Rotator Cuff Injury

Understanding and Healing Rotator Cuff Injury with Structural Yoga Therapy

A research paper
by

Vimala Ren Fields
Fredericksburg, Virginia
ren4yoga @aol.com
www.healingartsyoga.com
540.371.4555

With gratitude to my teacher Mukunda Stiles

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UNDERSTANDING AND HEALING SHOULDER ROTATOR CUFF INJURY WITH STRUCTURAL YOGA THERAPY

Vimala Ren Fields

I. CASE STUDY

IA) INITIAL INTAKE

Sally is 52 years old, a homemaker, wife and mother of two teenaged sons. She works part-time as a rehabilitation group facilitator for alcohol/drug education for DUI offenders. Her other activities include walking and exercise biking. She used to enjoy knitting and quilting. She hasn't for several years due in part to her shoulder and neck but mostly due to time constraints. She is intelligent, well educated and a disciplined person. She reads a great deal and enjoys gardening in her leisure time.

Sally has attended beginner yoga classes with me off and on since 1996. My hatha yoga teaching style is a blend of extensive physical therapy, dance, integral, acu-yoga and ashtanga yoga training. Since 2005 I began melding the structural yoga therapy principles into my teaching style.Sally has been in some degree of pain for the past seven years. In the winter of 1999 Sally had a Skiing accident. Using her right hand outstretched to catch herself, she fell full force onto her right hand and then onto her shoulder. The pain was immediate and severe in the arm and shoulder. On a scale of 1-10, with 10 being unbearable pain, she listed her pain level at 7. She rested it for several days and finally went to the doctor when the pain, soreness and stiffness did not subside. The doctor suspected a "sprain" and suggested anti-inflammatory medication. Sally took medication for quite a while until it subsided enough to be functional (she could not recall how long, perhaps 3 or 4 months).

In the fall of 2004, she re-injured it on a weight machine. Her diagnosis from her orthopedic was told that she had a rotator cuff injury / possibly a tear. After X-rays that were not conclusive and three months of physical therapy she was suffering increasing discomfort. Her doctor suggested possible surgery. She was fearful and did not go back. In 2005 she went for 2 visits to an Osteopath 1 ½ hours away from her home. The doctor suggested that she come for visits and swim regularly. And although there was some relief from the manipulation treatment, Sally did not feel that the small relief warranted the one hour trip each way so she stopped going. She did not begin swimming because she doesn't like it. She curled up her face when talking about swimming and being cold, wet, chlorine in her eyes and the damage on her hair. Her psychological makeup seemed to be part lethargy and part mistrust and fear of the medical diagnosis and treatment methods being promoted. She didn't pursue with energy or follow up sometimes on seemingly helpful and promising suggestions. This had been her nature and was aggravated by what she admitted as the injury and then the long time struggle with the injury and resignation due to her ongoing but unsuccessful recovery efforts.

On our first visit, her pain level is a 4. She is very stiff in the shoulder and experiences a feeling of looseness in the shoulder socket. She is always careful because the shoulder felt as if it would fall out of the socket if she did something difficult or quick. She has not returned to skiing since the accident. She shrugged her shoulders and gave a half grin saying, "If I go back, it will probably not be downhill … maybe cross country…" Sally had not seen any doctors or had therapy for almost a year. I encouraged Sally to visit a medical doctor and even possibly get an MRI so that we could start with some definitive diagnosis. She could once again try exercises prescribed by a medical doctor for an "injured" rotator cuff. However, she was completely reluctant to see anyone except the Osteopath at some point later. For now, she just wanted to do the SYT with me and see how it went.

We had 7 appointments over a 10 week period. She felt generally weak all over her body. I feel that timing is a critical aspect if therapy is going to be successful. She expressed, for some reason not known to her, being "ready to work to resolve her issues." She had been resigned and lethargic about everything. Now, she was a committed and motivated client, meeting with me regularly, practicing her

therapy curriculum almost daily and attending a beginner yoga class once a week. During that time, she was not being supervised by anyone else for therapy of any kind. The project gave her hope, resolved most of the pain and she regained strength and mobility in her shoulder. She displayed more energy overall. The SYT program was very effective, accomplishing all of her goals and in less time than anticipated.

IB) PHYSICAL ASSESSMENT:

Body reading: January 31, 2006

In the initial body reading, her right shoulder was noticeably lower than the left. The humerus bone of both arms rotated internally in the shoulder socket giving the appearance of rounded shoulders. This was more severe on the right side than the left. Her palms faced backward (usually indicating a weakness in the teres minor and infraspinatus). On observing the posterior side of her body, the right scapula was retracted and the left scapula was protracted (winged). Her hip was slightly shifted to the left and the left foot turned out about 25 degrees more than the right. The right tilt in the shoulders, right retracted scapula, left protracted scapula gave the appearance of scoliosis with a left C curve in the 1st to 6th thoracic vertebrae.

TABLE I: MUSCLE TEST FINDINGS:

Muscle Testing Assessments						
Joint Action	**1st Date**	**1st Date**	**2nd Date**	**2nd Date**	**3rd Date**	**3rd Date**
	Left, 1-5	Right, 1-5	Left, 1-5	Right, 1-5	Left, 1-5	Right, 1-5
NECK						
Extension	2		4		5	
Flexion	3.5		5		5	
Lateral Flexion	2.5	3	3	3	3.5	3.5
Rotation	3.5	3	4	4	4	4
SHOULDER						
Abduction	4	5	4	4	4	4
Adduction	4.2				4	3.5
External Rotation	5	2	5	3	5	3.5
Internal Rotation	4	2	4	4	4	4
Flexion	3	2	4	4	5.4	4
Extension	5	5	5	5	5	5
SPINAL MUSCLES						
Low Erector Spinae	4		3		3.5	
Upper Erector Spinae	3		4		4.5	
Quadrat Lumborum	4	2	4	3	3.5	4

TABLE II: RANGE OF MOTION FINDINGS:

Range of Motion Assessments							
Joint Action	**ROM**	**1st Date**	**1st Date**	**2nd Date**	**2nd Date**	**3rd Date**	**3rd Date**
	Norm°	Left	Right	Left	Right	Left	Right
NECK							
Extension	55°			57		57	
Flexion	45°						

Lateral Flexion	45°	40	46	40	46	42	45
Rotation	70°	70	45	70	65	71	66
SHOULDER							
Abduction	40°	40	18	40	22	35	25
Adduction	130°	110	105	111	108	129	130
External Rotation	90°	100	80	100	84	101	89
Internal Rotation	80°	100	80	100	75	98	78
Flexion	180°	180	146	180	165	179	173
Extension	50°					60	57
SPINAL MUSCLES							
Low Erector Spinae							
Upper Erector Spinae							
Quadrat Lumborum							

IC) SUMMARY OF FINDINGS

Table II is general table reflecting what was tight and weak, what needed strengthening and stretching and all the SYT postures that would possibly be used to bring her situation back into balance. As a result of the first session assessments, I compared the initial information with Table 3 (Muscular Imbalances Revealed by Posture) <p 103>, Table 5 (The Kinesiology of Yogasanas) <p 254>, Table 6 (Structural Yoga Therapy Recommendations for Postural Imbalances) <p266>, Chart 1-4 (Structural Yoga Kinesiology) <pp 250-253> and Chart 1-2 (Joint Freeing Series: Pavanmuktasana) <pp132,133> <8>. The yoga postures that satisfied more than one aspect of strengthening or stretching for Sally's program are in italics.

TABLE II: ANALYSIS SUMMARY CHART :

POSTURAL Imbalance	(ROM Test-Tight)	[MUSCLE Test-Weak]	Needs to Strengthen (Kapha)	Needs to Stretch (Pitta)	All Possible SYT Posture Recommendations *** See statement below
NECK					
L Tilted head	(Neck Rot – R)	[Neck Lat Flex - R]	(L [R] SCM, R upper trapezius)	L SCM, L upper trapezius	**Strengthen:** *R S twist, L Triangle, Camel, Cobra, Locust* **Stretch:** *Twisting poses*
		[Neck Extension]	[upper trapezius]		**Strengthen:** *Camel, Cobra, Locust* **Stretch:** *Bridge*
SHOULDER / SCAPULA					
Round shoulders *worse on R			Lower & middle trapezius, latissimus dorsi	Pectorals, serratus anterior	**Strengthen:** *Bridge, Camel, Cat Bows, S Twist* **Stretch**: Down Dog, *Cobra, Camel, S Twist*
L High shoulder			Lower trapezius, latissimus, pectoralis sternal	L Upper trapezius, levator scapula	**Strengthen:** *Bridge, Camel*, *Cat Bows, S Twist* **Stretch:** *Cobra, Camel, Bridge*
Palms turned back (internal rotation of	(Tight R Shoulder Ext. Rot &	[R shoulder ext rotators weak]	(post delt, infrasinatus, [teres minor],	Ant delt, pectoralis major,	**Strengthen:** *Cobra, Camel, Bow, Supported Shoulder Stand (SS Stand)*

