

**Cervical/Thoracic Myalgia
Due to Forward Head Posture**
Non-Pathological

Structural Yoga Therapy Research & Case Study Paper
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Disclaimer: This paper does not offer medical advice to the reader and is not intended as a replacement for appropriate health care and treatment. For such advice, readers should consult a licensed health care professional.

Abstract

Through a personalized Structural Yoga Therapy™ (SYT) program adapted to the individual's unique needs, optimal, natural range of motion and a balance of muscle strength will be found. The intent of this paper and case studies are to support evidence of Structural Yoga Therapy™ (SYT) as causal treatment modalities to reduce symptoms evidenced by ROM and MT measurement, as well as Ayurvedic Dosha imbalances with concomitant improvement in discomfort and dis-ease evidenced by cervical and thoracic tension discomfort due to chronic isotonic tension related musculoskeletal and connective tissue disorders.

The study of Structural Yoga Therapy is a dynamic and evolving endeavor. In its' essence *Integrative*: there are the integrative aspects of classical Raja Yoga, Ayurveda and application of contemporary kinesiology and somatic-movement therapy – all of which illuminate Pranic therapy. Pulling all this information together is a yogic collage of art and science; a dynamic process which is a continuum of self-awareness and universal inquiry - where involution and evolution synchronize *stillness-in motion*. Albeit only momentarily, there are lengthened moments of Samadhi that string along like beads which thread a tapestry of poetic experiences as with Patanjali's Yoga Sutras.

Soul is the individual expression of spirit., and spirit is the universal expression of soul. Liberation – pull of the mind and spirit – is the path of transcendence. Manifestation – pull of body and soul – is the path of immanence. Both lead to the same place: the Devine. Pg 14 Eastern Body Western Mind: Psychology & The Chakra System, Celestial Arts '96.

The clients presented in this paper described their discomfort as aching in the neck, mid-scapular and paraspinal areas as well as concomitant regions of the, legs and feet. Each client has experienced some reduction in discomfort with early stage application of SYT Rx sadhana. The median time to recovery is still pending. Both clients have been unable to apply the treatment protocols outside of class due to personal and business reasons; however, renewed commitments have been indicated and are being followed-up in a manner that meets their personal needs.

Results of these case studies demonstrate that following prolonged cervical and thoracic tension and discomfort - when prescribed with personalized SYT pranayama and yogasana – successful alleviation and improvements of symptoms and conditions will occur.

Benefits of Structural Yoga Therapy

SYT provides the tools for not only repairing sensory and motor disturbances in the body by addressing the root cause of fascia adhesions, fibrotic muscle conditions, muscle tension, postural distortions, and dysfunctional biomechanics, it also brings about deeper physical, mental and spiritual healing processes within the respective Koshas to reveal ones' true Self - **Atman**: Physical - Annamaya kosha; Energy - Pranamaya kosha; Mental - Manamaya kosha; Wisdom - Vijnanamaya kosha; Bliss - Anandamaya kosha.

According to the World Health Organization (<http://www.who.int/en/>) the state of Health is defined as physical, mental, social and spiritual well being. **Yoga** provides tools and resources to achieve this state of wellbeing within and about ourselves with its integrated approach of harmonizing disturbances at all levels of being through awareness. It is essential a path of mindful enlightenment, soulful manifestation and spiritual liberation.

Although yoga means union of self and divine, Patanjali also defines it as mastery over mind - *yogah chitta vrithi nirodha*. This is emphasised in *Yoga Sutras* II.46 which describes *yoga pose – asanam* - [as] *a steady and comfortable position.*” *Sthira Sukham Asanam*.

Stiles, Mukunda. *Yoga Sutras of Patanjali*. Boston: Weiser Books, 2002, pp. 28.

Stability comes from balance and concentration (dharana). Softening is the ability to let go and be receptive to what ever comes up. Practicing this way cultivates an attitude of allowing ourselves to feel and experience. Asana, therefore, does not literally imply specific postures, but figuratively as a means for meditation. Steadiness and comfort, with the ability to control the breath, are the most essential factors. By thus maintaining a harmonized satvic posture and breath the mind gradually begins to get into a state of steadiness.

<http://www.yoga-age.com/modern/philosophy/phylosophy10.html>

Mindfulness - Dharana (concentration) - involves complete attention by noticing and appreciating the present moment and the interwoven levels of meaning without attachment. Disassociation permits our mind to disconnect from mindfulness as there is no longer an engagement in the present. This is a defence mechanism which constricts complete awareness and fulfilment.

Eastern Body Western Mind: Psychology & The Chakra System, Celestial Arts '96.

In *YS* I.12, Patanjali states that success in Yoga is due to consistent earnest practice over a long period of time and dispassionate non-attachment to the results of the practice.

Mukunda Stiles 2004 *What Yoga Therapists Need to Know about Ayurveda and Kinesiology*.

Satu dirgha kala nairantarya satkara asevita dndha bhumi.

YS I 14

*That practice
is indeed firmly grounded
When it is pursued incessantly,
With reverence,
For a long time.*

Stiles, Mukunda. *Yoga Sutras of Patanjali*.
Boston: Weiser Books, 2002, pp. 5.

*A true healer must tune into [their] subject, remaining grounded
in [their] own energy and allowing the subject to create [their]
own sense of balance.*

Judith, Anodea, *Wheels of Life* pg 213

Atha yoganusasanam

YS I 1

*With great respect and love,
Now the beginnings of
Yoga instruction
Are offered.*

Stiles, Mukunda. *Yoga Sutras of Patanjali*.
Boston: Weiser Books, 2002, pp. 2.

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❖ Case Study # 1: “Bill” September 27th, 2005

1-a – Initial intake

- Review of symptoms,
- Subjective pain level,
- Client Self Assessment

Bill is 58 years young, single vibrant, energetic male who is a very successful co-owner of a thriving reputable professional photography rep business in NYC. Bill is very dedicated, hard-working and focused businessman who has a lot of identification with his work. Both he and his business partner have been in business for over two decades in a very competitive high-profile exposure oriented market. Their clientele are renowned in their profession and often requires professional attention and involvement that results in frequent travel at the expense of personal time.

A seasoned life-long bachelor who has a myriad of friends and business relations, Bill is continually “on-the-go.” He has very strong and loyal relations with his mother in FL, sister on LI and business partner. Unfortunately medical issues with his mother this past Fall 2005 required him to travel and care for her; fortunately she has recouped and become well enough to be independent prior to the holidays. Business needs through and shortly after the holidays had taken an increased amount of effort and time to complete needed tasks.

Bill is a life-long Mahanttanite who is currently having a newly acquired property renovated for business and residence; in addition, he recently acquired some property upstate NY with a modest rustic house and newly renovated meditation/yoga barn. The property is settled in a very scenic rural area which has a minimalistic interior design. Although Bill has access to the comforts of life, he prefers a simplistic almost austere approach in practical manners of “being.” He is a very giving and open hearted individual with an open mind who is physically and mentally “on-the-go.”

I was first introduced to Bill in May 2005 through my partner and spent the better part of the following five months getting to know him on various levels while attending to his standard Hatha-Yoga teaching. Over the ensuring months my partner and I have developed a deeper relationship with him on various levels of energy and experience.

In September of 2005 I asked Bill if he would be interested in volunteering as my case-study for my studies as a result of his discomfort and desire for “release” of the areas his complaints. Bill was receptive but due to scheduling conflicts it took nearly a month to make arrangements. Postural assessment, range-of-motion and muscle testing were completed in October’05 and shortly thereafter a preliminary prescription provided with his acknowledgement to implement with ongoing follow-up for improvements with modifications and adjustments to best serve his needs.

A cursory medical review of his history did not reveal any concerns warranting special considerations nor identifying factors causal to the findings herein. Bill had indicated repetitive long-term cumulative trauma to his right shoulder due to shoulder-bag carrying. His discomfort is described as moderate. Visual description of the discomfort is located in the Upper Trapezius/Levator Scapula junction radiating up the right side of his neck.

To address long-standing range-of-motion “restriction” Bill has been receiving weekly body-work – sometimes twice – for several years. He has indicated significant improvement in his condition and likens the sensation to being *out-of-body* which he thoroughly enjoys. At this stage he feels it is important to continue with this treatment modality but would like to receive more yoga-manipulation to compliment this therapy.

Bill's habits and occupation are likely associated with the various portions of his body that over time have caused postural compensation and alterations. The unilateral tension Bill exhibits is likely the result of cumulative trauma due to discrepant postural habits such as right shoulder-head/neck pinch-holding of the telephone, deviated workstation set-up and carrying heavy items on his shoulder – carrying-case - for extended periods of time – all of which have predisposed him to posterior-lateral neck tension. These changes in position and function have caused some moderate biomechanical changes and joint complex dysfunction. In Bill's circumstance he exhibits moderate-significant muscular weaknesses which likely contribute to his chronic neck and shoulder tension. Triangulation of the following questions highlights the physical manifestation of Bill's doshic imbalance which is outlined under Section 3.

- WHAT DO YOU PERCEIVE? *RESTRICTION*
 - Bill feels restriction in his range of motion in his right side neck and shoulder area.
- WHAT DOES THE FEELING WANT? *RELEASE*
 - Bill is basically searching for release.
- WHAT IS REALISTIC?
 - At this point there is no realistic viewpoint since there is no consistency.

1-b – SYT Physical Assessment:

- Posture Body Reading Assessment
- Range of Motion Exam
- Muscle Test

Physical Assessment:

Bill's physical constitution most resembles a Vata dosha of medium height – although he appears tall and lanky; thinly built with low muscle tone, dry skin and long dry hair, with darker skin tones. The postural assessment revealed misaligned cervical instability, shoulder complex, thoracic and lumbar deviations evidenced most notably with **forward-head postural protrusion**, cervical lordosis and mild thoracic kyphosis with rounded shoulders and winging-scapula.

Sacro-Iliac mobilization revealed his left SI joint lowered slightly when completing right hip flexion. There was minimal Scoliometer variance over his spinal column. Measuring leg length, however, did reveal that his right leg is shorter than his left – likely the result of musculoskeletal imbalances. There was some slight play and some fore/aft play in the left knee; and right knee tibial torsion. He has a moderate carrying-angle at both elbows. The task of 'sitting-up' reveals limited vertebral range-of-motion flexion and seems weak in the abdominals and tight in the Mid-Thoracic and Lumbar region.

SYT Postural Observation:

Bill expresses Right-Sided Neck / Thoracic and Lumbar chronic tension discomfort.

- Right Shorter ½” – ¼ “ Inch
- Posterior-Tilted Pelvis / Flat Lumbar
- Slightly Rounded Shoulders
- Slightly Elevated Shoulders
- Slight Scapulae Winging
- Slight Kyphosis
- Forward Head Extension



Range of Motion Assessment: Soft-tissue exam included range of motion in all directions of movement for all joints being tested. The range of motion of the joints above and below the area of discomfort was as important as the area that exhibited discomfort – cervical-thoracic neck tension. In this case, the focus of the soft-tissue exam included range of motion for the neck as well as both shoulders, the upper back, and lower back (all for complaint of cervical-thoracic discomfort).

Although Bill evidences a number of range-of-motion excesses and deficiencies, most notable are:

- Neck Flexion *Excess
- Neck Rotation *Excess
- Neck Lateral Flexion *Excess
- Shoulder Flexion
- Internal/Medial Shoulder Rotation,
- Horizontal Shoulder Abduction
- Upper Thoracic Extension
- Thoracic Flexion
- QL – “hip-hike”

Muscle Test: Muscular strength assessment focused on several upper extremity range-of-motion articulations. Most notable was inefficient forward-head postural deviation as a likely compensatory reaction to expressed discomfort and postural assessment.

In addition, Bill’s most notable discrepancies are:

- Neck flexion
- Neck rotation *Note: Left rotation exhibited greater weakness.
- Shoulder Horizontal Abduction Extension
- Shoulder Horizontal Adduction Flexion
- Shoulder Vertical (Lateral) Abduction
- Latisimus Dorsi Adduction *Note: Right side exhibits significant weakness.
- Thoracic Flexion
- QL – “Hip-Hike” contraction/flexion

[Note: weaknesses in his Quadratus Lumborum, Abdominals and Hip Flexors are likely contributors in his overall postural issues too but are not fully addressed in this paper; these will hopefully, however, be incorporated into his long-range wellness program.

Range-of-Motion Joint Assessment September 27, 2005					
Joint	Norm ROM	ROM Left	+/- % Norm	ROM Right	+/- % Norm
<u>Shoulder</u>					
Horizontal Abduction Extension	40°	25°	63%	25°	63%
Horizontal Adduction Flexion	130°	135°	104%	135°	104%
Shoulder Flexion	180°	145°	81%	150°	83%
Shoulder Extension	50°	70°	140%	70°	140%
Internal (Medial) Rotation	80°	50°	63%	45°	56%
External (Lateral) Rotation	90°	90°	100%	90°	100%
Lattisimus Isolation	NA	NA		NA	
Middle Trapezius	NA	NA		NA	
<u>Cervical / Neck</u>					
Flexion	45°	60°	133%	60°	133%
Extension	55°	50°	91%	50°	91%
Lateral Flexion	45°	60°	133%	50°	111%
Rotation	70°	75°	107%	80°	114%
<u>Thoracic / Lumbar</u>					
Flexion	NSS 60° ^{AMA}	Fair	-	Fair	-
Extension - Upper	NA	Poor	--	Poor	--
Extension - Lower	NSS 25° ^{AMA}	Good	+	Good	+
Quadratus Lumborum	NSS	Fair	-	Poor	--

Muscle Test Strength Assessment September 27, 2005				
Joint	MT Left	% Strength	MT Right	% Strength
<u>Shoulder</u>				
Horizontal Abduction Extension	2.5	50%	2.5	50%
Horizontal Adduction Flexion	2.5	50%	2.5	50%
Shoulder Flexion	3.5	70%	3.5	70%
Shoulder Extension	4	80%	4	80%
Internal (Medial) Rotation	3	60%	3.5	70%
External (Lateral) Rotation	3	60%	3.5	70%
Lattisimus Isolation	3.5	70%	2	40%
Middle Trapezius	3.5	70%	3.5	70%
<u>Cervical / Neck</u>				
Flexion	3	60%	3	60%
Extension	4	80%	4	80%
Lateral Flexion	4	80%	3.5	70%
Rotation	2	40%	3	60%
<u>Thoracic / Lumbar</u>				
Flexion	1.5	30%	1.5	30%
Extension - Upper	3.5	70%	3.5	70%
Extension - Lower	4	80%	4	80%
Quadratus Lumborum	Fair	-	Poor	--

1-c – Summary of Findings

- What is tight?
- What is weak?
- What muscles need release?

