which leads to extremely elastic ligaments & cartilage tissue. One manifestation is extreme flexibility, even double jointedness, which has made the practice of advanced asana fairly easy. It has also led to multiple small horizontal tears in the **knee** and shoulder ligaments. At this point, arthroscopic surgery, to knit together the ligament tears has been suggested as an option which would lead to recovery & full mobility. However, sometimes the results of such surgery may lead to other complications, and it is an invasive procedure, so I am trying to do research on any dietary, herbal & physical therapy & lifestyle changes that might be effective to slow down, stop, or even reverse some of the damage.

A vegetarian version of glucosamine has now become available, and we will try that, but any additional suggestions or references would be greatly appreciated. Namaste.

In the past few days, browsing on the internet, I came across something called prolotherapy. It supposedly helps heal arthritic joints and damaged ligaments by injecting dextrose solution into the affected area. It should be stimulating immune response strongly enough that the body actually is jump- started into rebuilding connective tissue.

I am not sure how succesful treatments are, and am doing more research - if anyone has any experience w/this pls. post

There are a few prolotherapy sites which can be easily found through google, I wouldn't post links or copy information here, as I'm not sure it is appropriate. thanks!

A - Asthanga Yoga practice is more likely to aggravate such conditions of loose ligaments due to the increased pitta that is inherent in this style of yoga. By increasing the body heat it promotes flexibility and in some cases inflammation of the joint tissues. My first recommendation is to do a gentler style of yoga such as Integral or Kripalu or Classical Hatha Yoga.

David Frawley, a Vedic scholar and author of many excellent books, wrote an article for Yoga International magazine called Hrbs for Enhancing Hatha published March/April 1996. Among the herbs cited is ashwagandha "which possesses excellent nutritive properties and strengthens the muscles, tendons, bones, and nerves, increasing ojas the primary energy of the body thus fortifying the immune system and feeding the mind." I would suggest you find an Ayurvedic herbalist trained in this field who knows how to give the appropriate dose and mixture to balance your uniqueness.
namaste mukunda

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Knee Injury Torn Meniscus August 6, 2004

Thank you for providing great answers to our questions. I have searched the Yoga Forum and did not find what I was looking for. My question is: How can a student continue a yoga practice if he is recovering from a torn miniscus? I read in some of the Forum emails something about a "joint freeing series" however I have no idea what that series is. Can you please inform me of the asanas that are relatively good for this student to do? Also, a list of big No-No asanas would be great (asanas to avoid).

I look forward to your answer. Thank you very much.
Patricia.

A - The Joint Freeing Series is a set of 22 motions I adapated from the Sivananda School of Yoga to take every joint of the body to its full range of motion (ROM), thus restoring ROM, strength and improving circulation to the deeper joint tissues. It is fully described in my book STructural Yoga Therapy. In terms of a torn meniscus, i would suspect this student has great **knee** flexion limiations prevening him from doing the full motion as shown in pg. 138 of my book. Instead he should do the motion without his arms assisting.

Also i would avoid the obvious poses that will aggravate the **knee** and do not try to stretch the **knee** back to full ROM for sometime, let healing come at its own pace. Avoid hero pose, cross leg sitting on floor - instead sit with legs extended; avoid pulling heel toward buttocks as in Dancer King, Frog, etc. Warrior poses would be good held gently and focus on toning his adductors and abductors. namaste mukunda

Knee Pain in Lunge and Others January 20, 2004

I have a new student with a history of **knee** trouble. She had torn cartilage in her left **knee** and had an operation 2 years ago. They left the tear but took out scar tissue. She has arthritis in her quad and patella. She also has "trouble" with her right **knee**. After light yoga practice both knees are sore. She is unable to put her right **knee** back in lunge because it causes her pain. Also her left **knee** hurts in extension on #4 of the joint freeing series. In #5 the left **knee** has pain when the **knee** is externally rotated. Her left **knee** has pain when it's bent in janusirshasana after 20 seconds or so. In general it seems her knees hurt when her kneecaps are pulled up. She is very motivated to have a regular asana practice. Any insight into what can be done for her knees, and what should be given/avoided in her practice in general would be most helpful thank you -- BP

A - A very challenging situation. The deeper solution might well be to do the arthritis diet (search for that topic on this site) as a 10 day cleanse to help remove ama (toxic material) from joints that are in pain. This is the more lasting solution, especially when combined with a regular Ayurveda pitta balancing diet.