shoulders)	Horz Abd)		triceps brachii-long head)	latissimus, teres major	**Stretch:** *Camel, Cobra, D Dog, S Twist, Face of Light*, *Energy Freeing*, Ab Twist West Back Stretch
	(Loose L shoulder ext. rot)	[R weak shoulder int rot]	Ant delt, pect maj, latissimus, teres major	(post delt, infrasinatus, [teres minor], *triceps brachii*-long head)	**Strengthen:** Tree, *D Dog*, Eagle, Stick, *Energy Freeing*, *S Twist, Camel, Cobra, S Stand* **Stretch:** *D Dog, Face of Lt, S Twist*
L winged scapula		Mid trap weak	Middle trapezius, rhomboids	Serratus anterior, pectorals, anterior deltoid	**Strengthen:** *Bridge, Camel*, *Cobra, Cat Bows, S Twist* **Stretch:** *Cobra, Camel, S Twist, D Dog, Stick, Plow*
	(Tight R Shoulder flexion)	[R Shoulder flexors & adductors weak]	*([ant]*/mid *delt,* [pec] major, coraco brachial-clav head, [*biceps brachii**]*-short head)		Strengthen: *Tree, D Dog, Eagle, Triangle,* Warr II, *Stick, Energy Freeing, S Twist, Cobra, Stick, S S Stand*
SPINE					
Lumbar spine		[R weak quadratus lumborum]	[R QL]		Strengthen: *L Triangle*
ELBOW					
		[R elbow flexion weak	*[biceps brachii]*		**Strengthen:** *Cobra, Stick, S S Stand*
		[R elbow ext weak]	*[triceps brachii]*		**Strengthen:** *Camel, D Dog*
HIP					
L foot turned outward			L tensor fascia lata (TFL), L gluteus minimus	L psoas, external hip rotators, sartorius, gluteus maximus	**Strengthen**: *Energy Freeing*, L Side Angle, L Spread Leg, *Tree, Triangle, Locust* **Stretch:** *Camel, Bow, Side of Hip, Eagle, Face of Light, Energy Freeing,* Westside Back St, Squat

Over a 10 week program, there were three assessment dates. These assessments included tests in Range of Motion (ROM) of the joints, measured in degrees on the goniometer and Muscle Testing (MT), rendered in a comparative, subjective measurement scale of 1-5 (1 being absolutely no ability to resist and 5 being the strongest possible for that muscle). The results were first recorded on SYT Examination Record Forms designed by Mukunda Stiles. For reference, in parenthesis following the action, is the average ROM where applicable. Also, each test was done on the left (L) side and the right (R) side where applicable. Assume all readings not shown to be normal.

*** I did not give all these postures, but used only the ones which best suited all her needs (SEE Table III). The postures were given with instruction of 'primary focus' on the strength of the active muscle (agonist) allowing the opposing side to let go or stretch (antagonist). She needed to focus on both. Because her habit was to engage the wrong muscle in her neck and shoulder movements, I felt that the training both physically and mentally of disengaging the muscle that needed to be stretched and

engaging the muscle that needed to be strengthened would teach her awareness on a physical level and accomplish the goals of respective strengthening and stretching the muscles. Sally had a very deep rooted lethargy about her body and movement. By addressing awareness on a physical plane, the grosser level, she would begin to open to awareness on the subtler planes of the mental, emotional and spiritual.

ID) INITIAL INTAKE:

01/31/06: INITIAL SESSION

In the initial session, due to time constraints, I just let her "tell her story." She seemed to respond well to talking about everything … having someone actually listen to all that was going on. Her face was lighter and her walk a little more confident. It was healing for her.

Initial body reading was done at this time as well.

Since she was taking classes I mentioned to her that until we had addressed the issue through SYT she should concentrate …"on slow, methodical movements to build strength. (She should) take extra care with poses that are asymmetrical and weight bearing … or that require exaggerated inward rotation of the upper arm, which thrusts the ball of the joint forward … (and that we would probably use) a mix of poses to strengthen all sides of the rotator cuff evenly …" <4a - p 94>

02/07/06: RECOMMENDATIONS FROM INITIAL INTAKE

On the second visit, a complete diagnostic intake was done including range of motion and muscle testing (see TABLE I for results). However, as noted on Table 1, there was pain on certain movements with her right shoulder (flexion, external and internal rotation) and neck rotation to the right. This affected the accuracy of the reading. Also, because of the apparent 5^{o} Left Thoracic spinal curvature, I decided to test (and challenge) her spinal muscle strength in addition to the shoulder.

I reviewed the results of the body reading and the test findings with Sally. She responded well to intellectually understanding the findings and the recommendations. She said that no one had ever explained any of this to her in the past. In Structural Yoga Therapy, communication is the key. Give the client all the time they need to communicate with the structural yoga therapist … communicate to the client what is observed and perceived, on a physical, mental and emotional level … communicate how the work will proceed … and most importantly by working with this open communication the path is cleared for the client to see, hear and perceive the internal dialogue between their body, mind and spirit.

She has only done asana classes and is not experienced in the full spectrum of the yoga experience. So I also explained how we would be working in terms of the following list, which is my own compiled, "Ten Commandments of Yoga." We discussed them verbally and I gave her a written copy. Each time we worked together, I repeated 3 or 4 of the principles in the context of our work.

1. Stira, sukham asanam: Being fully present to our own stability and softness. "No pain, no pain" is the motto. Maintain "energy not tension" throughout the practice. As it is written in the Yoga Sutras Book II:46, … keep a "steadfast and comfortable position."

2. Viyoga samyoga: Unlink to that which is harmful and link to that which is positive and healthy. (i.e: When raising the arm forward in flexion, stop / disengage her typical habit of using the neck muscles to lift the shoulder up and bring the arm forward. Begin the movement by engaging the anterior deltoid instead.)

3. Breathe: Use the breath to keep the relationship between the mind / body consciously connected.

4. Strengthen the weak muscles.

5. That works in congruence to stretch the tight muscles.

6. That works in congruence to re-pattern the connective tissue.

7. Dynamic movement creates a new pattern in the cells. <10>

8. Holding in stillness sets the new pattern in the cells. <10>

9. Awareness: We are more than the sum of our parts. Pay attention to the physical, yes. But also be aware and nourish the emotional, mental and spiritual needs as they arise.

10. Revisit the body / mind on a regular basis in order to unlink from undesirable habits that develop - opportunity for continual re-patterning.

My intension was to spend the first few weeks using the 24 postures from the Kinesiology charts 1-4 and Joint Freeing Series alone. Then I would gradually introduce alternative connections such as breathwork, meditation, lifestyle changes, etc., using the kosha and ayurvedic principles as explained in section 3.

Even in postures that are not specifically for strengthening a certain muscle, Sally was to focus on her "target muscles to be strengthened." For example, in triangle to the left, which strengthens the left SCM and middle deltoids, she focused on the right posterior deltoid as well. This is a 'secondary focus', was not introduced to her until we had been working on the postures for several weeks and is referred to in the TABLES with an asterik (*). I felt she needed the challenge. Her response on all planes was very positive.

IE) SUMMARY OF RECOMMENDATIONS:

02/14/06: Third visit

I explained what was weak and what was tight. I showed her on her body, let her feel and play with the discovery of the different muscles and how they contract to move the arm. We talked about how we were going to approach each area that needed strengthening or stretching or both. She had, in the past, performed her yoga with great care, afraid to really stretch or to challenge the strength of the shoulder in any way. Her energy in the poses was restricted and guarded. I would refine the concepts as she progressed and encourage more energy and confidence. Sally is a thought-full, educated person. My feeling was that she would respond well to a complete understanding of what was going on with her shoulder and what she would be doing in response to that. She seemed to respond well to the process.

The evidence was clear that her right shoulder in general needed more strengthening work than the left. We also had the pain issue to consider (present level = 4). Dynamic movement was more comfortable for her. We decided that she would do each posture dynamically 6 breaths and then hold 6 breaths (making the movements smaller and/or dropping the repetitions and holding to 3 if there was <u>any</u> pain). She would do them on the right side, left side and then right side again. If she became fatigued or her time was limited, she could do a few in the morning and the rest in the evening.

I gave her a set of 9 postures (see chart below). The first posture, the tree, could be a tall mountain or a warrior I on her choosing. It was about attention to the raising of the arms forward and up using the

correct muscles. She would continue to attend her regular yoga class once a week. She would do the 9 postures 4 days per week for the next 3 weeks.

TABLE III: ASANA PROGRAM RECOMMENDATION 1: 02/14/06

The order should be JFS variations first then asana in the order of the 24 pose sequence. Sally wanted "yoga." I felt she would not respond well mentally to the JFS up front, so I started her out with postures and added the JFS in the 4th session for "extra attention" to the problem areas.