As in Bill's case, his tightened muscles in the upper thoracic area have left his neck to take-on more of the physical demands than would normally be expected. Although the lower and upper neck are generally stiff for most individuals, segmental observation of Bill's neck movements appear to indicate stiffness in the lower and middle region; so his upper neck ends-up doing most the work and these segments are therefore predisposed to chronic tension. In addition, moderate muscle weaknesses have predisposed Bill to a greater chance of injury. Note: Bill's excess range-of-motion in rotation is likely due to some ligament weakness at C1/C2 (Atlas/Axis) – the primary joint of cervical rotation – or to compensatory lengthening in this region due to significant restriction/weakness in his lower cervical area. (Chiropractic advisory counsel consult)

His thoracic spine also restricts vertical arm flexion and vertical/lateral abduction, creating compression in the shoulders. To create space in the shoulder complex as the arm moves, it is necessary to open the chest to free up the scapulas to be able to move down and back for normal function.

Tension in his neck extensor muscles, the Upper Trapezius and the Levator Scapulae muscles, as well as Pectoralis Minor and Anterior Deltoid were described and identified during his initial assessment. General weakness was noticeable in his Cervical flexors, Lattisimus Dorsi, Shoulder complex, and Rectus Abdominus - *shortened-tight*.

The opposing cervical flexion groups (Longus Colli and Capitis) are most likely lax, and, including the Sternocleidomastoid, in need of strengthening as he exhibits weaknesses and range-of-motion issues. In the shoulder, the muscles in the front evidence tightness and hypertonic activity, while the extensors show weakness. The Thoracic Erector Spinae muscles appear to be inhibited; and his Lower Trapezius and Latissimus Dorsi weak in Scapula depression, adduction and shoulder depression respectively.

In Bill's case with his 'head forward' protruding, his muscles are under constant tension trying to maintain overall balance via *competing vectors of pull*. - adaptive shortening and lengthening of his tense muscles. The essential elastic nature of the muscles become either concentrically **locked-short** /shortened – *tight weakness*; or eccentrically **locked-long**/lengthened (beyond their physiological resting position) – *stretch weakness*. Pg. 18 Anatomy Trains.

These restrictions and weaknesses all play a critical role in Bill's **Cervical/Thoracic Tension Myalgia** and **Forward-Head** posture migration resulting in an **Upper Cross Syndrome**: *countering vector forces*.

The thoracic spine houses the upper 3rd and 4th Chakra, so very often those issues manifest as holding or restrictions, so bringing those issues to awareness is critical if long term opening is to be achieved. The 1st Chakra has to do with safety and security so stabilization is necessary for wellness and growth. "A closed Chakra is a chronic avoidance of certain energies, while an excessively open Chakra is a chronic fixation." Pg 26 Wheels of Life. When the Chakras are functioning normally the Nadis are nourished.

Asana alone will only provide limited benefit. Bill's ribs, diaphragm and breath in general need to expand with pranayama to open his intercostals, chest, lower cervical, upper back and heart.

For Bill the primary importance is to strengthen and lengthen respective joint articulation. There are some unilateral variations identified which will likely warrant some sided focusing.

<u>Strengthen</u>	<u>Lengthen</u>
Primary:	
❖ Cervical Flexion Rotation *Right weakness dominance.	❖ Cervical Extension
❖ Thoracic Extension ❖ Abdominal Flexion	❖ Thoracic Flexion ❖ Abdominal Extension
Secondary:	
❖ Scapula Adduction Depression	❖ Shoulder Horizontal Abduction Medial Rotation Flexion *Right ROM limitation.
❖ Shoulder: Horizontal Abduction / Adduction Vertical Adduction Internal Rotation Depression *Right weakness dominance.	

Reference Section 6 for specific muscles involved and theoretical recommendations.

1-d – Recommendations:

- Joint-Freeing Series at home: Focus on Cervical, Shoulder-Complex and Thoracic.
 - Cervical Flexion Strengthening and Extension Lengthening.
 - Chin-Tuck + small Lateral Circular Rotation directed by the nose.
 - Half-Forward Bend
 - Wall-Hang
- Yogasana: Done during weekly class to strengthen and lengthen compromised joint articulations. Repetitions of three coordinated with lengthened breath are instructed to facilitate neuromuscular re-education. [See Section 6 for respective benefits]
 - Salabhasana (Locust)
 - Note: Externally rotate @ 45° and thumbs facing up to activate Lower Trapezius; sweep arms like a “snow-angel.”
 - Paripurna Navasana (Prone-Boat) aka Purna Shalabhasana (Full Locust)
 - Note: Externally rotate arms @ 45° to activate Lower Trapezius.
 - Bhujangasana (Cobra)
 - Note: Externally rotate arms @ 45° to activate Lower Trapezius
 - Sphinx
 - Bidalasana (Cat-Bow + Horse-Biting Tail)
 - Note: Externally rotate arms @ 45° to activate Lower Trapezius.
 - Adho Mukha Svanasana (Down-Facing Dog) Down-Facing Dog)
 - Note: Externally rotate arms @ 45° and place hands double shoulder-width to activate Lower & Middle Trapezius. Due to hamstring tightness it is important to maintain knees bent.
 - Urdhva Muka Svanasana (Up-Facing Dog)
 - Setu-Bandhasana (Bridge) *Rolling-Bridge version.
 - Dandasana (Seated Stick)

- Jathara-Parivartanasana (Abdominal Twist)
- Savasana (Relax pose)

Primary – Goals:

With the pectorals and upper trapezius tight and shortened, the neck flexors and posterior mid-back muscles weak (the crossing-lines of shortening and weakening), and a head and shoulder forward posture:

- Improve Mental and Physical AWARENESS!
 - The thoracic spine houses the upper 3rd and 4th Chakra, so very often those issues manifest as holding or restrictions, so bringing those issues to awareness is critical if long term opening is to be achieved. The 1st Chakra has to do with safety and security so stabilization is necessary for wellness and growth. “The task of mastering the 1st Chakra is ultimately to understand and heal the body.” Pg 77 Wheels of Life
- Enhance and deepen respiration.
- Increase strength of Lower and Middle Trapezius, Neck Flexors, Serratus Anterior
- Stretch Tight Muscles: Upper Trapezius, Levator Scapula, Sub Occipitals, SCM, Anterior Deltoid, Pectoralis Major (lower fibers), Pectoralis Minor and Anterior Deltoid.
- Strengthen Spinal Stabilizers / Extensors
- Increase proprioception
- Correct Spinal Biomechanics

1-e – Results of Recommendations

Bill has been practicing yoga for nearly three decades which began at IYI, and has maintained a meditation practice as well – both of which have been very helpful, albeit intermittent. Although semi-private weekly yoga teaching and consult has been available, he has been unable to maintain a consistent practice for personal reasons.

Two poses which Bill feels an attachment towards are the *Plough* and *Headstand* which are contraindicated for individuals with cervical-thoracic discomfort and will likely aggravate his mid-back tension if continued. Each posture places undue strain on the mid-cervical and upper-thoracic area as highlighted in the physical assessment findings (*AHISHMA*). Bill used to easily complete these poses but whether due to lack of practice and/or development of muscular weaknesses and imbalances, cannot find the same ease and it appears that his past flexibility “performance” - a metric of success –is playing a role in gauging his definition of success.

Receiving weekly body-work has been and will continue to be a tremendous benefit symptomatic of his doshic imbalance. The detached sensation Bill experiences, however, may also play a role in disabling him from experiencing strengthening and lengthening areas of weakness.

The primary focus and most important aspect to Bill’s improvement is to provide him with the space to express himself, identify his boundaries, feel safe and foster confidence. This space is where Bill will be able to identify and nourish his own growth and improvement – if desired.

“When we know our freedom is respected, we can more easily make a commitment.” Pg. 247 Eastern Body Western Mind

Between our initial meeting in May 2005 and the present Bill has been open and expressive. Our collective friendship (Vata SYT relationship) with my partner and I has been warm and inviting and we are grateful for our ongoing development and progress which Bill has played a significant role – graciously.

In his heart and mind Bill is sincere; however, he has had difficulty maintaining these practices and appears to be struggling with ongoing doshic imbalances. Although Bill's continues to spread himself thinly, scatter his attention and energy, and expresses physical discomfort in the areas described, he has softened his boundaries and is developing increased comfort and confidence with his practice. [Note: Bill prefers one-on-one therapy instruction and attention.].

"When the body is neither safe nor comfortable ... energy is redirected to the head." Pg 75 Wheels of Life

As of March 2006 Bill has been attending class regularly and has been focused throughout – not characteristic of what has been his imbalance. This is a significant improvement in his subtler doshic disposition. Not only has there been an improvement in pranic harmonization, he is also becoming more confident and determined. He has verbally described how pleased he is with the format of SYT instruction and feels that this therapeutic process is "exactly" what he needs to improve, not only the assessed concerns but also for his personal needs. Bill finds that visual cuing and hands-on therapeutic adjustments have given him greater safety, security, support and confidence. This format seems to facilitate a *consistent* and *earnest practice* for Bill. **At this point in time, however, it is not prudent to complete a follow-up physical assessment as there has been insufficient practice to depend upon for reliable results. Initially the improvement process had been somewhat intimidating and had distracted him from an environment of safety to develop and implement his practice. Follow-up will be based upon greater consistency and confidence which will require one-on-one intervention and patience.**

❖ **Case study # 2:** "Ron" November 8th, 2005

1-a – Initial intake

- Review of symptoms,
- Subjective pain level,
- Client Self Assessment

Ron is 61 years in age who is a successful self-employed attorney. Although Ron is dedicated to his profession, parameters for his home and family life are healthy. He was previously married with two sons – one in his 30's living in Los Angelis, and one in his 20's attending graduate school in Virginia. He has remarried with his long standing relationship and loving wife (co-partner of the previous client discussed in this paper) with whom they have two daughters.

Ron and his wife have had a long-standing relationship and recently married in 2005. They have also moved out of the City and are currently renting a home as their newly acquired home is under a comprehensive renovation; this has disposed them and the children to living in "tight quarters" until their true home is completed.

I was first introduced to Ron in October 2005 and am still getting to know him on various levels. Over a relatively short period of time I have developed a deeper relationship with him while attending to his yogic needs. In November 2005 I asked Ron if he would be interested in volunteering as a case-study for my studies and he willingly accepted the offer. Postural assessment, range-of-motion and muscle testing were completed and shortly thereafter a prescription provided with his acknowledgement to implement with ongoing follow-up for improvements with modifications and adjustments to best serve his needs.

Ron is a giving and open hearted individual with an open mind. Generally speaking, he is a quiet reserved person whom has been opening up with each class. In part he contributes his drive and

openness to his wife with whom he attends weekly yoga class. As Ron states, he would not be coming to class if it were not for his wife's diligence.

Ron developed Diabetes in the early 80's as well as high cholesterol – both of which he takes prescribed oral medication. In addition he takes a blood thinner to synergistically work with the diabetes medications.

Upon arising at 4am in the morn each day, Ron would have several cups of coffee but until recently – January 2006 - has cut this down to one large cup. He does not consume much vegetables or fruits and has less than the norm of fluids – water – the later of which has improved.

To the present Ron has had moderate difficulty with kinaesthetic awareness. He intellectualizes his non-descriptive muscle weaknesses and limited range-of-motion. In part, this is due to the fact that Ron has only recently been internalizing and personalizing his experiential mind-body awareness. Analyzing his body movements (Kapha) in the poses has brought attention to the articulation/action of his joints and the concomitant strengths and weaknesses.

Ron has indicated he has cramps in both feet in the morning and wears prescribed orthotics due to flat feet – which he feels has helped in daily activities. In addition he indicated that in his 20's he had been shouldering a handbag on his right shoulder which lead to significant pain to the point where circulation has decreased and he thought he was having heart problems. This was resolved by alternative and modification changes in carrying his load.

Holiday, personal and business issues had precluded Ron from fully committing himself to the SYT prescription. This February 2006 Ron has been more consistent and has developed a renewed commitment. He has been very receptive to the hands-on teaching and is looking forward to continuing his personal learning and growth. Triangulation of the following questions highlights the physical manifestation of Ron's doshic imbalance which is outlined under Section 3.

- **WHAT DO YOU FEEL? *NOT SURE***
 - Ron is not sure what he feels. He intellectual knows his limited range of motion and mild-moderate weaknesses but has no reference, nor kinesthetic awareness.
 - Although he is aware of his muscle weaknesses he did not mention them until identified.
- **WHAT DOES THE FEELING WANT?**
 - Ron is not sure because he is only beginning to become aware of his body and adopting this personal experience through questioning.
- **WHERE DOES THE FEELING WANT TO GO?**
 - Ron is not sure of the direction but seems to want to go into his head to circumnavigate his kinesthetic process of awareness.

1-b – SYT Physical Assessment:

- Posture Body Reading Assessment
- Range of Motion Exam
- Muscle Test

Postural Assessment:

Ron's physical constitution most resembles a Kapha dosha of medium height, stocky build with medium muscle tone, balding with pale skin tones. Ron's habits and occupation likely contribute to the portions of his body that over time have caused postural compensation and alterations due to stiff joints. His personal habits such deviated workstation set-up and day-to-day sitting for

extended periods of time have predisposed him to postural distortions. These changes in position and function have caused some moderate biomechanical changes and joint complex dysfunction. In Ron's circumstance he exhibits some muscular weaknesses and moderate amount of range-of-motion limitations which likely contribute to his chronic neck and shoulder tension.

Ron evidences cervical-thoracic myalgia symptoms with **forward-head** protrusion body readings. Ron has never been an active person and has indicated he has never actively stretched. Postural assessment, ROM and MT revealed that he has limited kinaesthetic awareness which has presented him with the added challenge of intellectualizing.

Ron's posture assessment clearly evidences a forward-head projection with moderate cervical lordosis; mild kyphosis with some sway-back postural stance; slight rounding and elevation of his shoulders with winging-scapula; limited elbow extension; moderate palm/finger flexion; moderate knee flexion; flattened lumbar lordosis; his feet externally rotate while standing and both feet are noticeably flat – left foot has a fallen-arch; and lastly, he evidences ankle dorsiflexion – due likely to excessive tightness in his anterior tibialis - which results in compensatory knee flexion. Faulty recruiting patterns have lead to kinetic postural deviations. Ron's recent back-to-back right ankle sprains are likely due to his limited range-of-motion and muscular weaknesses.