As far as asanas go i would have her do cat and slowly separate the knees so one is going gradually into groin stretch cited in my book on page 164. The entire series would be better to do yet this one motion might provide some relief when the runner stretch is painful. I have been finding that students who do the entire mobilization series described here in chapter 17 that there results are superior to doing just some of the motions.

Torn Meniscus Knee Pain May 20, 2003

Q - may have torn my left meniscus, and have been unable to find good advice on whether to stabilize the **knee** and stay off of it, or continue moving and promoting circulation. I continue practice of Pavanmuktasana, though the ankle eversions are painful. After the first week, I stopped all Trikonasana and warrior poses because of ensuing pain.

I will get results of the MRI tomorrow and have engaged a chiropractor as well as an orthopedist to look at them. Do you know anything about the arthroscopic surgery? What I have researched so far leads me to believe that a torn meniscus is almost impossible to heal without the surgery, which often has people walking again within days. People I've spoken with who've tried alternatives for several years still have pain and usually wind up getting the surgical fix 2 - 5 years later. Any advice or guidance would be useful. I'm

using ice for pain, arnica topically and internally (homeopathic). Also bromelain, glucosamine, and MSM for tissue repair. You are an angel, Mukunda, and your love and knowledge are deeply appreciated. Blessings, M

A - I assume you mean a medial meniscus (cartilage) tear, as this is the most common. A lateral tear is rare. I have suffered from this too when I was a teenager and had surgery. In those days the surgery was poor and I had trouble with the **knee** for the next 5 years until I began to create what is now called Structural Yoga Therapy. These days the surgery is quite excellent and prognosis for it is excellent. I do know of students who have gone without surgery and are fine no pain. I cannot give recommendations without knowing more -- which meniscus is torn? I assume medial, as eversion would be most likely to cause pain. Main recommendation is do only the joint freeing series, nothing more. All other products you are using sound like a good idea. If you were here I would also do bodywork with a product from Dr. Christopher's Natures Way called BF & S liniment. This is only sold through practitioners but it is excellent for healing connective tissue. There was a formula of the herbs in capsule form but I believe that is no longer available.



Knee Replacement March 21,2003

I have an 84 year old women in a weekly yoga class that has had **knee** replacement surgery in both knees, about seven years ago. She is energetic, fit, strong, flexible and very aware of her limitations. She has been a great teacher for me ! I would appreciate any suggestions you can offer that would allow me to offer her something new to her practice. She has 45o bend at the knees, and above average mobility of the hip.

Transition from poses offers a challenge for her, specifically moving form the floor to standing and vice versa. We make use of a chair for Child pose and as a prop for other standing poses. I think any suggestion your could offer that would take her practice to a new place would be beneficial.

Regards

A - I think this student has done a great job with maintaining her body. Keeping the hip joint flexible is a tremendous factor for stabilizing the knees and the lower back. I would suggest that you focus her attention on strengthening her hip flexor muscles. Those are the psoas, rectus femoris and also include the adductors. I would suggest Warrior II, bridge (standard and knees squeezing together), chair pose (Utkatasana), and dynamic runner or lunge pose (SYT pg. 162) in which you inhale and raise pelvis then exhale and lower the pelvis repeatedly to both tone and release the hip flexors (if necessary weight can be held by a chair to facilitate this without stress on the forward **knee**). best wishes mukunda



Knee Injury January 11, 2003

Hello Mukunda... Thank you again for making yourself so accessible for inquiry... I have a student, young male about 30 or so, who just underwent a medial meniscotomy.... about 10% of a flapping piece of meniscus/cartilage removed using arthroscopic surgery...the surgery happened on Wednesday, October 23rd and he has now been back practicing for one week. He feels gluteus react. What he finds helps the **knee** is to stretch the muscle chain from the minimus, to the IT band. The initial injury occurred about two years ago while in India attempting janusirsanasa ...he has already underwent surgery for it...any suggestions on helpful hip openers or whatever else would be most helpful. Thank you again ... namaste d