Posture	Strengthen	Stretch	To Address
1) Tree (Vrksasana)	Anterior Deltoid	(lengthen the spine)	
2) Warrior II (Virabhadrasana)	Middle Deltoid		
3) Cat Bow	Middle Trapezius		
4) Bridge (Setubandhasana)	Middle & Lower Trapezius	Pectorals	* L winged scapula & round shoulders
5) Energy Freeing (Apanasana)	Latissimus Dorsi		
6) Stick (Dandasana)		Anterior Deltoid	
7) Spinal Twist to right (Marichyasana) (do both sides)	Left SCM (Sternocleidomastoid), Left Latissimus Dorsi, Lower Trapezius	Teres Major, Serratus Anterior, Left Gluteus Maximus	* L high shoulder, round shoulders, L tilted head, Left foot turns outward
8) Cobra w head flex & ext (Bhujangasana)	Upper Trapezius, Posterior Deltoid, Rhomboids	Pectorals, Serratus Anterior	* L winged scapula
9) Face of Light-right arm up (Gomukhasana)	Lower Trapezius	Right Posterior Deltoid, left Anterior Deltoid, Triceps, Teres Major	
10) Corpse (Savasana)			

03/07/06: Fourth visit

Sally was very excited. She had been doing so well that she went to a yoga workshop in Virginia and actually over did it a little. Still she reported her pain level had dropped (3) and she felt a bit stronger. I gave her 4 more postures and some of the JFS (see chart below) to add to her curriculum. In light of her perhaps over zealous response to the SYT program, I encouraged her to modify the postures according to her "inner teacher" and her time. Due to the addition to the curriculum, I told her to spread them out to accomplish each one in two days instead of trying to do them all each day.

TABLE IV: ASANA PROGRAM RECOMMENDATION 2

Posture	Strengthen	Stretch	Address
1. Extended Triangle to left (Utthita Trikonasana)	left SCM, Middle Deltoid, * right Posterior Deltoid	Right Quadratus Lumborum	L high shoulder * L tilted head
2) Camel (Ustrasana)	SCM, Posterior Deltoid, Rhomboids NECK	Anterior Deltoid, Quadriceps, Serratus Anterior	
3) Downward Facing Dog (Adho Mukha Svanasana)	Deltoid	Pectorals, Erector Spinae	Round shoulders
Joint Freeing Series			
13) Shoulder Abd / Add			
19) Neck Extension / Flexion			

20) Neck Lateral Flexion			
21) Neck Rotation			

She mentioned she wanted to get off advil. Though she had not been on prescribed medication since the initial few months after her accident, she had slowly over time built up her use of advil to 1-3 times per day, to relieve her pain and discomfort. She was now using advil only once or twice a week to manage the pain. I suggested that continued practice of her structural yoga therapy would get her out of pain eventually.

03/14/06: Fifth visit

5 weeks after the first assessment, I did a mid-term re-assessment (see TABLE I for results). The results were very good. Her strength had gone up 1 to 3 points everywhere and her flexibility had increased in some cases (shoulder flexion) 19 degrees.

We reviewed the postures and refined some of the movements a bit more in terms of focus on where to strengthen and where to stretch.

03/21/06: Sixth visit

This session was almost all discussion. I asked her about the looseness in her shoulder socket. She reported, after slight hesitation, that the looseness was … "just not there anymore." She rotated her right arm around confidently and with surprise.

She reported that she felt stronger every day and her pain was now at 0 except occasionally when her arm was motionless for a long period of time (such as sleeping). She was off advil. This is significant because it means there has been true transformation in the nature of her pain. In the beginning of our study, Sally felt pain more and more with use of the arm. Now, she is reporting that the 'cause and effect' has literally reversed. Now, she did not experience pain with activity but rather, felt only marginal pain with non-activity.

Here I began to introduce to her the ides of the ayurvedic doshas and the koshas. (see Section 3).

04/11/06: Seventh visit

On the seventh and final visit, 10 weeks after the start date, I did a final re-assessment (see TABLE I for results). I also did a final body reading. Her strength and flexibility had continued to improve gradually. I had her do postures she had any questions about and asked her to continue her program with the refinements we made.

I took Sally's final statements as to her perception of how the case study went. Her face lit up and she raised her arm completely over her head … it was great. Her pain level was still 0 and she hardly ever noticed pain even when she slept or was still for long periods. She was able to reach for things in the top cupboard in the kitchen. She was thinking about painting the bedroom. I encouraged her to paint for half hour and wait until the next day … then an hour … etc, checking in with her body as she went. I explained to her that painting was probably her master test of the biggest offender – lack of awareness. She could do it as an exercise in awareness and restraint!

I had emphasized to Sally all along, particularly in class, that she could perform any of the postures with her primary and secondary focus. I gave her complete Charts 1-4 of the Structural Yoga Kinesiology <8 – pp 250-253> and Charts 1-2 of the Joint Freeing Series <8 – pp 132,133>. We discussed a few of the ones we had not done in the study. I still felt she needed instruction on how to be self-aware and focus on learning to perceive tightness or weakness. To help accomplish this, I asked her to, before doing each posture, pause and take a breath. This would get her in a self-awareness habit with her yoga.

For a long while she may need to continue to focus on keeping the rotator cuff in balance. If she did not focus on her shoulder for a while and the pain began to return, she could resume her 'structural therapy postures.' I explained to her that all the poses are a well-balanced program but that she could do just one of the charts as one practice session per day. She may eventually have to skip a day here and there. That would be fine. Her body would tell her how 'much' she needed.

FINAL SUMMARY:

There were a total of 7 appointments in 10 weeks. The initial visit was on January 31, 2006 and the final visit was on April 11, 2006.

In the initial body reading, Sally's left shoulder was noticibly higher than the right. This indicates that the upper trapezius and levator scapula was tighter on the left side and the lower trapezius, latissimus and pectoralis sternal were weaker on the left side OR … A left thoracic curve measuring 5 on the scoliometer may be caused by or the cause of the muscular imbalance. Both arms were internally rotated and the palms faced backward but the right arm was much more internally rotated than the left. This indicates that the right teres minor and infraspinatus were weak on both sides but weaker on the right than the left and the pectoralis, latissimus and teres major were tight on both sides but tighter on the right than the left. The left shoulder blade protruded (winged) and the right shoulder blade was sunken. This indicates tight serratus anterior, pectorals and anterior deltoid and weak middle trapezius and rhomboids.

In the last body reading, Sally looked quite different. Her palms faced each other rather than being rotated backward. Her left foot had straightened out to match the right, even though we did nothing directly to address that. The shoulders rolled forward much less than before. The right scapula (which was severely retracted into the body) was beginning to protract back into the right position. The left shoulder (which had been severely protracted) was beginning to retract back into the correct position. On standing, in the beginning, Sally appeared to have a left thoracic curve. In the tenth week, measuring her spine with a scoliometer revealed a 3 degree left thoracic curve. Since the measurement had lessened by 2 degrees, I assume the curvature to be a functional scoliosis, perhaps brought on by the accident and subsequent 7 years of her body accommodating to the injury. If it is functional as opposed to structural, she is on her way to reversing it.

Throughout the 10-week case study period, I was able to work with Sally during her regular classes as well, refining her attention to details and enhancing her progress. I will keep doing that but she would see me occasionally for a private session as the need arises.

We discussed a few of the ones we had not done in the study. I still felt she needed instruction on how to be "aware" and focus on any perceived tightness or weakness. I asked her to pause before doing each posture and take a breath as a check-in divining tool. For a long while she may need to continue to focus on keeping the rotator cuff in balance. If she did not focus on her shoulder for a while and the pain began to return, she could resume her 'therapy postures.' I explained to her that all the poses are a well-balanced program but that she could do just one of the charts as one practice session per day. She may eventually have to skip a day here and there. That would be fine. Her body would tell her how 'much' she needed.

Sally told me that she had a friend ask her, at the beginning of our sessions, if she wasn't afraid to have me working with her … that she could get hurt. Sally responded to her friend by telling her that she trusted her yoga teacher completely and that she was looking forward to getting completely better. She also told her friend that she never would have started something this serious without that complete trust. Both of us held a commitment to each other. It is no surprise that she did so very well.

2A: NAME & DESCRIPTION OF CONDITION

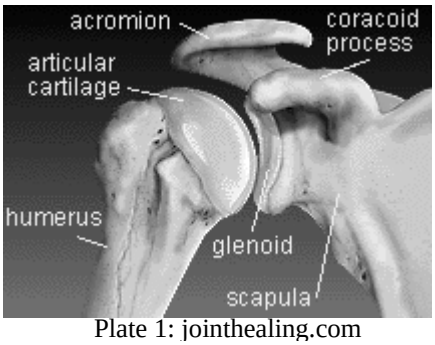


Plate 1: jointhealing.com

OVERVIEW OF THE SHOULDER

The shoulder is a ball and socket joint like the hip. However, the shoulder is more like an 'agreement' than a joint. Because the socket is very shallow, the shoulder is the most flexible and the most unstable, vulnerable joint in the body.