Sacro-Iliac mobilization SI lift, Left SI drops while completing left hip flexion and vice versa with the Right – SI dips while performing right hip flexion. Scoliometer shows < 5° variance over the spinal column.

The task of 'sitting-up' reveals limited vertebral range-of-motion flexion and seems weak in the abdominals and tight in the Mid-Thoracic region.

SYT Postural Observation:

Ron exhibits Right-Sided Neck / Thoracic chronic tension discomfort.

- Slightly Rounded Shoulders
- Slightly Elevated Shoulders
- Slight Scapulae Winging
- Slight Kyphosis / Sway-Back Posture
- Forward Head Extension



Range of Motion Assessment: Soft-tissue exam included range of motion in all directions of movement for all joints being tested. The range of motion of the joints above and below the area of exhibit strain was as important as the area of strain – cervical neck tension. In this case, the

focus of the soft-tissue exam included range of motion for the neck as well as both shoulders and the upper back.

Muscle Test: Muscular strength assessment focused on several upper extremity range-of-motion articulations. Most notable was inefficient forward-head postural deviation as a likely compensatory reaction to expressed strain and postural assessment.

Range-of-Motion Joint Assessment November 8th, 2005					
Joint	Norm ROM	ROM Left	+/- % Norm	ROM Right	+/- % Norm
<u>Shoulder</u>					
Horizontal Abduction Extension	40°	20	50%	20	50%
Horizontal Adduction Flexion	130°	110	85%	115	88%
Shoulder Flexion	180°	155	86%	160	89%
Shoulder Extension	50°	55	110%	55	110%
Internal (Medial) Rotation	80°	45	56%	55	69%
External (Lateral) Rotation	90°	85	94%	85	94%
Lattisimus Isolation	NSS	NA		NA	
Middle Trapezius	NSS	NA		NA	
<u>Cervical / Neck</u>					
Flexion	45°	55	122%	55	122%
Extension	55°	25	45%	25	45%
Lateral Flexion	45°	35	78%	35	78%
Rotation	70°	55	79%	55	79%
<u>Thoracic / Lumbar Spine</u>					
Flexion	NSS 60° _{AMA}	Fair	-	Fair	-
Extension Upper		Fair	-	Fair	-
Extension Lower	NSS 25° _{AMA}	Fair	-	Fair	-
Quadratus Lumborum	NSS	Poor	--	Poor	--

Muscle Test Strength Assessment November 8th, 2005				
Joint	MT Left	+/-%	MT Right	+/-%
<u>Shoulder</u>				
Horizontal Abduction Extension	2	40%	2	40%
Horizontal Adduction Flexion	2	40%	2	40%
Shoulder Flexion	3	60%	4	80%
Shoulder Extension	1.5	30%	2	40%
Internal (Medial) Rotation	4	80%	4	80%
External (Lateral) Rotation	4	80%	4	80%
Lattisimus Isolation	3	60%	3	60%
Middle Trapezius	3.5	70%	3.5	70%
<u>Cervical / Neck</u>				
Flexion	4	80%	4	80%
Extension	5	100%	5	100%
Lateral Flexion	4	80%	4	80%
Rotation	3.5	70%	3.5	70%
<u>Thoracic / Lumbar Spine</u>				
Flexion	2	40%	2	40%
Extension Upper	5	100%	5	100%
Extension Lower	5	100%	5	100%
Quadratus Lumborum	0*	0%	0*	0%

Although Ron evidences a number of range-of-motion deficiencies, most notable are:

- Neck Extension
- Neck Lateral Flexion
- Neck Rotation
- Horizontal Shoulder Abduction Extension
- Horizontal Shoulder Adduction Flexion
- Shoulder Flexion
- Shoulder Internal (Medial) Rotation
- Neck Flexion - *Excess
- Upper Thoracic Extension
- Thoracic Flexion
- QL – “hip-hike”

[Note: weaknesses in his Quadratus Lumborum, Abdominals and Hip Flexors are likely contributors in his overall postural issues too but are not fully addressed in this paper but will be in his long-range wellness program.]

In addition, Ron evidences some muscle strength deficiencies, most notable are:

- Horizontal Abduction Shoulder Extension
- Horizontal Adduction Shoulder Flexion
- Shoulder Flexion – **LEFT**
- Shoulder Extension
- Vertical (Lateral) Shoulder Abduction
- Vertical (Medial) Shoulder Adduction – Lattisimus
- Neck Rotation
- Thoracic Flexion
- QL – “Hip-Hike” contraction/flexion

1-c – Summary of Findings

In Ron’s case, tightened muscles in his upper thoracic area have also left his neck and low back to take-on more load demand than normal. Although the lower and upper neck are generally stiff for most individuals, in Ron’s case segmental observation of his neck movements indicate ROM stiffness in extension and lateral flexion. In addition, shoulder-complex and thoracic stiffness are evidenced. These stress factors appear to transfer to-and-from his legs and feet which have significant range-of-motion limitations and are his core-base foundation. His upper back ends-up doing most of the work and these segments are therefore predisposed to cumulative overuse.

In addition, moderate muscle weaknesses in shoulder horizontal adduction and vertical adduction as well as cervical rotation contribute to Ron’s postural issues and a greater chance of injury. His thoracic spine also restricts vertical arm flexion and vertical/lateral abduction, creating impingement or compression in the shoulders. To create space as the arm moves into flexion or extension or the shoulder into elevation or depression, it is also necessary to open the chest to free up the scapula to be able to move down and back for normal function.

The thoracic spine houses the upper 3rd and 4th Chakra, so very often those issues manifest as holding or restrictions, so bringing those issues to awareness is critical if long term opening is to be achieved. The 1st Chakra has to do with safety and security so stabilization is necessary for wellness and growth. “A closed Chakra is a chronic avoidance of certain energies, while an excessively open Chakra is a chronic fixation.” Pg 26 Wheels of Life
When the Chakras are functioning normally the Nadis are nourished.

For Ron the primary importance is to strengthen and lengthen respective joint articulation:

<u>Strengthen</u>	<u>Lengthen</u>
Primary:	
❖ Cervical Rotation	❖ Cervical Extension Lateral Flexion
❖ Thoracic Extension ❖ Abdominal Flexion	❖ Thoracic Flexion ❖ Abdominal Extension
Secondary:	
❖ Scapula Adduction Depression	❖ Shoulder Horizontal Adduction / Abduction Flexion Medial Rotation
❖ Shoulder: Horizontal Abduction / Adduction Vertical Adduction	

Reference Section 6 for specific muscles involved and theoretical recommendations.

Tension in his neck extensor muscles, the Upper Trapezius and the Levator Scapula muscles, as well as Pectoralis Minor and Anterior Deltoid were identified during his initial assessment. General weakness was noticeable in his Shoulder-complex, Lattisimus Dorsi, and Rectus Abdominus - *shortened-tight*.

The opposing cervical flexion groups (Longus Colli and Capitis) are most likely lax, and, including the Sternocleidomastoid, in need of strengthening as he exhibits weaknesses and motion limitations. In the shoulder, the muscles in the front evidence tightness and hypertonic activity, while the extensors show weakness. The Thoracic Erector Spinae muscles appear to be inhibited; and his Lower Trapezius and Latissimus Dorsi weak in Scapula depression and shoulder depression respectively.

In Ron's case with his 'head forward' protruding, his muscles are under constant tension trying to maintain overall balance via competing vectors of pull. - *adaptive shortening and lengthening* of his muscles. The essential elastic nature of the muscles become either concentrically **locked-short** /shortened – *tight weakness* - or eccentrically **locked-long**/lengthened (beyond their physiological resting position) – *stretch weakness*. Pg. 18 Anatomy Trains

These restrictions and weakness all play a critical role in Ron's **Cervical/Thoracic Tension Myalgia** and **Forward Head** Posture migration resulting in an **Upper Cross Syndrome**: *countering vector forces*.

Asana alone will only provide limited benefit. Ron's ribs, diaphragm and breath in general need to expand with pranayama to open his intercostals, chest, lower cervical, upper back and heart.

For Ron the primary importance is to lengthen respective joint articulation with increasing frequency and moderate intensity. There are some unilateral variations identified which will likely warrant some sidedness focusing.

1-d – Recommendations

- Joint-Freeing Series at home: Focus on Cervical, Shoulder-Complex and Thoracic.
 - Cervical Flexion Strengthening and Extension Lengthening.
 - Chin-Tuck + small Lateral Circular Rotation directed by the nose.
 - Half-Forward Bend
 - Wall-Hang
- Yogasana: Done during weekly class to strengthen and lengthen compromised joint articulations. Repetitions of three coordinated with lengthened breath are instructed to facilitate neuromuscular re-education. [See Section 6 for respective benefits]
 - Salabhasana (Locust)
 - Note: Externally rotate @ 45° and thumbs facing up to activate Lower Trapezius; sweep arms like a “snow-angel.”
 - Paripurna Navasana (Prone-Boat) aka Purna Shalabhasana (Full Locust)
 - Note: Externally rotate arms @ 45° to activate Lower Trapezius.
 - Bhujangasana (Cobra)
 - Note: Externally rotate arms @ 45° to activate Lower Trapezius
 - Sphinx
 - Bidalasana (Cat-Bow + *Horse-Biting Tail*)
 - Note: Externally rotate arms @ 45° to activate Lower Trapezius.
 - Adho Mukha Svanasana (Down-Facing Dog) Down-Facing Dog)
 - Note: Externally rotate arms @ 45° and place hands double shoulder-width to activate Lower & Middle Trapezius. Due to hamstring tightness it is important to maintain knees bent.
 - Urdhva Muka Svanasana (Up-Facing Dog)
 - Setu-Bandhasana (Bridge) *Rolling-Bridge version.
 - Dandasana (Seated Stick)
 - Jathara-Parivartanasana (Abdominal Twist)
 - Savasana (Relax pose)

Primary – Goals:

With the pectorals and upper trapezius tight, the neck flexors and posterior mid-back muscles weak (the crossing lines of shortening and weakening), and a head and shoulder forward posture:

- Improve Mental and Physical AWARENESS!
 - The thoracic spine houses the upper 3rd and 4th Chakra, so very often those issues manifest as holding or restrictions, so bringing those issues to awareness is critical if long term opening is to be achieved. The 1st Chakra has to do with safety and security so stabilization is necessary for wellness and growth. “The task of mastering the 1st Chakra is ultimately to understand and heal the body.” Pg 77 Wheels of Life
- Enhance and deepen respiration – increase intercostals elasticity.
- Increase strength of Lower and Middle Trapezius, Neck Flexors, Latisimus Dorsi.
- Stretch Tight Muscles: Upper Trapezius, Levator Scapula, Sub Occipitals, SCM, Pectoralis Major (lower fibers), Pectoralis Minor, Latissimus Dorsi and Triceps Long-Head.
- Strengthen Spinal Stabilizers / Erectors
- Increase proprioception
- Correct Spinal Biomechanics

1-e – Results of Recommendations

The primary focus has been / is to provide Ron with the space to express himself, identify his boundaries and feel safe. Between our initial meeting in October 2005 and the present Ron has been open and expressive during our weekly classes. He has felt a friendship (Vata) as well as an advisory (Kapha) relationship. He admits that he would not have attended yoga if it were not for his wife who is a motivating influence in his life. Ron had been diligent in coming to class for several months until family and holiday commitments interceded, which had likely elevated his Kapha imbalance. He has not been implementing the JFS offered. Recently, however, Ron has reinitiated his commitment and has implemented some of the JFS into his daily life activities.

Ron's Vata imbalance has begun to show harmonization with greater enthusiasm and imagination since first attending class. His sense of humor is continually revealing and his overall sense of presence and physical awareness has deepened significantly in a relatively short period of time. He has become more expressive about his personal life. Recent physical improvements and achievements have yielded enthusiasm which he has gladly and graciously shared. The presence, consistent and earnest practice of his wife provides the supportive aspect needed for his doshic archetype. The most notable success is observed during Savasana as he yawns with noticeable twitching; this appears to reflect some releasing and harmonizing as well as comfort within himself.

The following table outlines comparative muscle test and range-of-motion test results completed November 8th, 2005 and March 7th, 2006.

November 8 th 2005 vs. March 7 th , 2006							
<u>Joint</u>	<u>Norm</u>	<u>ROM Left</u>			<u>ROM Right</u>		
		11- 08'05	03-07-06	↑ ↓	11- 08'05	03-07-06	↑ (
<u>Shoulder</u>							
Horizontal Abduction	40°	20	20	(20	20	≈
Horizontal Adduction	130°	110	115	↑	115	110	↓
Shoulder Flexion	180°	155	155	≈	160	155	↓
Shoulder Extension	50°	55	55	≈	55	55	≈
Internal _(Medial) Rotation	80°	45	45	≈	55	45	↓
External _(Lateral) Rotation	90°	85	85	≈	85	85	≈
Lattisimus Isolation	NSS	NA	NA		NA	NA	
Middle Trapezius	NSS	NA	NA		NA	NA	
<u>Cervical / Neck</u>							
Flexion	45°	55	60	↑	55	60	↑
Extension	55°	25	50	↑	25	50	↑
Lateral Flexion	45°	35	50	↑	35	50	↑
Rotation	70°	55	75	↑	55	60	↑
<u>Thoracic / Lumbar Spine</u>							
Flexion	NSS 60° _{AMA}	Fair	Fair	≈	Fair	Fair	≈
Extension Upper		Fair	Fair	≈	Fair	Fair	≈
Extension Lower	NSS 25° _{AMA}	Fair	Fair	≈	Fair	Fair	≈
Quadratus Lumborum	NSS	Poor	Fair	↑	Poor	Fair	↑

November 8th 2005 vs. March 7th, 2006						
<u>Joint</u>	MT Left			MT Right		
	11- 08'2005	03-07-2006	↑ ↓	11- 08-2005	03-07-2006	↑ ↓
Shoulder						
Horizontal Abduction	2	3.5	↑	2	3.5	↑
Horizontal Adduction	2	3.5	↑	2	3	↑
Shoulder Flexion	3	5	↑	4	4.5	↑
Shoulder Extension	1.5	4	↑	2	4	↑
Internal _(Medial) Rotation	4	4	≈	4	4	≈
External _(Lateral) Rotation	4	4	≈	4	4	≈
Lattisimus Isolation	3	4	↑	3	4	↑
Middle Trapezius	3.5	3.5	≈	3.5	3.5	≈
Cervical / Neck						
Flexion	4	3	↓	4	3	↓
Extension	5	5	≈	5	5	≈
Lateral Flexion	4	5	↑	4	5	↑
Rotation	3.5	3	↓	3.5	3	↓
<u>Thoracic / Lumbar Spine</u>						
Flexion	2	3	↑	2	3	↑
Extension Upper	5	5	≈	5	5	≈
Extension Lower	5	5	≈	5	5	≈
Quadratus Lumborum	0*	1	↑	0*	0*	≈

Ron has evidenced several improvements in muscle testing and range-of-motion deficiencies previously identified, most notable are:

- Neck Extension
- Neck Lateral Flexion
- Neck Rotation - *muscle strengthen decreased, however, and will be re-emphasized!
- Horizontal Shoulder Abduction Extension
- Horizontal Shoulder Adduction Flexion
- Shoulder Flexion
- Shoulder Internal (Medial) Rotation

**Note: Neck Flexion muscle strength decreased, however, and will be re-emphasized!

These results show that with a modicum of consistent and earnest practice, albeit weekly, improvements will manifest. Ron has shown not only postural improvements in his *forward-head* positioning, but has also visually evidenced and personally described postural ease which includes greater strength and range-of-motion. The most important aspect of Ron's journey has been his enjoyment and personal inner validation with the improvements noted which will continue with ongoing refinements and eventual autonomy in his yoga Sadhana. Evidenced by his inner drive to attend to his yoga practice in class as well as his growing confidence, Ron is continually developing a kinesthetic understanding and awareness of his body which is bridging his mind-body intra-relationship for his overall well-being.

