Chronic Headaches: Using Structural Yoga Therapy in a Holistic Treatment Approach

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Introduction:

In working with a number of chronic headache sufferers and because this past year I have been struggling with migraines myself, I've learned that…

1. With chronic conditions, sometimes there is no "cure" but there can be acceptance and making peace with one's situation. The journey from feeling frustrated and trapped by the limitations, to finding the freedom that comes from honoring one's needs, is a challenging and rewarding one.

2. Creating an environment of trust is essential to the healing process. Actively listening, being informed of all current resources, offering encouragement and support during their struggle is as important as any other therapy we can offer.

3. An in depth personal history intake is crucial to understanding the multiple contributing factors and to determine what will be most beneficial. The causes, manifestations, learning styles and responses vary significantly among clients. This requires that treatment be personally tailored to the individual.

4. Complex conditions demand creative and multi-pronged approaches. An integration of non-pharmaceutical therapies (bodywork, yoga therapy, diet, etc) as well as pharmaceuticals is usually best. Increasing experiences of deep relaxation and kinesthetic awareness was helpful and of fundamental importance in all cases.

5. In tension type headaches there is usually a muscular tension component. Migraines are more an issue of biochemistry, often involving hormonal changes, diet and family predisposition. Your client should be addressing these issues with an experienced physician while you work with the neuromusculoskeletal aspect and other affected systems. In both, migraine and tension headaches, stress, lifestyle habits, toxicity and trauma are usually contributing factors. Cervicogenic (neck-related) syndromes are also common to both.

6. Discovering and avoiding one's migraine triggers (dietary and otherwise) is crucial. They have a cumulative effect, so understanding one's personal threshold and lightening the trigger load is key to decreasing the frequency of headaches.

7. Clients need to be motivated to continue their healing when they leave your office so our job is both therapeutic and educational in nature. Establishing good habits in their self-care and a practice to cultivate self-awareness and self-love will help them to restore the equilibrium they need to heal on many levels and over a long period of time.

Case Study 1 (CS1)

1.a. Subjective: Initial Interview, Review of Symptoms and History, Pain, Self Assessment
William is a middle aged, well-groomed, successful entrepreneur, of medium build and short to average stature. He came to me for help with constant frontal headaches he had been experiencing for the past several months. As a well-educated, self-motivated, pitta-type personality he had researched many options prior to seeing me. His physician treated it as migraines with medication. He had worked with a chiropractor and physical therapist undergoing traditional treatments of ultrasound, traction, stretching and some biomechanical studies. MRI studies revealed mild retrolisthesis of C3 on C4 associated with a small central disc herniation and spondylosis at C6-7 with left-sided neural foraminal stenosis. This neck injury was most probably the result of a sporting accident many years before, where he was knocked unconscious after hitting his head and hospitalized with a concussion. At that time there were no significant problems and no diagnostic testing done on the neck region. During the course of treatment with me, the client also followed up with a neurologist, orthopedic surgeon and general practitioners. Another troubling symptom for him was increasing fatigue.

It is significant that William went from working long, hard hours managing other peoples' crises at a high stress busy firm to a less stressful but boring position in a bigger company to starting a private company where he works long hours again. His current situation requires he do everything himself including much more time keying at the computer. He reported that his symptoms were exacerbated when working at the computer, especially for longer than 1.5 hours. The client reported X-rays showed that his skull is set in a slightly forward position and he experiences increased tension and pain when he tilts his head forward to read or key at the computer. These ergonomic factors along with increased pressure and responsibilities at work and home all exacerbate the problem. I would classify Williams' headaches as tension type and cervicogenic with latent post-traumatic (injury) contributing factors.

Migraine, neck-related (cervicogenic) headache and tension-type headache are usually considered to be separate conditions, but in my experience they often occur together. There is some support in the literature that they represent a continuum, with several common underlying mechanisms, including mechanical dysfunction of the neck (see discussion in section 2a).

1.b. Objective: Physical Assessment, Initial Body Reading

Postural Analysis in Standing and in Motion

- Shoulders internally rotated; more severely on right side
- Left shoulder higher; right side rib cage higher; left scapula protracted
- Hips internally rotated bilaterally
- Right SI joint less mobile
- Decreased curve in thoracic-lumbar spine
- Difficulty distinguishing, isolating and integrating cervical, thoracic and lumbar spine segments

Hypertonicity noted in: upper abdomen; upper trapezius; scalp (frontalis); semi-spinalis capitus; paraspinals esp. left cervical, sacral and posterior upper pelvic musculature; Thoracic-lumbar spine is hypo-mobile and locked.