The ball is the head of the humerus and the socket is the glenoid capsule. This is often the location where arthritis can form. On top of this ball and socket joint is another bone known as the acromion. This is the most vulnerable location for tendonitis to form. At the acromion is the "acromioclavicular joint" (AC joint). 'Looseness' and shoulder separations tend to occur here. <1>

"With its inherent instability, the shoulder is very dependent on its soft tissues to help hold the joint together. These soft tissues include ligaments, which join bone to bone; tendons, which attach muscle to bone; and the muscles themselves, which both move and stabilize the bones. Of particular importance in stabilizing the shoulder is the rotator cuff. <4> The "rotator cuff" includes those muscles around the scapula that produce abduction, adduction and lateral, internal and external rotation of the humerus bone.

Above the rotator cuff is a bony projection from the scapula (shoulder blade) called the acromion. The acromion forms the "ceiling" of the shoulder, serves as the point of origin for the deltoid muscle, and joins the clavicle (collarbone) to form the acromioclavicular (a/c) joint. Between the rotator cuff tendons and the acromion is a protective fluid-filled sack called a "bursa". With normal humeral elevation there is some contact between the rotator cuff, the bursa, and the acromion. <3>

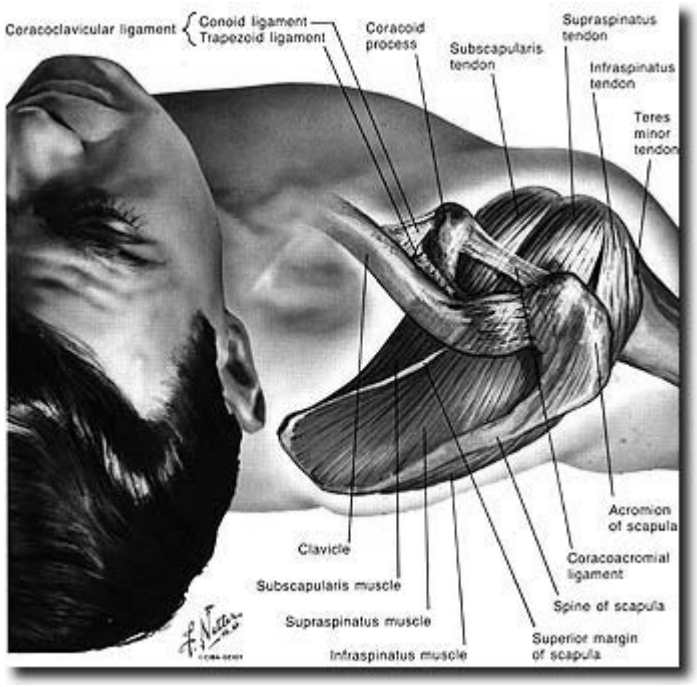
There are several ligaments in the shoulder that help to keep it in place. There is also a superior and inferior piece of cartilage connected to the glenoid fossa called the labrum, which helps stabilize the shoulder. <1> "The ligaments of the shoulder are attached to the socket at the labrum**.** Tearing of the labrum sometimes occurs with instability…" <3> and causes severe pain and popping when it's torn."<1>

ANATOMY OF THE ROTATOR CUFF

Stabilization of the shoulder is a complex process shared among four muscles and their tendons. These are collectively referred to as the rotator cuff. "The muscles of the rotator cuff wrap deep around the joint from the back, from the front, and over the top. The rotator cuff is surrounded by an empty sac (bursa) which helps the tendons slide and is susceptible to many problems which can cause weakness, tenderness and pain." <3>

The term "Rotator Cuff" is used to describe the group of muscles and their tendons in the shoulder that helps hold the shoulder 'in the socket' and controls shoulder joint motion. The names of these muscles can be remembered with the mnemonic SITS: supraspinatus, infraspinatus, teres minor, and subscapularis. The supraspinatus is at the top (superior) of the shoulder, the subscapularis is anterior (front), and the infraspinatus and teres minor are posterior (behind). These muscles insert or attach to the humeral head by way of their tendons. The tendons fuse together giving rise to the term "cuff." Although each muscle acting alone may produce an isolated rotational movement of the shoulder, the role they play together is to help keep the humeral head (ball) centered within the glenoid (socket) as the powerful deltoid and other larger shoulder muscles act to lift the arm overhead. <3>

"The supraspinatus originates on the upper scapula, just above the spine of the scapula, and inserts on the greater tuberosity (at the top) of the humerus, a small lump on the outer upper part of the bone. The supraspinatus initiates shoulder abduction. If you stand in Tadasana (Mountain Pose) with your arms by your sides and then lift your arms up to a T shape for Virabhadrasana II (Warrior Pose II), the supraspinatus (along with the deltoid) begins that lift. <4> In its' stabilizing function, the supraspinatus helps keep the head of the humerus from slipping down and partially out of the socket, a painful condition called subluxation. Shoulder subluxation in this direction commonly occurs when the muscle is paralyzed by a stroke." <3> The major muscle that is usually involved in Rotator Cuff Injury (RCI) is the supraspinatus. <1>

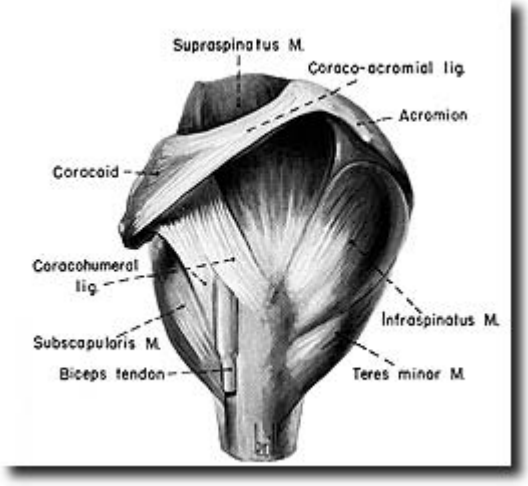


{ Plate 2 / Mayoclinic.com <2> }

The infraspinatus originates just below (the middle two thirds of) the spine of the scapula; the teres minor originates near the infraspinatus on the back of the scapula. Both cross the back of the shoulder joint to insert near the supraspinatus on the greater tuberosity (top) of the humerus, and both are strong external rotators. If you stand in Tadasana, palms facing your body, and then turn your elbow creases forward (the palms will naturally turn forward too), you've externally rotated your shoulder--and you've just used the infraspinatus and teres minor. <4>

"Besides being external rotators, the teres minor and infraspinatus are very important in positioning the head of the humerus as you flex the shoulder (when you bring your arm forward and up overhead) and abduct the shoulder (when you bring your arm straight out to the side and up). The two muscles actually pull down on the head of the humerus as the arm elevates, to prevent the ball from crashing up into the acromion--the projection of the scapula that, like a carport roof, protects the top of the joint." <4>

The subscapularis is the hardest part of the rotator cuff to locate, and its actions are the most difficult to understand. It originates on the front surface of the scapula and runs forward, forming part of the posterior fold of the armpit. It then wraps around to the inner upper shaft of the humerus and inserts there. The subscapularis is a very strong internal rotator of the shoulder, so its action opposes the actions of the infraspinatus and teres minor. Along with the rest of the rotator cuff muscles, the subscapularis helps stabilize the ball of the
humerus in the shoulder socket. <4> "The arm rotation function of the subscapularis is opposed primarily by the infraspinatis and teres min. These 3 are synergistic during arm flexion and abduct at shoulder to prevent upper displacement of humeral head. Thus these 3 muscles form a myotatic (groups of muscles that work together) unit with the deltoid & supraspinatus muscles for abduction and flexion of the arm at shoulder." <5>



{ Plate 3 / Mayoclinic.com }

2B. GROSS AND SUBTLE BODY; COMMON SYMPTOMS

RCIs are very painful. As the rotator cuff fatigues, the ball of the shoulder joint becomes more mobile and moves upward. This causes the rotator cuff tendons to come in contact with the bone, which can lead to irritation of the tendon and subsequent inflammation and pain. Common causes of injury to these muscles are sudden impact, training with very heavy weights, repetitive overhead arm movements and improper posture. <3>

PAIN: Rotator cuff problems are the most common cause of shoulder pain. "Due to the narrowness of the space provided for the cuff, any inflammation or swelling of the tissue leads to pain."<7> Reaching up to comb your hair, bending the arm back to put on a jacket or carrying something heavy will produce pain. Lying or sleeping on the affected shoulder also can be painful. In the case of a severe injury, such as a large tear, there will be continuous pain and muscle weakness.<2>

Pain in the shoulder may extend down as far as the elbow, but not usually beyond. Neck pain on the same side may develop later as a result of using the scapular elevators excessively to compensate for abnormal glenohumeral motion. These scapular elevators, such as the trapezius originate from the cervical spine and can cause pain in the posterior neck and well as occipital (low) headaches.<3>