2. Condition:

2-a - Name and description

Cervical – Thoracic Myalgia - also known as **trapezius myalgia, neck tension syndrome, cervical strain** - involves recurrent pain in the trapezius muscle, located between the shoulder and neck. This is the most common form of back pain among office workers adopting awkward and stressful postures in an effort to accomplish their tasks whether due to deficient workstation set-up or ineffective administrative education and follow-through leading to task-performance stresses. This is frequently translated in day-to-day personal task stressors.

It is often seen and described as **Forward Head Syndrome** which is a progressive condition where your head begins to shift forward on the neck and shoulders. As the head shifts forward, it distorts one's posture and consequently weakens overall health. *Forward Head Syndrome* is one of the most common postural problems. It is estimated that 66% of the population suffers from this syndrome in varying degrees. References:

Postural and Respiratory Modulation of Autonomic Function, Pain & Health. AJPM Vol 4, No. 1 January 1994 John Lennon, BM, MM, C. Norman Shealy, MD, Roger K. Cady, MD, William Mata, PhD, Richard Cox, PhD, and William F. Simpson, PhD.

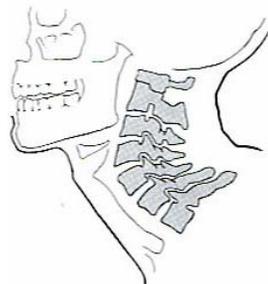
The term **Upper Cross Syndrome** is used in the exercise field to describe this forward shift of the head with shoulders rounded. It is the weakening and lengthening of the posterior upper-back and neck musculature, and the tightening and shortening of the anterior and opposing musculature. It depresses the sternum which effects breathing and overall posture.

How do you know if you have *Upper Cross Syndrome*?

- You will see your head going forward, increased cervical/neck curve, protracted shoulders and increased thoracic (mid-back) kyphosis (curve). This is the beginning of the upper cross syndrome.

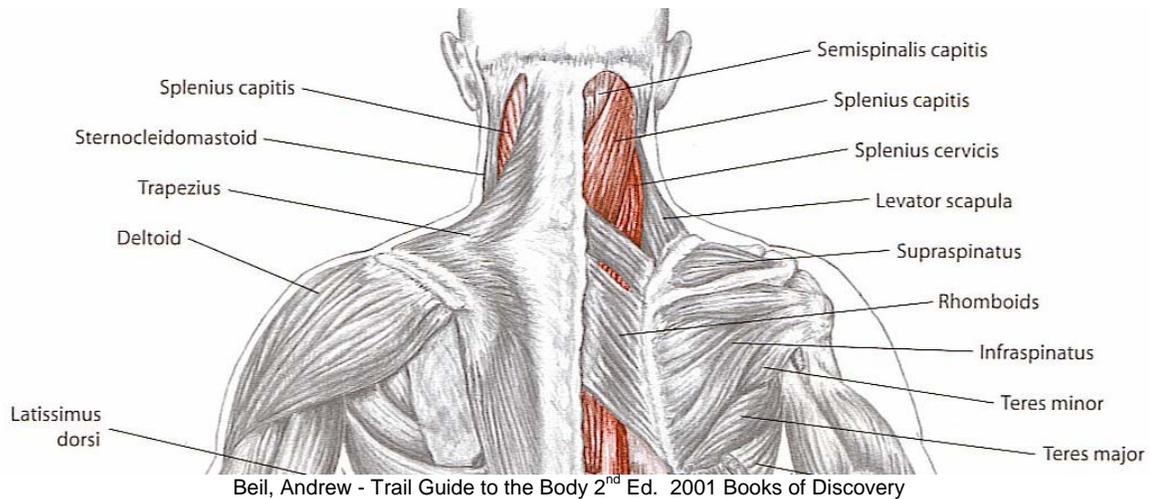
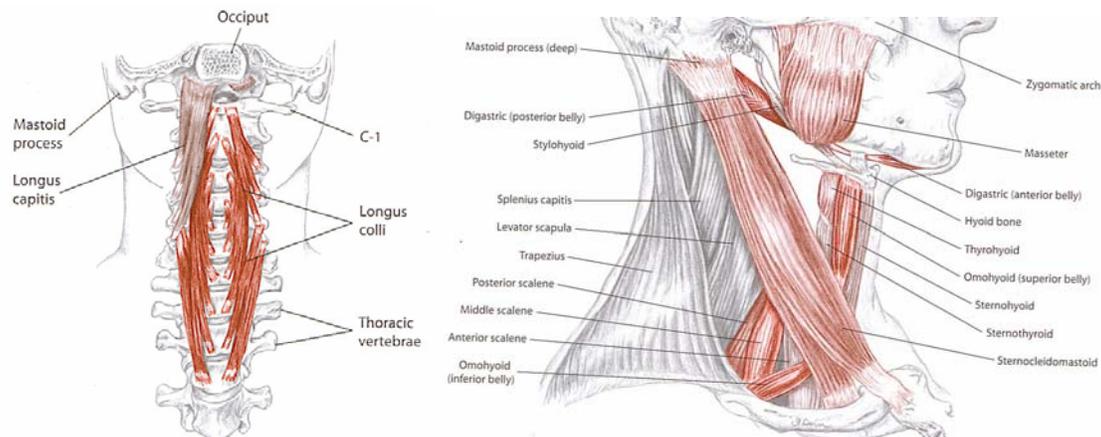
Who are at risk of this *Upper Cross Syndrome*?

- Workers who sit in a slouched or leaning over position, e.g. drivers, computer and desk bound office workers and the list goes on.....
- Workers who stand a lot during the day with chin poked up and shoulders rolled forward e.g. laboratory technicians, teachers etc.
- Women who wear high-heel shoes; Cyclists; Children and Adults wearing heavy Back-Packs...



Extension of cervical spine in faulty posture with round upper back and forward head.

Kendall, FP - Muscle Testing & Function 4th Ed '83 Pg. 74



2-b – Gross and Subtle Body Common Symptoms

A person's head weighs about 7½% of their total body weight and if the head is shifted forward it adds exponential weight – upwards of 30% - particularly at the vertebral disc fulcrum. Compensatory imbalances of the head, neck, shoulder, torso and waist adds compressive, tensile and shear stresses which leads to accelerated wear and tear on respective joints, muscles and connective tissue.

Unable to adequately lift the chest while extending the spine requires them to hyperextend the head and neck, which then jams their neck into an unnatural position by shear and compressive forces at the cervical area. www.surfflex.com C.H.E.K.

The Upper Trapezius, Levator Scapula and Splenius Capitis - counter-part to SCM which parallels the Levator Scapula - counters cervical pull and takes on the instability in the Cervical – Thoracic area. Because the Scapula does not have a firm base of support it often is pulled-up resulting in trigger point pain and 'head forward' posturing. Pg. 129 Anatomy Trains

The other leg of the Scapula "X" consists of a mechanical connection through the Scapula between the lower part of the Trapezius in the back and the Pectoralis Minor in the front." Pg. 178 Anatomy Trains

The Scalenes form a kind of skirt around the cervical vertebra, acting to create [a suspension between the QL pulling from one end and the Scalenes the other].

We can also see another leg of an "X" parallel to but deeper to the SCM. This innermost layer consists of the Anterior Scalene muscle, running up and back from the 1st rib to the transverse processes of the middle cervicals. The pull of this muscle forms a functional connection, if not a fascial continuity, with the Sub-Occipital muscles... These muscles take the occiput into protraction or anterior translation, and the Upper Cervical joints into hyperextension, while the Anterior Scalene pulls the Lower Cervicals into flexion. The combination helps to contribute to a familiar form of the **head forward posture**. Pg. 131 Anatomy Trains

These muscle imbalances develop into the very common postural pattern of forward shoulders and increased Kyphosis, with a forward head posture. Treatment for these areas are important to allow optimal upper extremity posture. Pg. 339-340 Muscle Testing & Function

Whether due to stress or poor head-neck alignment, chronic muscular tension – be it shortened or lengthened - can lead to significant neck pain. As the muscles pull down on the base of the skull and upper neck, they also pull up on the Scapula. All this adds up to compression on the cervical vertebra.

As we repeatedly stand, sit and slouch throughout a typical workday, our neck curve is forced to repetitively translate posteriorly. Long hours of passive sitting at the computer, or leaning over therapy tables, create stretch weakness in the rhomboids and lower trapezius. This repetitive physical practice contributes to forward dragging of the shoulder girdle due to the pectorals propensity for domination. Tight albeit weak latissimus dorsi and subscapularis muscles unite with the clavicular head of pectoralis major to internally rotate the humerus. With the scapulae protracted and the arms internally rotated, the neck reluctantly moves forward on the shoulders often forming the unattractive kyphotic hump. Unfortunately, as the spinal facet joints slide open, the cervical curve loses its lordosis and transforms to a typical straight cervical curve. To prevent the person from only looking at the ground, the brain recruits the suboccipitals and other capital extensor muscles to cock the head back into hyperextension. As the occiput hyperextends and slides forward on the atlas vertebra, the posterior occipital atlantal membrane is squashed along with local neural and vascular structures.

<http://www.massagetoday.com/archives/2003/01/02.html>

"Neck pain and headaches associated with tightness in the posterior neck muscles are found most often in patients who have a *forward head* and round upper back." "The compensatory head position associated with a slumped, round upper back results in a position of extension of the cervical spine." "The faulty mechanics associated with this condition consists chiefly of undue compression posteriorly on the articulating facets and posterior surfaces of the bodies of the vertebrae, stretch weakness of anterior vertebral neck flexors, and tightness of neck extensors including the Upper Trapezius, Splenius Capitis and Semispinalis Capitis."

Pg 341 Muscles Testing and Function.

The focal on the pelvis as well as the chest at the first rib [Sternal Manubrium] plays an important role in postural balance. The chest at the first rib is where there is a confluence of meridians, blood vessels, nerves and muscles. Poor posture in this area is often due to lack of awareness. Eric Franklin '02 Pelvic Power for Men & Women: Mind/Body Exercises for Strength, Flexibility, Posture & Balance Pg 76



2—34. Weak lower trapezius fails to support thoracic spine, and kyphosis results.



2—35. Forward head position from weak cervical extensors.

“Unilateral tightness in posteriorlateral neck muscles is increasing commonplace as a result of holding a telephone on the shoulder.”

“The Scapula muscle that is the most direct opponent of the Upper Trapezius is the Lower Trapezius which acts to depress the Scapula posteriorly. The most direct opponent of the Upper Trapezius acting to depress the Shoulder-Girdle directly downward in the coronal plane is the Latissimus Dorsi. Tests of this muscle often reveal weakness on the side of the elevated shoulder, and exercises to strengthen this muscle are indicated along with exercises to stretch the Lateral Neck Flexors {e.g. stretch Upper Trapezius by strengthening the Latissimus Dorsi: Dandasana body lift}.” Pg. 342 Muscles Testing and Function.

Latissimus Dorsi shortness “results in a limitation of elevation of the arm in flexion or abduction.” “The anterior fibers are shortened bilaterally in marked Kyphosis.” Pg. 279 Muscles Testing and Function.

2-c - Related Challenges

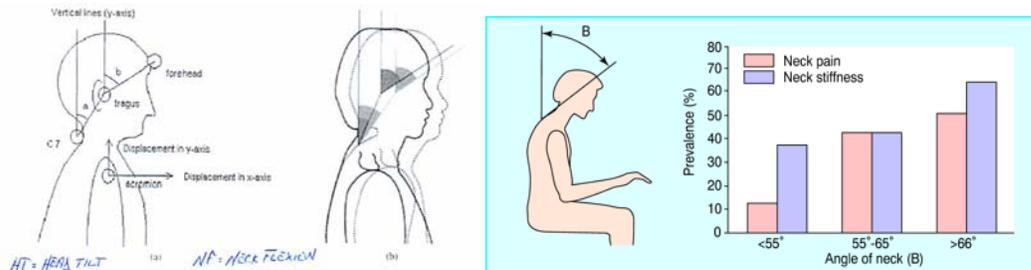
Although kinesthetic and pranic awareness of self are the main means for communicating with the brain in order to bring about lasting change, transference to other areas of one’s life is often fraught with inconsistencies which often result in fractioned development. This is due in large part to our perception and mindfulness.

Abhyasa Vairagyabhyam Tan-Nirodhah
YS I 12

*The vacillating waves of perception
are stilled through
consistent earnest practice
and
dispassionate non-attachment.*

Stiles, Mukunda. Yoga Sutras of Patanjali
Boston: Weiser Books, 2002, pg. 4.

Invariably inefficient task performance and habits resulting in constrained postures and a static load for the neck and arms due to prolonged static contraction of the upper trapezius muscle during work or daily activity result in an overload on muscle fibres, which results in a recruitment pattern in which selective fatigue and eventual damage to the fibres occurs.



Association between neck flexion and pain and stiffness in neck.

ABC of Work Related Disorders: Neck and arm disorders *BMJ* 1996;313:419-422 (17 August)

Muscle fascia is one of three connective tissues [plus Tendons & Ligaments] that affects flexibility, and by far the most important. Almost every yogasana improves the cellular quality of this tissue, which transmits movement and provides muscular lubrication and healing agents.

Fascia makes up as much as 30 percent of a muscle's total mass, and, according to studies cited in *Science of Flexibility*, it accounts for approximately 41 percent of a muscle's total resistance to movement. Fascia is the stuff that separates individual muscle fibers and bundles them into working units, providing structure and transmitting force.