D - It is not clear from your writing what he feels in his body. This is always important starting point with making personalized recommendations. Know and understand anatomically what they feel and make sense of what helps and what doesn't. Surgery for medial meniscus is often a sign of tightness in the lateral thigh especially at the IT band of the tensor fascia latae. Optimal is to check for normal range of motion of internal and external hip rotation. Lacking this openness at the hip rotators causes stress and pulling in the connective tissues at the **knee**. In general this is hip abduction strength and hip abduction stretches -- poses that do this are the closed hip standing poses of Virabhadrasana I and Parsvottanasana; Gomukhasana -- face of light/cow; and Parivritta janusirsanasa. The aim is to generate the specific feelings described above in those poses. If the poses do not generate these feelings then variations must be used. The concept is to adapt the poses to the student not the other way around. Namaste Mukunda

Knee Problem April 26, 2002

I am in need of advice about a problem i have with my left **knee**. It would seem that i have some damage to the medial collateral ligament, I have pain after sitting for any time and especially walking down hill .My yoga practice is 2years old and is Ashtanga 5 times a week The **knee** injury is 3 months old and has not stopped my practice but i do exercise extreme care and avoid any of the straining **knee** bends. Am i wise to continue with care or should i rest it completely, alternatively maybe you could recommend some remedial asanas yours sincerely john

A - John, from the sound of your **knee** I wonder if you are experiencing any inflammation or swelling during the painful episodes you report. If so I would recommend that you do a lighter practice emphasizing circulatory and lymphatic enhancing movements. One example of this is my Joint Freeing Series described in Structural Yoga Therapy book and charts. Another suggestion is to hold poses emphasizing upon feeling the tone of your adductors in addition to quadriceps. The more rapid paced Ashtanga series could be irritating your medial collateral ligament. These quick movements increase pitta and thus in your case can increase the likelihood of inflammation and irritation to this injury. Doing fewer poses that focus on the muscle tone mentioned may be more therapeutic. Some suggestions are Warrior I and II, Utkatasana (chair), bridge (Setubandhasana) with different widths of the thighs and feet including together. For more details refer to a series of articles on Yoga Therapy for

knees and shoulders that I wrote, reprints are available either from Yoga International or me.

Lunge Stretch April 26, 2002

Dr Stark also writes that it is risky to put the **knee** on the ground for any type of lunge stretch, which is one of the main components of sun salutations. He says that loading the quadriceps while the **knee** is on the ground puts traction on the patella tendon, compresses the kneecap and femur, causing damage to the articular cartilage of kneecap and femur. Are his fears founded or is he being too cautious?

A -- I would say he is too cautious. First of all I always consider hearing student's feedback first. The physical Yoga training is primarily for increasing student's sensitivity to their body so they can listen and heed the messages that it gives. So to me if the student does not react to the sensitivity at the **knee** there is no problem for the teacher to be concerned with. Provided the teacher has established a rapport encouraging the student to tell them when they experience discomfort or uncertain sensations.

However let us consider his point. The kneecap is located above the **knee** joint. The Patellar tendon extends above and below the kneecap. Most students will be weight bearing on the kneecap, some below it. Most students will be taught to do the movement on the top of the foot as they give their body weight to the motion, it will be distributed primarily into the **knee** joint and shin. If the pose is done with the toes forward then the foot and ankle will be weight bearing and thus take some strain out of the **knee** joint. So this modification can alleviate some of his concerns for students who experience strain in the motion.

Click in Knee April 26, 2002

This question is for myself. I'm 44, in good health, and have been engaged in Hatha Yoga for over 20 years. This year I've noticed my left **knee** has begun to click when I bend the joint. There is no pain whatsoever, it is simply a matter of the sound which when I'm teaching and I bend down to adjust someone in Savasana, for example, an audible click resounds through the silent room. Just a bit distracting! Is this part of the aging process and what can I do about it? It seems to originate from behind the patella.