WEAKNESS is another common problem for people who have rotator cuff injuries. Sometimes weakness is just secondary to pain, other times it is because the rotator cuff muscle has begun to tear. The weakness is usually worst when trying to lift the arm over your head. <2>

POPPING or Clicking in the shoulder can be related to many causes. Sometimes it is caused by a cartilage tear or rotator cuff tear that is rubbing within the joint. Other times, it can be due to subtle shoulder instability.<1>

STIFFNESS can be caused by many problems in the shoulder including rotator cuff issues, diabetes, arthritis, damage to the glenoid capsule and frozen shoulder (adhesive capsulitis). With normal shoulder mobility, the arm can sweep left, right and circle up and back. Often, pain from a rotator cuff injury will force the person to stop using your shoulder. Then the shoulder gets stiff because of a build up of scar tissue. This is often called a frozen shoulder. <4>

LOOSENESS is often a sign of shoulder instability or dislocation. This is the sensation of the shoulder coming out of socket. Sometimes this entails dislocations, where the head of the humerous bone completely pops out of the socket. Other times, instability causes "subluxations" which are partial dislocations. Often, the patient may not know that their shoulder is subluxating, and feel only pain. Looseness in the shoulder socket is usually a sign of weakness in the supraspinatus. <1>

ARTHRITIS is much less common in the shoulder joint than in other joints, such as the knee or hip. But arthritis of the ball and socket of the shoulder joint can be seen in people more than 40 years old. Arthritis of the AC joint can be seen in patients even in their mid-twenties if they have had previous injuries. <3>

COMMON CAUSES generally involve any type of irritation or damage to the rotator cuff muscles or tendons, including: **1) Normal wear and tear:** Increasingly after age 40, normal wear and tear on your rotator cuff can cause a breakdown of fibrous protein (collagen) in the cuff's tendons and muscles. This makes them more prone to degeneration and injury. With age, calcium deposits may develop within the cuff or arthritic bone spurs that can pinch or irritate your rotator cuff. **2**) **Poor posture.** When slouching the neck and shoulders forward, the space where the rotator cuff muscles reside can become smaller. This can allow a rotator cuff muscle or tendon to become pinched under some of the shoulder bones**. 3) Falling:** Using your arm to break a fall or falling on your arm can bruise or tear a rotator cuff tendon or muscle. **4) Lifting:** Lifting something that's too heavy or lifting improperly, especially heavy overhead lifting, can strain or tear the tendons or muscles. **5) Repetitive stress:** Repetitive overhead movement of your arms can stress your rotator cuff muscles and tendons, causing inflammation and eventually tearing. This occurs often in athletes, especially baseball pitchers

and tennis players. It's also common among people in the building trades, such as painters and carpenters.<2>

2C: RELATED CHALLENGES; LIFESTYLE, DIET LIMITATIONS ON ACTIVITIES

“When a person lands on the shoulder, the acromion bangs into the rotator cuff. Depending on the position of the arm, the strength and flexibility of the muscles and tendons, and the shape of the under surface of the acromion, either a bruise or tear of the rotator cuff can commonly occur.”<7>

“ROTATOR CUFF DYSFUNCTION is typically a continuum of pathology ranging from tendonitis and bursitis to partial tearing, to a complete tear in one or more of the tendons. Although the earlier stages may resolve with conservative care, actual tearing of the tendon can be more problematic. These tears most commonly occur at the tenoperiosteal (tendon to bone) junction. Because this area has a relatively poor blood supply, injury to the tendon here is very unlikely to actually heal. Additionally, the constant resting tension in the muscle-tendon unit, or “muscle tone”, pulls any detached fibers away from the bone, preventing their reattachment. Finally, joint fluid from within the shoulder may seep into the tear gap preventing the normal healing processes from occurring.” <3> Rotator cuff problems are usually divided into 3 basic categories:

1. Rotator Cuff Tendonitis (also known as Impingement Syndrome or Shoulder Bursitis). If the cuff is bruised only, bleeding into the tendons occurs, the tendons swell, and pain increases. This entrapment of the swollen cuff may persist for months, increasing and decreasing in intensity usually related to activity. The syndrome is typically characterized by pain when the arm is in the overhead position, pain when twisting a screw driver or opening a bottle top, or pulling a cork, or when skiing. For the athlete, the pain is usually at the front of the shoulder.<3>

Some people are born with a "hooked" acromion that will predispose them to this problem. Others have rotator cuff weakness that causes the humerus to ride up and pinch the cuff. This means that the bursa, a water-balloon type structure that acts as a cushion between the rotator cuff and AC joint, gets inflamed.<1>

2. Impingement Syndrome: “If the teres minor and infraspinatus are too weak to do their jobs or there are other problems with the movement of the scapula, you can develop impingement syndrome, in which soft tissue gets compressed between the head of the humerus and the acromion. If the damaged and inflamed tissue is a bursa, one of the cushioning pads between tendon and bone, you have bursitis. If it is a tendon (commonly the supraspinatus tendon), you have tendonitis.” <4>

There are four common symptoms of impingement syndrome (rotator cuff tendonitis): There is pain, primarily on top and in the front of the shoulder. It is usually worse with any overhead activity (shoulder in flexion). Weakness can be mild to moderate and is especially worse with overhead activity. Sometimes bursitis can cause a mild popping or crackling sensation in the shoulder. And finally the person usually is unable to sleep on the problem shoulder. <1>

3. Tendonitis anywhere in the rotator cuff can get so bad that a hole is worn through the tendon. Since the tendon connects the rotator cuff muscles to the humerus bone, when the tendon is torn, there is weakness in the shoulder. Usually these tears occur in people who have had shoulder pain for some time (chronic rotator cuff tear). This is, by far, the most common type of rotator cuff tear. <3>

Tears sometimes happen in people who have no history of shoulder problems. It can happen in someone who takes the brunt of a fall on the extended arm. Another common injury is in someone who lifts something too heavy and feels a pop in the shoulder. Usually pain is immediate (acute rotator cuff tear). <3>

Although the earlier stages may resolve with conservative care, actual tearing of the tendon can be problematic. These tears most commonly occur at the tenoperiosteal (tendon to bone) junction. Because this area has a relatively poor blood supply, injury to the tendon here is (possibly) unlikely to actually heal. Additionally, the constant resting tension in the muscle-tendon unit, or “muscle tone”, pulls any detached fibers away from the bone, preventing their reattachment. Finally, joint fluid from within the shoulder may seep into the tear gap preventing the normal healing processes from occurring. <3>

2D: CONVENTIONAL MEDICAL DIAGNOSIS & SUGGESTED TREATMENT

Usually, the diagnosis is determined with an examination by a medical doctor. After Muscle and ROM tests, diagnostic imaging tests may be ordered. “X-rays will not show the rotator cuff, but they will reveal any evidence of arthritis, spurs within the shoulder, loose bodies, fractures from a related fall, abnormal displacement of the humerus out of the glenoid, and congenital (birth) related problems. Therefore, good quality x-rays are a must in the proper evaluation of the shoulder.”<3>

Sometimes an MRI is done which shows the doctor the rotator cuff tendon and where it is torn. If a partial thickness tear (not torn all the way through) is suspected, an MR-Arthrogram may be given which involves an injection into the shoulder before the regular MRI.

“Magnetic Resonance Imaging or MRI has allowed visualization of the soft tissues of the body, including the rotator cuff. An MRI can depict tendonitis, partial tearing, and complete tears of the rotator cuff. While an MRI is usually not required to diagnose a torn rotator cuff, it can be very helpful to determine which tendons are torn, how large the tear is, the degree of tendon retraction, the extent of muscle belly atrophy (shrinkage), and any coexisting problems.”<3>

Many rotator cuff tears do not require surgery. Conservative treatment of rotator cuff disease classically includes rest, activity modification, non-steroidal anti-inflammatory medications. A rehabilitation program may be prescribed in a physical therapy setting. Therapy may include heat, cold, ultrasound, electrical stimulation, laser treatment, massage and other modalities, but the hallmark of an effective rotator cuff rehabilitation program is therapeutic exercise. Stretching of particularly the posterior joint capsule can help the tendency of the humeral head to migrate superiorly toward the acromion with forward elevation. Strengthening of the remaining rotator cuff can again help contain the humeral head within the glenoid and avoid undue pressure up on the acromion. Finally, muscle re-education to normalize the mechanics of shoulder motion can help the return to his or her full function. <3> & <6>

1. Do not ignore your body - it is telling you (with pain) that something is wrong. Stop any activities that can aggravate your symptoms - particularly overhead activities, repetitive motions, and heavy lifting. However, do not put your arm in one position for a long time - keep it mobile.