Many of the benefits derived from muscular lengthening are related to the healthy stimulation of fascia. David Coulter, author of *Anatomy of Hatha Yoga*, reflects this in his description of the asanas as "a careful tending to your internal knitting."

Fernando Pagés Ruiz: *What Science Can Teach Us About Flexibility*

Myofascia can become fibrotic when traumatized or when subjected to chronic strain. When fascia remains immobile for a time cross-bindings can form reducing the flexibility of the fascia at least in part by restricting gliding between fascia sheets. The tissue becomes less elastic because the collagen fibers and fascia sheets lose the ability to slide freely along one another as though the tissue has lost its' lubricating factor.

As the collagen fibers shorten, the pressure within the myofascial tissue will increase which in turn compress the arteries, veins, and lymphatics that course through the contracting tissue. This will create **ischemia** and, again, will induce energy-deficient contractures and trigger points. Fibrous tissue adapting this way to a mechanical load imposed on the cervico-thoracic spine muscles is especially prominent – as with Bill and Ron - who project their head out in front of the gravity line. Sustained guide-wiring of a forward projecting head and neck chronically overloads the upper thoracic erector spinae myofascia tissue which stimulates fibrosis. To worsen the problem, the upper thoracic spine has minimal mobility compared to the spine in the lower thoracic, lumbar, and cervical areas.

Myofascial adhesions and fibrotic tissue can be lubricated and unglued allowing the body to be at ease if one works diligently to keep it elastic otherwise it will continually shorten.

Dr. John C. Lowe *Myofascial Constrictions and Trigger Points*

The most significant influence of muscle tension and fascia adhesion are upon *Pranayama*. Many symptoms, including pain, may be moderated or eliminated by improving postural abnormalities which are intimately connected with pranyama. When inefficient posture exists, unfavorable changes take place altering normal muscular as well as energetic balance.

Pranayama is of the utmost significance to Yogasana *Sadhana* and our well-being. Control of our emotional, mental and somatic states of being are influenced by our breathing.

“By tuning into our heartbeat, we tune ourselves into the resonance with the core rhythm of our organism and the rhythm of the word around us.” Pg 209 *Wheels of Life*

Yogasana is contingent on a number of interwoven factors. Paired in opposition, *agonist muscles* are the prime movers and *antagonist muscles* are the opposing muscles in the pair which must relax for movement to occur. The body favors them as they become stronger the others become weaker. A loss of flexibility usually occurs in the stronger group and loss of range-of-motion in both groups. Many muscles such as the *lower trapezius* and deep *neck flexors* – have a tendency to lengthen as a result of **agonists** becoming overactive, and their antagonists being underactive shorten – both lengthening and shortening are factors of muscle tension over extended periods of time. Craig Liebenson,DC *Muscular Imbalances*

“In a habitually faulty posture with Forward Head, the SCM muscles remain in a shortened position, and tend to develop shortness (contracture & weakness).” Pg. 319 The SCM is considered to be “the most important accessory muscle of inspiration...” Pg. 329 In addition, the Pectoralis Minor assists in forced inspiration. Pg. 278 *Muscles Testing and Function*.

Therefore, respiration plays a significant role in this condition. With Bill and Ron, their posterior back muscles are in a lengthened position and not properly engaged; these have become weak and overstretched and lost some of the ability to support an upright aligned posture. As the back muscles weaken, soft tissues including anterior spine ligaments, intercostals and abdominals shorten. The head migrates forward causing chronic cervical myalgia/tension. The chest collapses the diaphragm and intercostals restrict inhalation. Gudmestead, Julie – YJ Dec'01 *Breakout of Your Slump*

Ayurveda divides Pranayama into **Langhana** and **Brahmana**, respectively calming and energizing - analogous to Yin-Yang. That which reduces or purifies the body is called Langhana; that which nourishes or builds up the body is called Brahmana. In pranayama practice, pauses [kumbaka] after the exhalation are helpful for a Langhana effect; pauses after the inhalation are more Brahmana. If one is more Tamasic they should start with Langhana and work towards Brahmana and if more Rajasic just the reverse – all in balance. However, Sama Vritti should be incorporated in practice to assure one's harmonization.

By equalizing and lengthening the ratios of inhalation (*purakha*) to exhalation (*rechaka*) and retention (*kumbhaka*) a harmonized awareness will foster increase of Vata. [Note: another way to practice pranayama is with ratios that are not equal, called *vishama-vritti pranayama*.]

According to the *Hatha-Yoga-Pradipika*, *Nadi-shodana* or *Anuloma-viloma* (*alternate nostril*) breathing increases prana. This pranayama is often considered to be the most basic type and the most effective for purifying the *Nadis*. It is considered the best pranayama practice for individuals with limited yoga experience as well as for those of Vata condition as it is gentle and creates calmness and balance. In healthy individuals it pacifies Vata and is neutral to Pitta and Kapha. *Prana and Pranayama* by Swami Shivananda.

Although beneficial for Bill and Ron, *Sama-vritti pranayama* is optimal for Ron as he often is not aware of his breath which results in shallow breathing or holding of his breath. Awareness seems to be the best pranayama practice for someone of Kapha condition.

*When this is acquired [perfection of yoga posture],
pranamaya naturally follows,
with a cessation
of the movements
of inspiration and expiration [kumbhaka].*

Stiles, Mukunda. Yoga Sutras of Patanjali.
Boston: Weiser Books, 2002, pp. 29. YS II-49

Although *Siddhasana* is the most regarded pranayama asana noted by the *Hatha-Yoga-Pradipika* (II, 20-23), any posture that keeps the spine erect is considered adequate for pranayama practice. *Virasana* will provide Bill and Ron with the most optimal kinesthetic, biomechanical and pranayama position facilitating connection and awareness. This is particularly important for individuals - such as Bill and Ron – who have restrictive range of motion and tension issues which will distract from their overall comfort. The added benefit for Ron is lengthening of his anterior tibialis.

Pranayama, Yoga, and Ayurveda 8/15/00 by Marc Halpern, D.C.(adapted)
<http://www.ayurvedacollege.com/services/articles/015.htm>

*Yoga pose is mastered
by relaxation of effort
lessening the tendency
for restless breathing,
and promoting an identification
of oneself as living
within
the infinite breath of life.*

Stiles, Mukunda. Yoga Sutras of Patanjali.
Boston: Weiser Books, 2002, pp. 28. YS II.47

3 - a. Ayurvedic Assessment

According to *Ayurveda*, one's basic constitution or "nature" (*Prakruti*) is determined at the time of conception." One's current condition (*Vikriti*) reflects one's ability to adjust to life's influences and is always changing and should match their *Prakruti* by trying to maintain a dynamic equilibrium or balance with their environment. Whereas *Prakruti* defines one's natural inborn inherent state of being and potential – one's basic behavior - *Vikruti* is an Ayurvedic concept that defines where one is currently. All of these elements are constantly moving in dynamic balance with the others. The subtle difference between individuals explains why everyone is unique and that two persons can react very differently when exposed to the same environment or stimuli.

The three Ayurveda bodily humors (*Doshas*) - "that which changes" - *Vata* (air), *Pitta* (fire), and *Kapha* (water) - have three respective vital essences: Prana, Tejas, and Ojas. The doshas primarily function on the Anna-maya-kosha (physical body) and are the primary factors of wellness and/or illness, their energetic counterparts function primarily on the Mano-maya-kosha (psychophysical/mental sheath).

A predominant Vata dosha will likely manifest restlessness and impatience with discomfort and will have a "monkey-mind." Their thoughts and actions reflect this with multiple tasks and plans. They are often drawn to figuring things out for themselves. Because of boundary and fear issues this doshic archetype prefers a psychotherapeutic / counselor interaction to express themselves within a safe relationship. Because of dryness and instability, pain results. For those "burning the

candles at both ends,” it is beneficial to pace the mind and body with meditation and a rhythmic yoga practice.

Those with a Pitta predominance often have a Type A personality and tend to be overly critical and competitive and prefer a more equilateral relationship likening to a spouse. Overuse is often the causative factor of discomfort. Like a high intense burning candle and need for challenge, a self-reflective meditation and cooling yoga practice is most beneficial.

Kapha predominance exhibits lethargy and pessimism which requires attentiveness and coddling. They look for authoritative coaching to get them motivated often requiring a lengthened commitment. Physically they manifest underuse and stagnation troubles – e.g. limited range-of-movement. Likening to a low-burning candle, the encouragement of moderate warming movements that foster release of congealment and a meditation which is devotional and group oriented is most beneficial.

These three vital essences regulate the *doshas* in the body as their master forms – the refined beneficial forms. Of these, Prana is the most influential because it is the life-force of our being. Conversely, bodily humours are like *Malas* or waste-materials of *Prana*, *Tejas* and *Ojas* – the unrefined disease causing forms. Conceptually they are respectively analogous to *Chi*, *Yang* and *Yin* in Traditional Chinese Medicine.

(Physical) Doshas	Gunas (Mental Doshas) Human Attributes	Vital Essences
Crude Form (Biomaterials)		Purified Form (Spiritual Doshas)
Factors of Illness	↓	Factors of Wellness
Forces of Body	Forces of the Mind	Forces of the Soul
Vata (air) governs movement in mind and body; cooperates and controls Pitta and Kapha. (Nervous System) (Pelvis)	Sattva	Prana= Qi/Vayu Creativity/Life Movement as creation.
Pitta (fire) governs transformation through metabolism and discrimination. (Enzymes) (Abdomen)	Rajas	Tejas = Yang / Shakti Energy/Light Transformation as energy.
Kapha (water) nourishes and lubricates body and mind. (Mucus) (Head/Chest)	Tamas	Ojas = Yin / Shiva Energy/Love Nurishment as preservation.

Adapted from: Stiles, Mukunda / Frawley, David

If the present proportion of one’s doshas differs significantly from their constitutional / natural proportion, it indicates imbalances, which in turn may lead to illness; the further *Vikruti* is from *Prakruti*, the greater the dis-ease. An imbalance in *Vikruti* needs to be known before an effective treatment strategy can be developed and implemented.

*In the Ayurvedic model, **inadequate strength** is a sign of **diminished kapha**, **too much stretch** a sign of **increased pitta**, and **not releasing deep-seated pain** a sign of **unstable vāta**. When Vata is balanced Prana is elevated; when Pitta is balanced Tejas is increased; when Kapha is balanced Ojas is increased.*

What Yoga Therapists Need to Know about Ayurveda and Kinesiology
Mukunda Stiles 2004

3-b. Ayurvedic based Yoga Recommendations

Ayurvedic-based Yoga Recommendations

Ayurvedic Profiles of Neck Pain:

- Kapha: Atypical, it is usually as a result of congestion and compression in the neck most likely due to a sedentary lifestyle which involves limited movements.
 - Treatment would be increased movement.
- Vata: Typically predisposed due to dryness and excessive mobility predisposing one to cervical injury.
 - Treatment would be Vata-pacifying, removal of Ama, oil massage, slow-paced yoga poses with less neck movement, and more stabilization of neck and shoulder complex.
- Pitta: Typically predisposed to inflammatory and rheumatoid arthritis issues which require more relaxation. Psychological issues are more commonly causal factors.
 - Treatment would entail fasting for Ama reduction, Pancha Karma to balance digestion, assimilation and elimination.

Ojas is the purest refined substance of absorption and assimilation that nourishes, connects and sustains our physical, mental and emotional well-ness and well-being. Ojas' primary location is the heart, from which it circulates to and pervades the whole body. Ojas is collected from the body's seven body tissues (*Dhatus*) – plasma, blood, muscle, adipose tissue (fat), bone, bone marrow, and reproductive tissue. By the influence of *agnis*, emotional, physical and mental digestive forces properly refine and absorb these essences, without which illness develops. <http://www.ojas.us/ojas.html>

If *Vata* and *Pitta* are out of balance, *Ojas* will dry-up and/or burn-up, respectively, becoming depleted, and this will likely lead to the cause of many imbalances and disease. If *Vata* and *Kapha* are out of balance, *Ojas* will become stagnant and sticky, respectively becoming hardened. When all three energies – *Prana*, *Tejas* & *Ojas* - rise proportionally, a person maintains health and balance physically and emotionally while gaining the benefits of practice. As *Prana* rises, consciousness expands; as *Tejas* rises perception expands; and as *Ojas* rises contentment deepens. There is much Ayurvedic literature available that addresses the unique needs of each person according to his or her constitution, and it is well advised to direct a client to an experienced practitioner of Ayurveda. <http://www.ojas.us/ojas.html>

The first and foremost consideration of Bill's well-being concerns his ***Prana*** as it is the most practical approach to affect improvement in his wellness and wellbeing. Bill's Rajsic-Vata predominance governs his imbalance depleting his Ojas – it is figuratively drying-up this “juice.” What is needed is to slow/ the pace of his mind and his physical practices – essentially pacify his vata imbalance - and keep-up with nurturing activities like meditation and body-work as well as increase strengthening activities to stabilize his condition – increase Kapha.

“Usually what relieves Vata also relieves Kapha.” SYT Class notes - Mukunda Stiles 02-13-05

----- Original message -----

Hi Mukunda,

In an assessment I am completing the client indicated that the main issue is "restriction" and that he is looking to release this from his body. He has a vata disposition with a pitta emotional drive and body type. He likes receiving a massage weekly and likes the aspect of detaching from his body during the massage. With the restriction, is - "restriction" as an issue - a vata or kapha issue? I tend to feel it is more a vata issue emotionally but a kapha issue physically.

Thank you for your help.

Namaste,

Mark

From: yogimukunda@comcast.net

To: Mark McDonnell <markjm63@yahoo.com>

Sent: Friday, October 14, 2005 2:36:53 PM

Subject: Re: Ayurvedic Question

Your insights are indeed correct. Proceed with them in working with him. Vata practice for his mind and kapha practice for his body. Namaste

In Ron's case, his Tamasic-Kapha predominance governs his imbalance by coalescing his Ojas – figuratively it is becoming sticky. What is needed for Ron is to increase movement with moderate intensity – increase Vata via increase in Pitta. By increasing Pitta, Kapha is diminished. SYT Class notes: 09-11-05

Intent to enhance and balance the positive aspects of his vital energy is the foremost stabilizing factor. Incorporation of Pranyama is an essential element to bring movement, lubrication and release for his chronic tension.