A - It is common to have creaky joints starting in the 40s, even for those with a long history of yoga practice. I find that two scenarios can help one is to lay off asanas for a few days or up to a week and do pranayama and meditation only. The other is to do only the joint freeing series without any asanas for a week. The situation is often due to overuse of the joint. As the **knee** is the largest joint in the body it is usually the first to

show signs of wear. Taking supplements of chondroitin and glucosamine mixed can rebuild connective tissue.

8. References

Ref 1.1 Dr. Lawrence Kohan, M.B. B.S., F.R.A.C.S., F.A., ORTH.A.
www.jointreconstruction.com

Ref 1.2 Ken Dykwald Bodymind

Ref 1.3 Louise Hay You Can Heal Your Life

Ref 1.4 Karol Truman Feelings Buried Alive Never Die

Ref 1.5 Mukunda Stiles Structural Yoga Therapy (Muscle Testing Techniques and Averages for Range of Motion and Muscle Strength Tests, Joint Freeing Series), also Class Notes from Structural Yoga Therapy Certification Program (Vinyasa Series) and website www.yogaforums.com

Ref 1.6 Chi Machine, Sends Infrasonic Sound Waves into tissues, increasing Hyaluronic Acid supporting cell tissue healing, reduces pain and inflammation. www.chi.us

Ref 1.7 Dr. Eric Pearl, (See Appendix E for description of Reconnective Healing) The Reconnection www.thereconnection.com

9. Appendix

A. Behavioral Kinesiology

This type of Kinesiology uses muscle testing to identify the root cause of an issue. Details of the core-triggering event are brought to the surface and through a Resolution Integration Process, released. Developed by Sue Myers, Breakthru Institute. www.breakthruinstitute.com

B. Massage Therapy

Swedish and Deep Tissue Massage using petrissage, efflorage, tapotement and pressure point therapy to relax and release muscular tension, Colorado School of Healing Arts. www.csha.net

C. Advanced Neuromuscular Massage Therapy

This is a deep, specific technique used to treat injury, chronic pain and release trigger points. Trigger points develop in knotted muscle tissue. They refer pain to other tissues and organs. They do not follow recognized neurological pathways. Using implements called tbars, ice,

heat and oriental liniments; muscle knots and trigger points are released. Developed By Peggy Daugherty, Orion Institute. www.orioninstitute.com

D. Lightwork Meditation

A meditation practice using specific sequential procedures to capture the mind's attention and gradually release thoughts and projections. Three probationary levels address the physical body, the perceptual/emotional body and the mental body. Advanced studies include Planetary Healing and Angelic Realm Studies. Developed by Antoinette Moltzan. Classes available through Alpenglow Center. www.alpenglowcenter.com

E. Reconnective Healing and The Reconnection

A non-invasive energy technique which reconnects individual's meridian lines to the planetary meridian lines, producing deep relaxation and connection to one's highest potential. Developed by Eric Pearl. www.thereconnection.com

F. Chi Machine

Non-invasive therapy using infrasonic signals which randomly deliver frequencies to the body. Safe, won't burn tissues (lower frequency than ultrasound). Controlled case studies show reduction in inflammation, increase in production of Hyaluronic Acid, reduction in enzymes associated with pain and muscle damage. Noticeably softens scar tissue, reduces stress response and improves sleep. www.chi.us

G. Pancha Karma Techniques (Baba Hari Dass)

Deep cleansing Ayurvedic/Yogic techniques taught by Dr. Sarasvati Buhrman at Rocky Mountain Institute of Yoga and Ayurveda. Carrie Searles, Practitioner: email - Carrie@yogarific.net

H. Structural Yoga Therapy

Yoga therapy adapted to an individual's needs to address and relieve musculoskeletal imbalances and eliminate pain. This therapy integrates "Iyengar's precise asana work, Ayurvedic studies in balancing pranic doshas, spiritual training in Kundalini and Siddha Yoga with Swami Muktananda and devotional Bhakti Yoga with Swami Prakashananda and Ammachi". Developed by Mukunda Stiles. www.yogatherapycenter.org

I. NatureAll-STF Supplements 1-800-421-5443