2. Control your pain level. Take medications, if necessary, to minimize or alleviate discomfort and pain.

3. Ice or ultrasound can help to decrease the pain and local swelling.

4. Regain motion. It is critical to regain the motion lost as a consequence of having this tear. Regaining motion doesn't just improve your mobility, it can often decrease your pain as well! Osteopathic manipulation and Physical Therapy are good options.<1>

Keep your muscles limber. After one or two days, do some gentle exercises to keep your shoulder muscles limber. Total inactivity can cause stiff joints. In addition, favoring your shoulder for a long period of time can lead to frozen shoulder, a condition in which your shoulder becomes so stiff you can barely move it. Once your injury heals and you have good range of motion in your shoulder, continue exercising. Daily shoulder stretches and a balanced shoulder-strengthening program can help prevent a recurrence of your injury. In addition, daily exercises can help prevent an injury if you use your rotator cuff often. Your doctor or a physical therapist can help you plan an exercise routine.<2>

5. STRENGTHEN your rotator cuff!" <1>

"The logic behind stretching and strengthening the inflamed rotator cuff in order to speed healing and functional performance is as follows: the inflamed tissue is characterized by increased fluid between the cells, increased numbers of new blood vessels and inflammatory type cells. As a result of this inflammatory reaction, new collagen tissue is laid down in an effort by the body to heal the injured tissue. If the shoulder is immobilized during this time, the new collagen is laid down in a disorganized fashion, creating scar. The goal of gentle stretching, strengthening and anti-inflammatory medication, is to stimulate the cells to lay down collagen along the lines of stress, forming normal strong tendons. The combination of a good warm up, gentle stretching, strengthening below the limits of pain, icing after working out and anti-inflammatory medication has been consistently shown to speed recovery time in the strongest possible fashion."<7>

Strengthening the rotator cuff muscles works to take the shoulder out of the "injured vicious cycle". (1) The rotator cuff is irritated (overuse, injury, etc). (2) It's stiff which causes increased pressure under the acromion bone. (3) The acromion bone makes new bone (a bone spur). (4) That bone spur then presses on the rotator cuff. (5) The rotator cuff gets MORE irritated, and then more weak, and so on. Strengthening the rotator cuff is the scientifically proven way to break this vicious cycle. <1>

It is vital to strengthen all the muscles of the rotator cuff. The ones that are not torn can help to compensate for the torn muscle. Because their are 4 muscles in the rotator cuff, and usually only one is torn, sometimes strengthening the others is all you need to return to pain-free function. <1>

6. Injection therapy: In patients who fail to improve with initial conservative therapy, there may be a role for judicious use of corticosteroid ("cortisone") injection therapy in the bursa above the tendon. The mechanism of how this technique may be helpful is not completely clear, but it may reduce bursal and tendon irritation and swelling. The cortisone does not just "mask" the problem, but helps break the cycle of pain, swelling, weakness, and continued impingement. Injection therapy may then help reduce pain and impingement and allow the individual to continue to work on rotator cuff strengthening. Current recommendations are that a maximum of 3 cortisone injections should be used per shoulder. There is some evidence in laboratory research that more than 3 cortisone injections around an otherwise healthy tendon may result in considerable weakening of the tendon and even rupture. Most orthopedic surgeons recommend that you get no more than one or two of these a year, as they do have the potential to weaken your tendons. <3>

7. Surgery: "Patients with more advanced rotator cuff disease or a more significant injury may fail efforts at conservative therapy. If the patient feels that his or her quality of life is being significantly impacted by the shoulder dysfunction, then consideration of surgical intervention is certainly reasonable … Long term studies have revealed 80 to 95 percent good to excellent results for rotator cuff repair done open or arthroscopically … A well-motivated patient combined with a well-done repair and a comprehensive rehabilitation program, typically results in a satisfied patient who is able to return to his or her normal activities of daily living with little to no compromise." <3>

3A: AYURVEDIC ASSESSMENT AND AYURVEDIC BASED YOGA RECOMMENDATIONS FOR ROTATOR CUFF INJURY (Vikruti)

Yoga should always be adapted to the individual. In the case of an injury, there is no more powerful way to "adapt to the individual" than with the understanding and application of ayurvedic yoga therapy principles. With attention to the symptoms of the injury and the imbalances in the person's personality and attitude, a more complete therapy can be utilized with a more successful and long lasting result.

Given the severity of the accident, I would say that instability of the joint (Vata tendency) is not the culprit. However, most of Sally's symptoms were Vata or Pitta in nature. Sally had experienced

throbbing (Vata) and burning pain (Pitta) after the injury. A year later she is still experiencing persistent inflammation in the shoulder joint (Pitta). Note that her pain had also become dull and chronic (Kapha).

Sally had attended yoga classes for several years before the accident. Though aggravated by the accident, I observed a slight inattentiveness and/or lack of understanding coupled with a sort of dullness or lethargy that would occasionally arise during class. However, she would always comment on how much she really enjoyed the class. In addition, there was a sense of timidity in her movement during yoga class (Vata).

After the accident, these Vata traits became more pronounced. She exhibited some anxiety and fear of moving … that it might cause pain in the neck and shoulder. As noted on page 1, "Her psychological makeup seemed to be part lethargy and part fear…" Being afraid and not taking action on her own behalf, being afraid of one's own power, is also a sign of Pitta imbalance. <11> In addition, Her lethargy coupled with her lack of strength and stamina indicated a tomasic characteristic of a Kapha imbalance. <13> She also had developed a "go with the flow" attitude which seemed to have a quality of resignation. These, too, are signs of Vata imbalance. <11>

She also was not familiar with exploring or examining her own state. Therefore, as highly intelligent as she is, she seemed confused or not aware of what state she was in or how she felt about some aspects of her body and her health. Mukunda Stiles refers to this state as the "air-head" state. Her intuition (Vata) and discernment (Pitta) had become severely subdued.

When asked about these characteristics, what was going on in her body and in her head, Sally confirmed all of these perceptions as true.

"Ayurveda works by calming the agitated dosha, restoring balance and returning the dosha to its home site … Regardless of which dosha is imbalanced, balancing Vata … can rectify all other doshas." <11> Ayurvedic Yoga Therapy is particularly helpful to a person out of balance. This is because, "When the student is not clear what is the intention of the practice they will be guided by their perception of the imbalance du jour." <13> Having thorough discussions with Sally to clarify what and why we were focusing on certain practices would address Sally's Vata imbalance first.
Sally needed Vata balancing asanas. "Asanas for tonification aim at building up the bodily tissues, primarily the muscle tissue that is the support of the entire body…They reduce Vata, which tends to deficiency, by countering it with better circulation leading to stronger tissue development." <15> In a very kindly and encouraging fashion, I began giving her yoga postures. She did the joint freeing series, sitting poses, and other movements specific to her injury. She performed all movements rhythmically, slowly, deliberately and with great concentration. She used a soft muscular effort at first with emphasis on the breath, particularly Ujjayi pranayama done slow and slightly audible. She was to do her yoga class with the same intention … specially the sun salutations in the beginning of class. She was also encouraged to practice her meditation and pranayama as well as her other favorite relaxing activities more regularly.

As we progressed, Sally decided to go on a yoga week end without telling me. When she returned she had a lot to share. She said she had just gotten so encouraged from out working together that she thought she could do it. But she overdid it and was hurting again. The characteristics of misdirected discipline and impatience are also indicative of a Vata imbalance. And the lack of discernment, pushing too hard (rajasic) and self destructive behavior are clear signs of a Pitta imbalance.

After a while, with regular appointments and regular practice, she began to take note of and understand her own progress. She was gaining courage and becoming more content as well, all signs of Vata in harmony. Now we could begin addressing the Pitta imbalance

To balance Pitta, we began doing the yoga at a little faster pace. We changed the focus on the quality of her movements to a more stretchy emphasis rather than breath oriented movements. We added a little bit of gentle holding in poses as well.

In general, by focusing on breath and not forcing or holding in a prolonged way, Sally's prana, will power and ability to hear her inner voice were increased (Vata). Through her continual attendance in yoga classes, focusing on doing back bending and twist poses in a gentle way, we balanced her Pitta and tempered the Pitta tendency toward inflammation. By approaching these imbalances first, the few Kapha imbalances resolved naturally.<14>

3B: KOSHAS

In yogic terms, we address the human being not only as a body with a brain but as having five sheaths or layers known as 'koshas.' These are briefly described below and in section IV B.. The easiest place to start is usually with the physical body. And for Sally, her physical state was her greatest concern. Now that she had been working on the first kosha, the physical body, and the structural yoga postures were successful, I felt it was time for Sally to address the other four koshas to a greater degree. With fulfillment in each of the koshas, the others are more greatly enhanced. This would bring her to a more wholesome place in general. Considering all of the koshas in her daily program would serve her both as a grounding and as a springboard. Her present state of well-being would be more fulfilled and she would have fertile ground from which to grow in physical, mental and emotional strength, wisdom and happiness.