	Prakruti	Guna	Subdosha	Vikruti	Vikruti	SYT Rx
• BILL	Vata	Rajasic	Ojas ↓	↑ Vata	↓ Kapha	↑ Kapha
• RON	Kapha	Tamasic	Tejas ↓	↓ Vata	↑ Kapha	↑ Pitta

4. Common Body Reading

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

Postural Deviation	Tight	Weak
Forward-Head	Stenocleidomastoid	Upper Trapezius
Rounded Shoulders	Pectoralis / Serratus Ant.	Middle/Lower Trapezius Latissimus Dorsi
High Shoulder	Upper Trapezius Levator Scapula	Lower Trapezius Latissimus Dorsi Pectoralis-Sternal
Winging Scapula	Serratus Anterior Anterior Deltoid Pectorals	Middle Trapezius Rhomboids
Flat Back	Middle Trapezius Rectus Abdominus	Lumbar Erectors Psoas, Hip Flexors
Kyphosis	Rectus Abdominus Pectorals Upper Trapezius	Erector Spinae-Thoracic Middle/Lower Trapezius
Flat Feet	Tibialis Anterior	Tibialis Posterior

5. Contraindicated Yoga Practices and General Activities

- ❖ Yogasana which client has discomfort with or is not ready to attempt.
- ❖ Yogasana which is contradictory or further imbalances existing condition.
 - Completing the *Plough* and *Headstand* asana seem to aggravate mid-back tension and are contraindicated for this condition. Each posture places undue strain on the mid-cervical and upper-thoracic areas as highlighted in the physical assessment findings.
- ❖ Pranayama which client is unable to practice properly. The Hatha-Yoga-Pradipika (Chapter IV) contains descriptions of proper preparation for pranayama - the fourth limb in a yogi's path toward *Samadhi* - along with instruction on its practice and warnings against its improper use.
- ❖ Dietary factors which contribute to existing conditions.
 - Ayurvedic dietary contraindications and doshic imbalances.
- ❖ Exercises which contribute to existing condition.
 - Note: Although the Proprioceptive Neuromuscular Facilitation (PNF) technique is effective and useful – it relieves stress on the muscle belly - it is NOT yoga as it will likely transfer the tension from the muscle to the tendons which may tear. Implementing enhanced methods of flexibility training—like advanced yoga techniques—requires an experienced teacher who can make sure our skeleton is correctly aligned and that our body is strong enough to handle the stresses involved.
 - Kapha Too Little
 - Pitta Too Intense
 - Vatta Too Much

6. General Recommendations for the Condition

“The stretching of the tight muscles must be very gradual...The patient should actively try to stretch the posterior neck muscles by efforts to flatten the cervical spine: i.e. pulling the chin down and in.” “Treatment for the neck may need to begin with exercises to strengthen the lower abdominal muscles, and with the use of good abdominal support that permits the patient to assume a better upper back and chest position.”

Pg. 342 Muscles Testing and Function.

❖ Wellness Plan – Koshas:

- Physical:
 - Stabilization
 - Strengthening
 - Lengthening
 - Releasing
- Energy:
 - Pranayama – Prana Vidya: Ujayii ...
 - Mudra-Yoni
 - Tantra Yoga (*@ latter time frame with experience)
- Psycho-Emotional:
 - Yoga Nidra – to relax and develop/cultivate self-acceptance.
- Wisdom:

- Yoga Nidra – with emphasis on self-awareness: patterns, conditions and habits that don't support present circumstances.
 - Bliss:
 - Meditation – Non-duality.
- *Source Unknown.

Theoretical Recommendations:

<u>Strengthen</u>	<u>Lengthen</u>	<u>Release</u>
Longus Colli / Capitus [cervical flexion]	Splenius Capitus/Cervicus [neck extension, rotation, lateral flexion]	
SCM [cervical flexion/rotation]	SCM [cervical flexion/rotation]	
Lower Trapezius [scapula depression/spinal extension]	Upper Trapezius [cervical extension/rotation]	Upper Trapezius
Erector Spinae [spinal extension]	Pectoralis Minor [scapula adduction/anterior tilt] Pectoralis Major (lower fibers) [horiz. shoulder adduction/flexion]	Pectoralis Minor
Upper Trapezius [cervical extension/rotation]	Levator Scapula [scapula elevation/adduction + neck flexion/rotation –fixed]	Levator Scapula
Middle Trapezius scapula adduction/stabilization]	Anterior Deltoid [shoulder flexion / horizon adduction]	Anterior Deltoid
Latissimus Dorsi [shoulder extension/adduction]	Latissimus Dorsi / Teres Major [shoulder extension/adduction]	Latissimus Dorsi
	Teres Minor Triceps – Long-Head [extends / adducts shoulder]	
Obliques / Rectus Abdominus (lower) [trunk flexion] [Transverse Abdominus]	Rectus Abdominus (Upper)	

<u>Strengthen</u>	<u>Asana</u>	<u>Lengthen</u> ☑ = Release	<u>Asana</u>
Lower Trapezius [depresses scapula]	<u>Locust*</u> (*arms stretched-out/thumbs-up) <u>Bridge</u> <u>Cat-Cow</u> <u>Face-of-Light</u>	☑ Pectoralis Minor ☑ Upper Trapezius	<u>Plank</u> <u>Reclining Twist</u> <u>Warrior II</u> <u>Thread-the-Needle</u>
Errector Spinae	<u>Locust</u> <u>Cobra</u> <u>Extended Triangle</u>	☑ Upper Trapezius	<u>Bridge</u> <u>Shoulder-Stand</u> <u>Thread-the-Needle</u> <u>Plough</u>
		☑ Levator Scapula	<u>Bridge</u> <u>Shoulder-Stand</u> <u>Thread-the-Needle</u> <u>Plough</u>
SCM [cervical flexion]	<u>Seated Spinal Twisit</u> <u>Extended Angle</u> <u>Abdominal Twist</u>	SCM [cervical flexion]	<u>Cobra</u> <u>Seated Spinal Twist</u> <u>Camel</u> <u>Warrior II</u> <u>Seated Spinal Twist</u> <u>Extended Angle</u> <u>Abdominal Twist</u> <u>Cat-Cow</u> <u>Complete Boat</u>
Rhomboids [scapula adduction]	<u>Locust</u> <u>Bridge</u> <u>Cat-Cow</u> <u>Plank</u> <u>Seated Spinal Twist</u>	Serratus Anterior [scapula abduction]	<u>Cobra</u> <u>Spinal Twist</u> <u>Camel</u>
Posterior Deltoid	<u>Locust</u> <u>Prone-Boat</u> <u>Warrior II</u> <u>Shoulder-Stand</u>	Anterior Deltoid	<u>Stick</u> <u>Camel</u> <u>Thread-the-Needle</u>
Latissimus Dorsi [shoulder depression]	<u>Camel</u> <u>Seated Spinal Twist</u> <u>Shoulder-Stand</u> <u>Stick</u>		
Internal/External Obliques Lower Rectus Abdominus [trunk flexion]	<u>Complete Boat</u> <u>Seated Spinal Twisit</u> <u>Extended Angle</u> <u>Abdominal Twist</u> <u>Upward Leg-Stretch</u>	Rectus Abdominus (Upper)	<u>Cobra</u> <u>Sphinx</u> <u>Bow</u> <u>Up-Dog</u>
Longus Colli / Capitus [cervical flexion]	<u>Yogasana</u>	☑ Splenius Cervicus Semispinalis- Spinalis Capitus	<u>Bridge</u> <u>Shoulder-Stand</u> <u>Plough</u>
Inercostals [inspiration]	<u>Pranayama -</u> <u>Yogasana</u>	Inercostals Serratus Posterior	<u>Pranyama -</u> <u>Yogasana</u>

❖ Asanas for Vata:

The asanas which are most suitable for balancing Vata are those that are calming and grounding by nature. They will counter the tendency for those with a vata imbalance to be "spacey," agitated, or nervous. The lower abdomen, pelvis, and large intestine are the main residence of vata in the body, so many of these asanas compress the lower abdomen or cause the lower abdomen to become taut. In addition, asanas that strengthen the lower back help alleviate Vata. In general, most yoga asanas are good for balancing Vata, since most asanas are calming to the mind. There are, however, some that are particularly good and some that should certainly be avoided.

People of Vata nature should avoid asanas that are overly stimulating to the nervous system, such as repetitive Sun Salutations, and those that place excessive pressure on sensitive joints in the body. The cervicothoracic junction - the bony region where the neck meets the shoulders - is one of these areas. People of Vata nature and imbalance tend to have weaker bones, less fatty padding, looser ligaments, and more susceptibility to pain. For these reasons, Salamba Sarvangasana (Shoulderstand) and Halasana (Plow Pose) should be avoided or modified by placing a blanket under the shoulders for extra padding. This also decreases the extreme flexion the neck is placed in. Even so, people of vata nature or imbalance should not hold these poses for very long, or they will risk injury.

❖ Asanas for Pitta:

The best asanas for Pitta are those that are calming and not overly heating. People of Pitta nature or imbalance tend to be more assertive and intense. Calming poses help sedate their intensity and ease the emotions of anger and resentment that they are prone to. By alleviating Pitta, these asanas are good as part of the treatment for conditions such as ulcers and hyperacidity, liver disease, and acne.

Asanas that help balance Pitta are those that place pressure on the naval and solar plexus region, in the small intestine where Pitta resides. These asanas directly affect the liver and spleen and help regulate the strength of the digestive fire.

Headstand should be avoided for people of pitta imbalance or constitution. Headstands heat the body and can help cause or worsen issues. If a person of pitta constitution with no serious imbalance chooses to do Headstands, then the Headstand should be held for a very short period.

❖ Asanas for Kapha:

To balance the heavy, slow, cold, and sedated nature of Kapha, practice asanas that are more stimulating and heating. People of Kapha nature are the best suited to handle strengthening poses, as their joints and muscles tend to be strong and stable. Increasing flexibility is extremely important for those of Kapha nature, as Kaphas tend to become overly stiff or rigid.

Suryanamaskar (Sun Salutation) is a very good aerobic exercise for Kapha and helps in the treatment of obesity and depression, two common Kapha conditions. This is the ideal asana for Kapha as it is very active, creates heat, and opens the chest.

People of Kapha nature should do many repetitions and perform them with great speed. While in general people of vata nature should avoid this asana, performing it very slowly and with great awareness will decrease its vata-aggravating tendencies. Pitta types should do limited repetitions, as this series is very heating.

Few asanas are harmful to Kapha, as Kapha's benefit from all forms of stretching and movement. Two weak areas of the body for Kapha individuals, however, are the lungs and the kidneys. Asanas that place excessive pressure on the lower abdomen, such as Dhanurasana (Bow Pose), can aggravate the kidneys if held for too long.

At different times of our lives, different Doshas play a greater role. This is a part of the natural fluctuation of these forces. From birth through puberty, our bodies and minds are more affected

by Kapha. From puberty until around our retirement years, the influence of Pitta increases. The later years, post retirement, are most dominated by Vata.

During each of these periods, we must pay attention to the effect our age has on us and modify our practice appropriately. When we are very young, our bodies can better tolerate the more aerobic styles of yoga. As we age, we need to practice more calming asanas.

The seasons also affect a healthy practice. The season of cold dampness increases Kapha. The season of warm weather increases Pitta. Seasonal cool dryness increases Vata, as does the windy season. (In different parts of the country these take place at different times, so placing the names of traditional seasons upon them can be misleading.) During the Kapha season, a practice that is more stimulating and warming is better. In the Pitta season, a practice that is cooling is best. In the vata season, a calming practice supports greater health.

Finally, the time of day we practice will affect the balance of the Doshas. Kapha naturally increases between 6:00 a.m. and 10:00 a.m. when we are moving slowly. Pitta naturally increases between 10:00 a.m. and 2:00 p.m. when the digestive fire is at its height and, in the daytime when the sun is at its peak. Vata naturally increases between 2:00 a.m., and 6:00 a.m. during the transition between night and day.

Most people practice yoga in the early morning, when the world is calm. Before 6:00, during the time of vata, a very quiet and gentle practice is recommended. After 6:00, during the time of kapha, a more stimulating practice is appropriate. Remember, though, that when designing a yoga practice for yourself, your overall Vikruti, or imbalance, is more important than the influence of the season, your age, or the time of day. These should be seen as the factors that modify your practice but not the factors that create it. When you are in near perfect balance, you can create a program based almost entirely on your constitution, the seasons, and the time of day.

In Ayurveda, balancing the effects of the doshas is only half of the formula for creating health and well being. The other half is developing a more Sattvic lifestyle and learning to express our Sattvic nature: that aspect of ourselves that, through an awareness of our connectedness to Spirit, allows us to express our highest or most virtuous qualities. Yoga, practiced in harmony with each person's unique nature, is part of the Ayurvedic path toward balancing the Doshas and enhancing Sattva. Through this path each of us can reach our full potential.

Marc Halpern, Founder/Director California College of Ayurveda, Grass Valley, CA.

This article was modified and can be found online at www.yogajournal.com/health/55_1.cfm
November/December 1995

6-a - Therapeutic/Free of Pain is to reduce the discomfort, pain, swelling, or stiffness.

❖ **KISS: Keep It Simple & Safe** SYTTT Mukunda Stiles

Advise Client:

- Breath AWARENESS!
- *Pranayama* - Equal rate of inhale and exhale / Wave Breath
- Lengthen Neck / Retract Chin
- Roll Shoulders Back & Down to Comfort.
- Lift Sternum
 - Protect Neck/Shoulder area in inclement weather – i.e. cold.
 - *Warm Shower* - helps decrease stiffness
 - *Massage*
 - Arnica gel or "B, F&S" ointment as desired.

6-b - Stabilize Situation and Lifestyle Modifications are to stabilize the situation.

The Longus Capitis and Colli are unique among the muscles of the neck in their ability to counteract neck hyperextension.

Thus [these muscles] in particular [with support from below] [must] take a large role in maintaining the proper alignment of the head, neck and upper back.

Work done to free the SCM and Suboccipital muscles should be accompanied by work with the Anterior Scalene. Pg. 211 Anatomy Trains

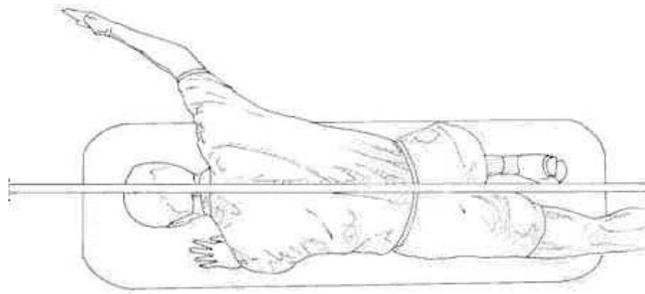
The SCM is primarily involved in neck rotation and is secondary for cervical flexion (standing vs. lying supine). In Forward Head Posture the SCM may become a primary support for the head (for each inch forward the weight nearly doubles). This is dependent on where the cervical fault translation is located – C1-C2 – C6-C7. In Forward Head Posture the cervical spine may causally become flat but in a “stepped manner” or react in a compensatory manner with excessive Upper Cervical lordosis or kyphosis.

In turn, cervical musculature will functionally react in a compensatory manner due to concomitant structural (disc, ligament) and/or musculature compromises (tonic vector forces in post-thoracic and anterior shoulders/abdominals).

**Source unknown.*

Continue with any short range tools as needed - discomfort should be lessened.

- *Gentle ROM exercises.*
- *Change Pillow - Aligned neck while sleeping.*
- *Office Ergonomic Training*
- *Workstation Set-up – Ergonomically*
- *Awareness of Body Mechanics*
 - *Adjustments of Task performance*
 - *Adjustment of work and home environment to accommodate self.*
 - *Mental & Emotional response adjustments.*
- **Pavanmuktasana** (JFS) incorporated into daily activities.
- Wall Hang: encourages vertebral articulation and opening.
- Half-Forward Bend: encourages lengthening of shoulder extensors; strengthens spinal extensors and abdominals.
- Cat-Cow Pose: strengthen and stretch middle and lower trapezius abdominals.
- Horse-Biting Tail ‘C’ Bend
- Sun-Bird Pose: Raise one arm to a point 45° off the midline of the body – with the THUMB directed up - and hold it in the same horizontal plane as the back in line with the diagonal fibers of the Lower Trapezius to activate this muscle.



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- Neck Strengtheners: strengthen and stretch cervical flexors and rotators. *Note: Paul Chek, NMT recommends closing the kinetic chain of the neck flexors by impressing the tongue to the roof of the mouth just behind the teeth. This helps avoid faulty recruiting patterns during repeated neck and trunk flexion which result in Forward-Head posturing. Chek, Paul *Core Conditioning*
- Tuck-Chin: activates lengthening of Cervical Extensors.

*Note: External Arm Rotation reduces Thoracic Kyphosis.

❖ The following yoga poses are some which may be recommended on a case-by-case basis and should be cautioned when considering therapeutic application. Modifications in postural alignment will be necessary to accommodate personal challenges and needs. Yogasana specific to individual postural and doshic needs – cervical, shoulder and thoracic benefits are as follows:

- Setu-Bandhasana (Bridge): strengthen the lower and middle trapezius, posterior deltoid, and stretch cervical extensors.
- Urdhva Prasarta Padasana (Upward Stretched Legs): lengthens shoulder extensors, cervical extensors; stabilizes shoulder joint and scapula.
- Salamba Sarvangasana (Supported Shoulderstand): strengthen shoulder extensors, scapula adduction/depression; lengthen cervical extensors.
- Dandasana (Seated Stick): strengthen latissimus dorsi, lower trapezius, and shoulder external rotators.
- Vasishthasana (Side Plank): strengthen shoulder and scapular stabilizers, scapular adductors; neck rotators; lengthen neck rotators and shoulder adductors.
- Jathara-Parivartanasana (Abdominal Twist): stretch SCM and pectoralis.
- Urdhva Dhanurasana (Upward-Facing Bow Pose): strengthen scapula adductors/depressors – stabilizers; and spinal extensors / cervical extensors; lengthen abdominals.
- Salabhasana (Locust): strengthens erector spinae, middle and lower trapezius (with thumb directed up to activate lower fibers of trapezius – allows glenohumeral joint to diagonally line-up with fibers).
- Ardha / Dhanurasana (½ Boat –prone): strengthen cervical and spinal extensors, scapular adductors; lengthen cervical flexors, shoulder adductors and flexors, and abdominals.

- Bhujangasana (Cobra): strengthen cervical extensors, erector spinae and lower trapezius; lengthens abdominals.
- Sphinx: strengthen lower trapezius, cervical extensors, and stretch upper abdominals.
- Chaturanga Dandasana (Four-Limbed Staff Pose): strengthen cervical extensors and flexors, scapular abductors, shoulder adductors, and abdominals.
- Adho Mukha Svanasana (Downward-Facing Dog Pose): strengthen scapula adductors/depressors – stabilizers; and spinal extensors / cervical extensors; lengthen shoulder extensors.
- Virabhadrasana II (Warrior Pose II): strengthen cervical rotators, horizontal shoulder abductors / scapula adductors; lengthen cervical rotators, horizontal shoulder adductors.
- Vrksasana (Tree Pose): strengthen shoulder flexors; cervical and spinal alignment/balance stabilization; lengthen shoulder extensors.
- Utthita Trikonasana (Extended Triangle): strengthen cervical rotators, horizontal shoulder abductors / scapula adductors.
- Supta-Madhyasana (Reclining Waist): strengthen scapular adductors; lengthen cervical rotators, horizontal shoulder adductors.
- Savasana (Relax pose): spinal alignment and awareness; restorative / balancing.
- Pranayama incorporated into Sadhana practice.
 - Rhythmic application of pranyama in yogasana practice should follow three general rules as emphasized by Mukunda Stiles:
 - ① Inhalation occurs as you extend the spine; exhalation when you release tension & relax;
 - ② Inhale when you move to center or become erect; and exhale when moving away from centered position.
 - ③ Breath Awareness is constant, even when your body is stationary.
 - Stiles, Mukunda. Structural Yoga Therapy pp. 56-57 Boston: Weiser Books, 2000
- Pranayama as deemed appropriate for condition and experience of client.
 - Ujjaye
 - Nadi Sodhana
 - Sitali
 - Bastrika
 - Kapalabhati (kriya)

6-c – Maintenance and Long Term Considerations are to develop and implement a Sandhana practice that suites the disposition and needs of a willing client and addresses causal issues described.

- ❖ Yoni Mudra with Savasana – to harmonize Prana and foster awareness.
- ❖ Ayurvedic assessment by a licensed professional to modify dietary modifications.
- ❖ Advanced Pranayama as appropriate.
- ❖ Meditation

- ❖ Tantra Yoga
- ❖ Nada Yoga
- ❖ Mantra/Japa Yoga
- ❖ Muladhara incorporation.

The pelvic floor relates to the **Muladhara** or root chakra where basic issues of survival and safety reside. The Muladhara is “our root, the earth on which we stand.”
CG Jung pg XIV commentary on Kundalini Yoga, 1932

It is important to access Bill and Ron's vulnerability and strength. To facilitate this, a subtle lifting or arching of the pelvic floor into the core of the body would be recommend – also known as the “core lift.” The domed "arching up" of the perineal floor gives an equal and opposite lift through the central structure. Alternating the exhalation and lift of mulabandha with the inhalation and release of *mulabandha* assists the body to stretch and soften. Energy can then move through and up this *chakra*, and one can consciously act on issues of survival and fear, thus building a strong foundation. Christopher Ken Baxter www.atmayoga.com (adapted)

7. Questions and Answers from www.yogaforums.com

- Cervical / Neck Issues:

Q- I have recently viewed an x-ray of the cervical curve in my neck. Unfortunately it is not a lordotic curve....it is kyphotic. I have been medically advised to never do headstands again. My asana practice does include a series of headstands in addition to other inversions. Some of the medical experts suggest that shoulderstand or plow would be safe. I would appreciate your reaction to the advice that I have received. I would be very grateful if you would suggest safe therapeutic asanas and substitutions when I am in a class environment. Thank you.

A - do you get pain in headstand? if so then follow doctors advice. if not then tell me more about full spinal and postural alignment. without seeing you i would recommend that you do backward bending of cervical and see if strengthening the upper trapezius and cervical spinalis muscles can make a normal curve. poses to do that would include locust, cobra, handstands dog pose and forearm balances while lifting head to look at the wall. more than that i would need to see you personally. where are you from? do you wish to receive regional program updates from me?

Q - I have a student who is in his mid 50's whose head goes forward when he's standing. I started to observe many of the "older" students and noticed several others have forward heads. I always take time at the beginning of the standing postures to work with Tadasana and by the time they've stayed in it for several breaths, they seem more balanced. This deteriorates more or less slowly and by the end of class as they're leaving the heads are back in their forward position. I realize it can take time to make these adjustments in the structure of the body but just was curious what you might suggest to help me in working with this.

I am also interested in what you would say about these people doing Shoulderstand. With the head already going forward, is it a good idea to have them do Shoulderstand, which might make the situation worse? Perhaps a half Shoulderstand Viparita Karani?? Thank you for your help on this matter. Many blessings, S

A - I find that most people have a 10-degree forward posture to the neck. It is not correctable by adjustments in poses like mountain. This is accompanied by having weakened lower trapezius and latissimus muscles. The crucial issue is to strengthen these muscles. This can be done in bridge, cobra, and cat bows as they are described in my book. Yes a half Shoulderstand is best for this; this is one of the many reasons why i put it in my book and not the full pose. Namaste Mukunda

Q - I have an additional question in regards to the forward head. Since I asked the question a student has come to my class who does have a slightly forward head, but in her case it seems that each time she takes her head back she develops a headache. It doesn't matter if she's lying on her back doing, say cobra, or is upright in a pose like camel. I keep reminding people to keep the neck as an extension of the spine and not to crunch the neck back, but even a slight backward movement for this person seems to bring on the headache. Any insights as to what may be going on and how to help her with this situation?

A - On your student do you encourage them to elongate the spine before and through all backbending. Often just that simple image of decompressing will make a difference. Beyond that i would ask about whether she gets chiropractic adjustments or has a history of neck injury. If so then i would recommend the neck strengthening exercises cited in my book page 180.

Q - My question is about the neck strengthening exercise in your book. I was wondering if this would be a good thing to do for people who have a forward head? From your book I see that the sternocleidomastoid muscles are tight and the upper trapezius is weak, so it would seem to me that it would be more appropriate for a person with a forward head to lie face down and lift the head up. If this were correct, would you place the hands behind the head and then lift up? I thank you in advance for your reply.

A - Yes, this is indeed more for someone with a forward head though I would check as they can be forward and still have the later neck muscles weak too. In that case I would give both but with the head lift on belly done more and last.

- Rolling the head

Q - I remember you telling us at Level 1 that to warm up the neck, you move the head / neck in all its directions -- but that you do NOT do "head rolls" -- you don't roll the head in a circular movement. I remember someone saying "but it feels good" and you answering, "yes, and so does ice cream, but that doesn't mean it's good for you."

Now, so many months later, I wonder why you say not to roll the head from front-to-side-to-back-to-side-to-front. Can you please explain precisely why? I've looked at the bones ... but I'm still not sure why it's bad to do this. Something to do with how the skull sits on atlas? Or the atlas/axis connection? Or the facets? Please advise.

A - As to why. Rolling the head will tend to make the vertebrae sublux - slip out of position. Most especially this occurs upwards of C4. The axis of motion is most mobile at C3-4 hence these go out the most. C2 and C1 go out in the worst case scenarios, often when life is more than one can deal with, or due to chronic food allergens. Actually all vertebrae go out with specific allergens that have been mapped by the chiropractors. The spinous processes tend to get jammed especially when going into cervical extension. When they are misaligned to begin with the misalignment acts like a lever to wedge the adjacent vertebrae offline.

Misalignments are a vata that is prana imbalance. In the neck region this is mostly due to misdirected udana prana - read, "I don't know where I'm going". By prayer and meditation, which is directed to helping you be of service to others and to deepening your relationship with the Divine Self, udana moves in the proper direction. By doing yoga and other spiritual practices without the proper attitude (bhav) udana is unhappy. Udana prana generates our spiritual experiences of peace, light, and love.

- Shoulderstand Stress

Q - Yesterday morning, I attended a yoga class in the morning in which we practiced head stands and shoulder stands. I have never done a full headstand and did not go into a full one yesterday. However, I did the shoulder stands and our teacher asked us to hold the pose as long as we could ... I ended up holding it for about 5 minutes. We were in a room with hard wood floors and I was only using my one thin mat to practice the shoulder stands. As I came down from the stance, I immediately started feeling pins in needles running through my left pinky and my left ring finger. The class ended at 7:30am and I was still feeling a dull pins and needles feeling through lunch. It was at this point that I called a reflexologist friend and asked if I could come over and visit with her. She found that I was holding a lot of tension in the left side of my neck and in my left shoulder ... all these muscles were knotted up and she proceeded to work on loosening the knots. The pins and needles feeling subsided late last night (around 10pm), but I still have a lot of pain in my spine ... particularly the bone that protrudes out the furthest ... I believe this might be either C-6 or C-7? I intuitively feel that my spine is bruised in that area, but do you feel from what I have told you, that I need to worry that this could be something worse? When I was up in the shoulder stand, I felt a tremendous amount of pressure in that area ... I did not once turn my neck or feel anything pop out of place it was just as I was coming down that I started to feel the pins and needles (perhaps a pinched nerve?).

A - I feel that you were not adequately prepared to do what you did. To hold a long shoulderstand one needs to develop the strength of the triceps and latissimus muscles which can push your body vertically while in the pose. They are called the shoulder extensors. Without adequate time to develop those muscles with cat bows (pushups done from cat position) or repeating bridge while using those muscles the weight in shoulderstand goes to where you experienced it at C6-7. This is a natural protuberance of the lower cervical spine. I have seen students in one method actually develop calluses on that region from holding the pose so long. My standard is to have you be able to do 12 cat bow push ups with elbows close to the side and an additional 12 with the elbows out to the side of wrists to prove to me that you have the strength necessary for a safe full shoulderstand. In my version of the shoulderstand as shown in Structural Yoga Therapy book, it is actually ½ position, you are working to develop tone in these muscles and once that is done then pose can be safely done without weight bearing on any section of the spine. The pose is called shoulderstand; therefore weight goes outward from neck on the shoulders. It is not called neck stand. I do not feel you should worry about any permanent damage, but I would encourage you to show this response to your teacher and let them know that you will not be doing that again, until you have been adequately trained in the steps leading to develop tone in the muscles I have mentioned.

- Shoulderstand-Sarvangasana and neck position

Q - I have heard from some teachers that one should never let C7 touch the floor in shoulderstand. I am unsure of the reason or how to accomplish this. Secondly, what are your recommendations regarding use of supportive blankets under the shoulders to provide less stretch on the posterior neck muscles? I worry about the decreased stability when one is using the blankets as well as the risk of promoting a reverse cervical curvature.