(Physical body / Annamaya Kosha) We did talk about how she was doing with the postures and we refined them where needed. We added the Joint Freeing Series (JFS) from Mukunda Stiles' book, Structural Yoga Therapy. When I asked her about how she ate, she said she had been trying to eat cereal 2 times a day to lose weight. She felt like she needed more tone. She eats pretty well. Her diet includes vegetables and fruits (not always fresh), cheeses and meats, bread and cereals from the regular local grocery store. She eats sweets / candy probably 2 times a day. And she said that she thinks she eats too much. She stopped drinking coffee about 3 months ago. She gets enough water most of the time.

(Energy & emotional body / Pranamaya Kosha)When I asked her what she did to feed her soul, she was taken back in surprise. She had to think for a while. Then she got a wonderful, open, bright look on her face. She talked about walking on the trail behind her house and being at the beach. As I continued to ask questions, she began to think of more. Watching violent type movies gave her a weird, creepy feeling.

(Mental body / Manomaya Kosha) Doing the saduko puzzles in the paper demanded logical thinking which met her need for mental challenge. She's begun reading 'daily inspirational wisdom' written by a swami and likes it very much.

(Wisdom body / Vijnanamaya Kosha) She liked being around certain friends. They just made her feel good. She used to journal but doesn't so much any more. A new thing was reading a daily inspirations book written by a swami. She always liked to meditate … but only knew how to do it with breath and just didn't do it very much.

Then I asked her about the swimming that the Osteopath had suggested for her. She said she meant to but just didn't get around to it. The more we talked, as it turns out, she just doesn't like to. She's allergic to chlorine, her eyes burn, it messes up everything, her hair, her skin, and so on. She had felt bad about not getting to it. Now she seemed happy to figure out what was going on with her resistance to swimming.

We set up the following daily plan, to be modified any way she saw fit each day. I invited her to be playful and experimental with it:

1. Annamaya kosha: To drink a glass of water with lemon before breakfast. I informed her of some properties of sugar…that it makes you hungry more often and that sometimes sugar

can promote arthritis and cause pain in injured areas as well. I suggested maybe using honey sometimes instead of sugar in her tea. Substitute dates or figs or fresh fruit for 1 of the candies. I did tell her there was no need to be crazy about it … everybody's got to have some candy! And discouraged sudden, extreme changes. She agreed.

I also asked her to do her yoga practice with the feeling of strength, the intention of heating up, but not straining. My reasons are described in section IV B. At first she didn't understand. We went through a few postures and suns for her to 'find' her strength.

Do Kapaalabhati (Breath of Fire) each morning before eating.

Do the postures for the upcoming week with a bit more vigor – just to see how that feels. Let yourself heat up just a bit.

2. Pranamaya kosha: Do Kapaalabhati (Breath of Fire) each morning before eating.

3. Manomaya kosha: After reading your inspirational book in the morning, just sit for 10 minutes and meditate. Let a word or a few words float to your consciousness to describe what the lesson of that daily reading meant for you. Then use them like a mantra and just repeat if until your 10 minutes is up. See how that goes. And she would keep doing her Suduko puzzles!

4. Vijnanamaya kosha: After reading your inspirational book in the morning, just sit for 10 minutes and meditate. Let a word or a few words float to your consciousness to describe what the lesson of that daily reading meant for you. Then use them like a mantra and just repeat if until your 10 minutes is up. See how that goes. And she would keep doing her Suduko puzzles!

   Your job is selfless service. Remember that on your way in to work and while you are working with all those troubled people with their addictions. Just because you are being paid doesn't mean it is not selfless service. That surprised her. And she will seek to get with her 'good' friends remembering that good company feeds the soul.

5. Anandamaya kosha: You deserve to be happy … to be joyful. That's the reason for doing all this other stuff. To be joyful … She smiled.

In class, I also taught the dosha balancing breath work. Do the slow, easy ujjayi breath until the low belly becomes warm. Then use breath of fire (kapaalibhati) slowly until the energy moved up into the heart center. Then use bellows breath (bastrika) a bit faster until the energy/heat moved to the solor plexus. This would serve her well for now. At some point we would work privately together or she would come to a workshop about more ayurvedic balancing.

4 COMMON BODY READING

TABLE V: COMMON BODY READING FOR ROTATOR CUFF INJURY from Structural Yoga Therapy by Mukunda Stiles, Table 3, page 103:

Postural Change	Tight Muscles	Weak Muscles
Round shoulders	Pectorals, serratus anterior	Middle & lower trapezius, latissimus
Tilted head	SCM & upper trapezius	Same on opposing side

High shoulder	Upper trapezius, levator scapula	Lower trapezius, latissimus, pectoralis sternal
Palm turned back	Pectorals, latissimus, teres major	Teres minor, infraspinatus
Winging scapula	Serratus ant, pectorals, ant deltoid	Middle trapezius, rhmboids

5 CONTRAINDICATED YOGA PRACTICES AND GENERAL ACTIVITIES TO MODIFY OR ELIMINATE

In general, movements with the arm that involve twisting the arm behind the back or jerking in any position are to be avoided. Also, the presence of too much weight can prolong the damage and even re-injure the affected muscle/muscles. This refers to either pressing the weight of the body into the shoulder (such as occurs when a person does push ups) or the lifting of too much weight while the arm is in a twisted position, especially behind the back.

In addition to avoiding the above in general, there are certain yoga practices that need to be eliminated or modified to be done against a wall, in the case of a rotator cuff injury. The weight bearing postures such as ardho mukha svanasana (Down Dog), salamba sarvangasana (Shoulder Stand), sirsasana (Headstand), handstand, plank and chatturanga are to be avoided or done gently and painlessly against a wall or a chair instead of the floor. The arm twisting poses such as gomukhasana (Face of Light Pose), ustrasana (Camel). If pain exists in any arm position such as shoulder flexion or poses such as setubandhasana (Bridge) or bhujangasana (Cobra) the position or pose should be avoided or modified to a point of “no pain.”

6 GENERAL RECOMMENDATIONS FOR ROTATOR CUFF INJURY

A person with a rotator cuff injury needs to move progressively through 3 phases –

a - Therapeutic/free of pain: Joint Freeing Series and Structural Yoga Asanas to strengthen the weak muscles and to stretch the tight muscles (on the subtle level to unlink from lethargy and fear); breathwork to calm the mind and the fear indicative of Vata imbalance.

b - Stabilize situation and lifestyle change recommendations: Practice savasana and meditation for the relaxation benefits and to ‘tune-in” and enhance self-awareness. Take more time outdoors. Arrange yoga or walking breaks from her job where she sat for long periods of time in meetings.

c – Maintenance and long term considerations: Continue regular yoga class. Also do the Joint Freeing Series two days a week and one chart (1-4) from the Structural Yoga Kinesiology 4 days a week. And remember that, since sitting for long periods of time aggravates Pitta, she should also focus on spending more time in movement activities such as walking in the woods behind her house, yoga and cross-country skiing and less time sitting for long periods of time doing her puzzles, reading and at her job.

7 QUESTIONS & ANSWERS FROM www.yogaforums.com

Q1: July 28, 2005: Two weeks ago I fell on my outstretched right arm and recieved a complete tear of the rotator cuff, specifically the supraspinatus tendon torn at the anterior terminus. I am in a sling and cannot raise my arm from the shoulder in any direction. The orthopedic surgeon says there is a 50/50 chance that it could heal without surgery, so I am at this point staying in the sling some and also take the arm out and move it around

sometimes also. Other than a shot of cortisone I have received no other treatment. I am doing what one armed yoga that I can and also manipulate the hurt arm with the good arm, but not to a point of pain. Is there anything that I specifically should not do with the arm? Anything that I could do to help facilitate the healing process?
Jan

A1: In general I would do all my joint freeing series but not do shoulder abduction motions shown in page 147 #13. That is the specific motion of the supraspinatus. Massage especially with BF & S ointment is of great benefit. This can be bought from wholesale at Emerson Ecologics 800-654-4432 if you have resale license. You can buy direct by mail for $25 to me. I owned a massage school in Sacramento in early 80s and found this to be a wonder linament formula. In 25 years of use I have found nothing better. Definitely combination of glucosamine and chondrotin plus vitamin A & E are helpful supplements but this linament is best. I can show you self massage or do to you with a friend observing who can help you. Other forms of energetic healing can be done in person. namaste mukunda

Q2: July 25, 2003: I have a new student who is trying to rehabilitate both of her rotator cuffs after tears and a subsequent operation. Her ROM is very limited and she can't take much pressure on the shoulder area. She feels comfortable doing unsupported cobra and anything that allows her arms to go behind her body and can raise her arms above her head, but not out to the sides. She is working on increasing her strength with therapeutic hydraulic circuit training equipment, but I'm wondering if there are any yoga poses that would assist in those efforts. I've only worked with her once and for a short time. Do you have any suggestions?

A2: I have written a series of article on yoga therapy for knees and shoulders, published in yoga international magazine. You can buy reprints from me for $5 or from YI. They have much more details than I can convey here.