A - I agree that C7 should optimally be elevated during pose both half and full. However, to achieve that it is necessary to have very strong middle trapezius and latissimus muscles, those which abduct shoulderblades and extend the shoulders respectively. To tone them I recommend doing cat bow (push ups) as described in my Structural Yoga Therapy book, page 179. The use of blankets does not create this strength it only acts to make up for these muscles being weakened and their antagonists, the pectorals and anterior deltoids being tight. With proper progressive tone to the muscles I have

mentioned their antagonists will have a mild stretch and cervical natural curve can be retained even in the full posture.
namaste mukunda

▪ Pitta-vata student

Q - One of my students, a very advanced yogini, has been practicing yoga with me for approx. 4 years; in the past year, she has also gone to Ashtanga and Vinyasa classes with two excellent teachers. For as long as I've known her, she has complained of severe pain in her neck, from the occiput running halfway down her upper traps; the levator scapulae is also involved. She does not grind her teeth, but holds her jaw chronically tight; observing her in class, I often see her temples tensing. I would describe her as pitta-vata.

I have recited the sutras to her that teach us to be "steady and comfortable" and tell us that by relaxing our efforts, we will gain mastery -- needless to say, it's been a hard sell. She has been resistant to my repeated suggestions to back off to 70% of what she could do.

She has tried numerous modalities -- Craniosacral, Reiki, positional functional release, acupuncture, chiropractic, trigger point therapy, deep tissue massage, PT, Thai yoga bodywork, past life regression -- all to no avail.

Recently, she has sometimes seemed slightly more open to doing less (though this is clearly a struggle for her), and also appears more open to meditation and 'anything that might help.' I suggested the "So'ham" mantra to her in order to help relax her jaw -- she says this helps somewhat with the pain, and she has begun a meditation practice nightly using this mantra. The idea is to "undo" ... to relinquish our habitual holding patterns. It takes a long time for her collarbones and shoulders to release, though this happens when she remains in this position for 15-20 minutes. She reports that this, too, is helping somewhat. Still, she is in a lot of pain virtually all day long.

She is very spiritual, but also seems to be struggling to find her path; I always feel that her pitta is in overdrive! I sense that though her pain manifests on the physical plane, there must be deeper layers of healing that need to be accessed. I would appreciate any suggestions that might help this dedicated yogini.

A - Pain is always a Vata imbalance at its root, on the surface there may be pitta aggravation. But the bottom line is the need to relax, release fear and find a way into the prana that connects one with all life. This is terse summary of Yoga Sutras II, 46-52. You are doing what you can she sounds like she needs to find a personal connection to a teacher that she can trust to allow her to release the deeply seated pain which is holding her back in more areas than just yoga. Patience and persistence are warranted on your part. Do not give her what she doesn't ask for but only give your teachings. When you hit a chord that she resonates with and wants to open to she will take the initiative to seek how to follow the guidelines of Classical Yoga that can take her more deeply into safely releasing her fear and pain.

Pectoralis Minor & rounded shoulders

Q - I work with middle aged students who are very active in fitness activities like running, cycling and weight lifting, I see many with rounded upper backs and forward shoulders and head with very tight muscles in the shoulders and upper arms. I personally work at a computer and phones daily and have a slumping upper back that I am working at correcting too. I noticed in my anatomy books that a tight "Pectoralis Minor" is a possible contributor to pulling the shoulder off the back and forward. It originates at the Coracoid Process (?) and inserts at the 3, 4 & 5th ribs at the front on the chest. It's the only muscle that has no exercise anywhere that I can find that will stretch it.

A - The Coracoid Process is a small bone on front of the body, a portion of the shoulder blade. It is the same as Pectoralis major just more specific. To really stretch it the best approach is hands on bodywork. It is too small a muscle and deep for yoga to stretch without supervision of one who knows anatomy intimately.

Q - I'm looking at strengthening the "Latissimus Dorsi", which attaches to the tip of the Scapula, to help counteract it by pulling it back down at the back. Is there any other exercise(s) that will stretch it? Thank you for your time, A

A - The latissimus does not attach to the scapula but to the upper arm humerus. For improving rounded shoulders I recommend you consult my book SYT in chapter 22, which is entitled correcting Posture and see the specific recommendations on page 266. Especially look at strengthening the latissimus not stretching it. Rounded back is a sign of overstretched muscle. Recommendations include cobra, bridge, plank, in general all backbending poses.

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9. Appendix:

Comparative Chart of Client's Findings

<u>Articulation</u>	<u>ROM</u>	<u>Bill</u>		<u>Ron</u>	
<u>Joint</u>	<u>Norm</u>	<u>ROM</u>	<u>MT</u>	<u>ROM</u>	<u>MT</u>
<u>Shoulder</u>		Left/Right	Left/Right	Left/Right	Left/Right
Lattisimus Isolation	NSS	NA	2 ½	NA	3
Middle Trapezius	NSS	NA	3 ½	NA	3 ½
Horizontal Abduction Extension	40°	25°/25°	2/1.5	20°/20°	2/2
Horizontal Adduction Flexion	130°	135°/135°	3.5/2	110°/115°	2/2
Shoulder Flexion	180°	145°/150°	3.5/3.5	160	3/4
Shoulder Extension	50°	70°/70°	4/4	55°/55°	1.5/2
Internal (Medial) Rotation	80°	50°/45°	3/3.5	45°/55°	4/4
External (Lateral) Rotation	90°	90°/90°	3/3/5	90°/90°	4/4
Vertical (Lateral) Abduction	NSS	NA	2/1/5	NA	3/3
Vertical (Medial) Adduction	NSS	NA	3.5/2	NA	3/3
<u>Cervical / Neck</u>					
Flexion	45°	60°	3	55°	4
Extension	55°	50°	4	25	5
Lateral Flexion	45°	60°/50°	4/3.5	35°/35°	4/4
Rotation	70°	75°/80°	2/3	55°/55°	3.5/3.5
<u>Thoracic / Lumbar Spine</u>					
Flexion	NSS 60° _{AMA}	Fair	1.5	Fair	2
Extension Upper		Poor	3.5	Fair	5
Extension Lower	NSS 25° _{AMA}	Good	4	Fair	5
Quadratus Lumborum	NSS	Poor	2/0	Poor	0/0

“Optimum performance and the maintenance of structural and functional efficiency require optimum levels of flexibility.”

National Academy of Sports Medicine (NASM)

“Flexibility exercises should be incorporated into the overall fitness program sufficient to develop and maintain range of motion.”

American College of Sports Medicine (ACSM)

“When flexibility training is neglected, forces are applied to joints in improper positions and muscles at improper lengths. This places added stress to the joints and tissues of their structure. It will also force the individual to compensate for these muscle imbalances with improper joint mechanics, eventually leading to injury.”

National Academy of Sports Medicine (NASM)

“The soft tissue of the musculoskeletal system – principally the muscle and the connective tissue – responds to over-use by shrinking and tightening. Its response to under-use mysteriously is much the same.”

(adapted - “Staying Supple”, John Jerome)

SPINAL NERVE SEGMENT	PLEXUS	INNERVATION OF PRIMARY MUSCLE & VISCERIA http://webmanmed.com/spinalnrv_files/cervical.html
C1	CERVICAL	Anterior & Lateralis Rectus Capitis; Longus Capitis
C2	CERVICAL	Anterior & Lateralis Rectus Capitis; Longus Capitis; Longus Colli
C3	CERVICAL	Longus Capitis; Longus Colli; Scalenes Medius; Scalenes Posterior; Levator Scapulae; Rhomboids; Trapezius; Respiratory diaphragm
C4	CERVICAL	Longus Capitis; Longus Colli; Scalenus Medius; Scalenes Posterior; Levator Scapulae; Trapezius; Rhomboids; Teres Minor; Supraspinatus; Infraspinatus; Deltoid; Respiratory Diaphragm
C5	CERVICAL AND BRACHIAL	Rhomboids; Supraspinatus; Infraspinatus; Subscapularis; Deltoid; Biceps Brachii; Brachioradialis; Scalenes Anterior; Scalenes Posterior; Serratus Anterior; Pectoralis Major & Minor; Teres Major & Minor; Longus Colli; Respiratory Diaphragm
C6	BRACHIAL	Scalene Anterior; Scalenes Posterior; Pectoralis Major & Minor; Serratus Anterior; Supraspinatus; Infraspinatus; Subscapularis; Teres Major & Minor; Deltoid; Biceps Brachii; Triceps; Brachioradialis; Pronator Teres; Longus Colli; Extensor Carpi radialis & Ulnaris; Flexor Carpi Radialis
C7	BRACHIAL	Scalene Anterior; Scalenes Posterior; Pectoralis Major & Minor; Serratus Anterior; Subscapularis; Teres Major; Latissimus Dorsi; Triceps; Pronator Teres; Longus Colli; Extensor Carpi radialis & Ulnaris; Flexor Carpi Radialis; Palmaris Longus
C8	BRACHIAL	Scalene Anterior; Scalene Posterior; Pectoralis Major & Minor; Subscapularis; Teres Major; Latissimus Dorsi; Triceps; Longus Colli; Extensor Carpi Radialis & Ulnaris; Palmaris Longus

❖ **Office Ergonomics:**

The Prevention and Control of Ergonomic Risk Conditions involves Three types of solutions reduce the magnitude of risk factors:

- Engineering controls: e.g. modifying workstation, obtaining different equipment
- Administrative controls: e.g. altering work/task organization
- Work practice controls: e.g. training and encouraging a specific method of task

ANSI/HFS 100-1988, American National Standard for Human Factors Engineering of Visual Display Terminal (VDT) Workstations in cooperation with the Business and Institutional Furniture Manufacturers Association (BIFMA) has developed and provided guidelines on Office Ergonomics. OSHA has adopted this format and has a basic resource to access:

<http://www.osha-slc.gov/SLTC/ergonomics/index.html>

<http://www.osha-slc.gov/SLTC/etools/computerworkstations/index.html>

Region	Action	Muscles	Strengthen	Lengthen	Release
Spine	Extension	Erector spinae assisted by Quadratus Lumborum + Lower Trapezius	<input checked="" type="checkbox"/>		
Spine	Flexion	Rectus Abdominis Internal/External Oblique	<input checked="" type="checkbox"/> Lower	<input checked="" type="checkbox"/> Upper	<input checked="" type="checkbox"/> Upper Rectus Abdominus
Neck	Extension	Upper Trapezius Splenius Capitis/Cervicus, Levator Scapula	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Neck	Flexion	Sternocleidomastoid Anterior Scalene, Longus Capitus/Colli	<input checked="" type="checkbox"/>		
Neck	Lateral Flexion	Same side: Upper Trapezius, Sternocleidomastoid, Splenius Capitis/Cervicus, Levator Scapula, Scalenes Longus Capitus/Colli]	<input checked="" type="checkbox"/>		
Neck	Lateral Rotation	Opposite side: Sternocleidomastoid, Scalenes Same side: Upper Trapezius, Splenius Capitis/Cervicus, Levator Scapula	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Scapula	Adduction	Middle Trapezius; Rhomboid Major/Minor	<input checked="" type="checkbox"/>		
Scapula	Abduction	Serratus Anterior, *assisted by Pectoralis Minor		<input checked="" type="checkbox"/>	
Shoulder	Horizontal Abduction Extension	Posterior Deltoid, Infraspinatus Teres Minor	<input checked="" type="checkbox"/>		
Shoulder	Horizontal Adduction Flexion	Pectoralis Major Anterior Deltoid Coracobrachialis		<input checked="" type="checkbox"/>	
Shoulder	External (Lat) Rotation	Posterior Deltoid Infraspinatus Teres Minor	<input checked="" type="checkbox"/>		
Shoulder	Internal (Med) Rotation	Pectoralis Major, Anterior Deltoid Latissimus Dorsi, Teres Major Subscapularis		<input checked="" type="checkbox"/>	
Shoulder	Flexion	Anterior Deltoid, Biceps Brachii, Coracobrachialis, Pectoralis Major (upper)		<input checked="" type="checkbox"/>	
Shoulder	Extension	Latissimus Dorsi, Teres Major Triceps Brachii (long head), Pectoralis Major (lower), (*assisted by Posterior Deltoid, Infraspinatus, Teres Minor)		<input checked="" type="checkbox"/>	
Shoulder	Vertical / Lateral Abduction	Deltoids, Supraspinatus; {Upper Trapezius / Levator Scapulae for 180°}			<input checked="" type="checkbox"/>
Shoulder	Vertical / Medial Adduction	Infraspinatus, Latissimus Dorsi Teres Major/Minor, Pectoralis Major, Triceps Brachii (LH), Coracobrachialis	<input checked="" type="checkbox"/>		

Kendall, McCreary & Provance Muscle Testing & Function, 4th Ed. '93 (adapted) – pg. 106. *Added.

Faulty Head & Shoulder Positions: Analysis & Treatment

Postural Imbalance	Anatomical Position	Shortened Tight Muscles	Lengthened Weak Muscles	Rx Treatment
Forward Head	Cervical Hyperextension	Cervical Extensors, Upper Trapezius , Levator Scapula	Cervical Flexors	<ul style="list-style-type: none"> • Stretch cervical spine extensors if short by trying to flatten the cervical spine. • Strengthen the cervical spine flexors if weak. • A forward head position is usually the result of faulty upper back posture. If neck muscles are not tight posteriorly, the head position will usually correct as the upper back is corrected. • Strengthen the thoracic spine extensors. • Due deep breathing exercises to help stretch the Intercostals and the upper parts of the Abdominal muscles. • Stretch Pectoralis Minor. • Stretch shoulder Adductors and Internal Rotators if short. • Strengthen middle and Lower Trapezius. Use shoulder support when indicated, to help stretch Pectoralis Minor and relieve strain on middle and Lower Trapezius.
Forward Shoulders	Scapula Abduction	Pectoralis Minor, Serratus Anterior, Upper Trapezius	Middle/Lower Trapezius,	
Kyphosis w/ Depressed Chest	Thoracic Flexion / Diminished Intercostal space	Rectus Abdominus, Internal Oblique, Pectoral Minor, Intercostals,	Thoracic Extensors, Middle/Lower Trapezius	

10. Biography: Mark McDonnell is a certified yoga teacher and is a registered practitioner with Yoga Alliance. He began his yoga instruction at Kripalu in 1994, received his yoga teacher training from Dr. Jeffrey Migdow, MD through the NY Open Center in NYC in 2001, and recently completed Structural Yoga Therapy training with Mukunda Stiles at the Integral Yoga Institute in New York City January, 2006. Additional influences include Pilates Mat certification, Ergonomics (Certified Associate Ergonomist with ORI), over seventeen years of traditional Japanese and Chinese martial arts training, and over thirty years of competitive ice hockey.