For such an injury to the rotator cuff best is to learn to differentiate sensations of the external musculature from the deeper muscles. Working with strength in the deltoids, latissimus dorsi, triceps, biceps and pectorals is optimal for recovering mobility. Learning to feel these muscles independently can help speed recovery time. This is most easily done with the help of my joint freeing series. In my book it shows which movements isolate which muscles.

Q3: July 14, 2003: I have been suffering for about 10 months with repetitive injuries to my rotator cup. At one time I could do reverse Namaste, downward dog, etc., without pain. Now I can barely rotate my arm around to my back. I am undergoing acupuncture and massage therapy with resistance work to help ease the pain. What yoga asanas would be good to begin to slowly open this shoulder up and release in this area.

A3: D - There are many different motions of the rotator cuff. Primarily it is internal and external rotation but when you add other possibilities -- extension, flexion, abduction, adduction it complicates the process. To be on the safe side I would recommend just doing my Joint Freeing Series alone for 7-10 days and no asanas. Then take up asanas and do those, which gradually extend the ROM slowly. I cannot make specific ethical recommendations about this injury without seeing you. It is too likely to be irritated without adequate professional assessment. Best wishes in your healing. Mukunda

Q4: November 19, 2002: One of my regular students is coming for a private session, as I have not been teaching classes this fall during my own recovery from surgery. She is clearly pitta predominant -- vivacious, fiery, piercing eyes and high energy/enthusiasm. Her build is medium/strong and she tends to be impatient with herself and with the more meditative aspects of her yoga practice. (For example, she has a reaction to practicing Surya Namaskar with the movement flowing with her breath.) Last year she injured her shoulder -- apparently a rotator cuff injury.

She was not happy to listen to her body during class and frequently went beyond her safe range of motion and into pain, despite encouragement to not do so. She has also been experimenting with Reiki healing and had some strong emotional reactions last spring after Reiki sessions. We did some meditation and discussion together after her experience, and she felt some relief from the anxiety/fear, which came up. Now she has developed a gastroenteritis (had 2 attacks, they have subsided), but continues to have heartburn. Also, rotator cuff is still injured. Both issues seem to be pitta inflammations.

She will come next week, and I suggested she do some "homework" to prepare. 1) Wave breath with focus on following the complete wave, allowing (not forcing/controlling) exhalation to lengthen. This to be done first lying, then sitting, and if she feels up to it, 2) Joint Freeing Series with focus not on full ROM but rather on maintaining wave breath as given above. When she comes, I will see how she is doing and review breath -- making sure she is not Efforting OR straining but rather releasing and letting go. I will also do ROM analysis for shoulder joint -- lying down on back seems easier for me than when sitting up.

I will give her review of JFS and pranayama -- would also like to offer a soothing mind focus or more active releasing movement for her as the slow pace of the things could irritate her I have in mind. Gary Kraftsow's book suggests exhalations from kneeling with raised arms to child pose -- bringing arms behind the back rather than overhead on the ground -- while humming out or using a mantra on the exhalation is helpful for issues with digestion and/or anger/anxiety. I thought I would offer Apanasana done as a flow on breath (single legs w/reaching arms overhead as legs extend, single leg to belly with gentle compression on exhale and "Om" or "letting go...." Perhaps the movement, which Kraftsow recommends also. Both have gentle compression of belly to stimulate digestion, but main focus on exhale and release of tension. Both are also comforting movements of being curled up and fetal. My feeling is that what she needs now is to allow herself to quiet and experience her deeper self and meditation.

A4: I can see that you are understanding Ayurvedic concepts as they apply to making Yoga recommendations. Great. You have given an excellent series of homework for this lady. If you have not purchased David Frawley's Yoga and Ayurveda then that may assist you at have more material for this combination of studies. You can also inquire into diet and lifestyle more effectively with that information. I would also recommend she do an anti-pitta diet and regulate her stimulating substances and lifestyle to having more time in nature and getting to bed earlier. Massage with soothing oil like sesame would be soothing too. For the shoulder the recommendations you have cited are fine and show the principle of adapting to this individual. Allow her to stay in charge your advice is only suggestions that she could try. Pitta predominant people need control until they are ready to relinquish it. Blessings. Mukunda

Q5: April 26, 2002: Have encountered a couple of people in my classes with a similar complaint. They feel pain when they rotate their arm in a full circle, 360 degrees. The specific pose is a reclining twist (parivartanasana) with the extended arm moving in full circles (a Bartenieff Fundamentals exercise). I assume this might be some sort of rotator cuff problem, maybe an inflammation that causes them pain when their arm goes up and rotates above their head? I always suggest that they stop anything if it hurts but I wonder if continuing to take the humerus through its full range of motion might be beneficial? Or maybe its best to do less? What would you suggest?

A5: This motion is likely to be problematic as you are moving from external rotation to internal rotation above your head. By having the arm be passive as you move there is more likely a tendency to stress the rotator cuff and brachial plexus nerves. Safer is to have the entire arm actively turning as a unit. The motion is not a problem provided you are warmed up for it. Suggest you do the individual motions of the shoulder joint first, as in my book.

Q6: April 24, 2002: (Two) students have damaged their rotator cuff muscles (infraspinatus, surpraspinatus, teres minor and subscapularis). They want to re-begin practice but don't know how to (nor do I without trial and error and creating pain for them). We need a practice that is safe, strengthening, and also encourage healing and not over-doing.

A6: I would recommend my joint freeing series (pg. 121-153) in my book, Structural Yoga Therapy. The key is to do the entire series not just the motions related to the rotator cuff motions (147-148). In the ideal way of practicing the series for injuries the student needs to be cautioned to move slowly and thus keep the motions at a slower than regular breathing rate. This will heighten sensitivity and aid in promoting lymphatic circulation.

RESOURCES

Websites:

<1> JointHealing.Com: © Copyright 2000-2006 JointHealing.com, LLC. Some photos courtesy of DonJoy Orthopedics and Primal Pictures Ltd. Site design by Loracs Creations Inc. JointHealing.com is a privately held company that was founded by two subspecialty-trained orthopedic surgeons, Edward Loneiwski, DO and Laith Farjo, MD, for the purpose of providing reliable information about the treatment of various bone and joint disorders online. In addition, we strive to provide the public with access to products to help treat these problems that are of the highest quality and that may be otherwise difficult to obtain. Drs Loniewski and Farjo are both currently orthopedic surgeons in Southeast Michigan with busy clinical and surgical practices.

<2> Mayoclinic.Com: Mayo Clinic's three main Web sites provide information and services from the world's first and largest integrated, not-for-profit group medical practice. Manage your health with information and tools that reflect the expertise of Mayo's 2,500 physicians and scientists, learn how to access medical services, and discover Mayo's medical research and education offerings.

<3> orthopedic.com: Jonathan Cluett, M.D.; Topics include extensive information on bones, joints, injuries and conditions as well as therapeutic and rehabilitation methods. Tools include medical encyclopedia, video library, articles and forums.

<6> sportsinjuryclinic.net: Copyright 2005; a website containing extensive information on sports injuries; sports massage tutorials; links to professionals and clinics. Also includes purchase information for various items used in treatment of sports injuries.

<7> stoneclinic.com: the Stone Foundation at the Stone Clinic, 3727 Buchanan Street, San Francisco, CA 94123; 415-563-3110. The website contains information on sport and fitness education, nutrition, injuries, programs & research; patient experiences; papers and links to related sites.

Books:

<15> Frawley, David & Sandra Summerfield Kozak, M.S., Yoga for Your Type. Wisconsin, Lotus Press, 2001.

<12> Frawley, David, Yoga and Ayurveda, Self-Healing and Self-Realization. Wisconsin, Lotus Press, 1999.

<5> Simons, David G.,M.D. & Travell, Janet G , M.D. Volume 1, Myofacial Pain and Dysfunction, the Trigger Point Manual, the Upper Extremities. Baltimore, MD; Williams & Wilkins,1983; page 626

<14> Stiles, Mukunda, Ayurvedic Yoga Therapy. WI, Lotus Press, 2007.

<8> Stiles, Mukunda. Structural Yoga Therapy. Boston, MA: Samuel Weiser, 2000.

<9> Stiles, Mukunda, Yoga Sutras of Patanjali, Boston, MA; Samuel Weiser, 2002.

Articles & Miscellaneous:

<4> Yoga Journal: “Arm Yourself Against Injury”, Julie Gudmestad.

<4a> Yoga Journal: March 2006, “Wear & Care, Shoulder Injuries …,” Catherine Guthrie.

<10> Dr. Richard Panico; Notes from lectures on “How Yoga Heals,” Yogaville VA, 2002.

<11> Stiles, Mukunda, Notes from lectures, Yogaville, VA 2005.

<13> Stiles, Mukunda, Chapter 1 on Yoga and Ayurveda and Chapter 2 on Ayurvedic Concepts