Palpation also revealed significant **Trigger points** along: medial border of scapulae but more on right side- rhomboids; upper traps bilaterally; basio-occiput including suboccipitals; lateral right myofascial track from scalp to scapula (probably from injury), including levator scapulae, scalenes and other cervical soft tissue, bilaterally; corrugator and orbicularis oculi (around eyes). These would be best released through bodywork.

Note: I did not complete the SYT exam until several months after we began treatment as the greater need was in relieving pain and managing constant headaches.

ACTION	ROM (first)	ROM (1 yr later)	Muscle Test	Muscle Test
	Rt Lt (in degrees)	**Rt Lt** (in degrees)	**Rt Lt** (scale 1-5)	**Rt Lt** (scale 1-5)
Cervical Rotation	40 50	**64 65**	4 3	**4.5 4.5**
Cerv.Lateral Flexion	30 30	**40 40**		**5 5**
Cervical Flexion	40	**45**	4	**5**
Scapular adduction			2.5	3
Scapular depression			3 (visual observation)	4
Shoulders: Flexion	165 175	**170 178**	3.5 4.5	**4.5 4.5**
Internal Rotation			4.5 3	5 4
External Rotation	75 80		4 3	4 4
Extension			4 3	4 3.5
Hips: Ext. Rotation	32 40	**40 40**	3.5 3.5	**4 4**
Internal Rotation	38 34	**35 35**	3.5 4.5	**4.5 4.5**
Hip Flexion			3.5 5	**4.5 5**

Significant Changes in Bold

1.c. Summary of Findings

Strengthen	Stretch	Release
Middle and lower trapezius	Upper trapezius	Bil. Cervical musculature including levator scapulae/SCM
Shoulder: External rotators (Post.Deltoid)	Cervical myofascial lines into shoulder	Rt. posterior myofascial line from head to shoulder
Lt. Internal rotators	SCM	upper trapezius and rhomboids
Rt. Flexors	Pectoralis	Rt. Pect.clav/Ant. Deltoid
Extensors (Latts)		Suboccipitals, frontalis (see 1b)
Erector spinae	Paraspinals (erectors)	thoraco-lumbar paraspinals
Hips: External Rotators		
Internal Rotators *		Hip:Internal rotators more to Rt.
Rt. Hip Flexors		upper abdominals

*The focus was in bringing awareness and increased mobility to this area, working towards stability and integrity in function and structure. The greater need was myofascial release.

1.d. Recommendations/ Response

Initial stages:

For relief of acute pain or to help mitigate at the onset of a headache (in addition to proper medication use), find a comfortable supported position, preferably in bed with lights out and quiet, as in Savasana. Use tennis balls, held in the bottom of a sock to **apply pressure at trigger points** at base of occiput while practicing breathing exercises. Micro-movements, especially in gentle cervical rotation, can help reveal trigger points as you allow your head to sink into the pressure upon exhaling and gently expand upon inhaling. A chilled eye bag can be placed over eyes for increased comfort. Icing the back of the neck and basio-occiput may be helpful.

To address the factor of cumulative stress contributing to the headaches, we discussed the need **to honor the body's natural rhythm** by oscillating between times of intense external activity and quiet internal focus. (There are interesting discussions on these and related themes; in the field of trauma healing[1] by Dr. Peter Levine where he describes the biological process of recovery after exertion or trauma, by Dr. Dardick and others, researching living in sync with nature's circadian (daily), ultradian (hourly) and lunar (monthly) cycles.[2] and, of course, in yoga therapy and Ayurveda.) For William, at this point of dis-equilibrium, it was more a matter of restoring harmony. One way to break the cycle was a recommendation that he **take a short break every hour or so from work at his desk to practice one of the following**:

Therapeutic Exercises in breathing, yoga therapy, and neuro-muscular re-education:

1) Breathing Exercises:

a. **Full Wave Breathing**: noticing all respiratory motions and four cavities in torso; a variation on that taught by Mukunda Stiles, I would practice with client, offering guided imagery I'd create, to help focus and relaxation, especially in savasana pose during bodywork; i.e."*Inhaling as the wave of your breath washes over you and into you bringing everything you need, lifting you as you rise on the wave and exhaling as it washes through you like a river taking everything you don't need, gently letting you down as you melt into the water that holds you."*

b. *S*egue into **Isolated Breathing** bathing each area (head, throat, chest, abdomen, pelvis) in breath including intercostal and Abdominal breathing, with special focus to releasing abdomen (William had learned, from growing up in "the hood", to guard and hold his upper abdomen very tightly as a protective mechanism)

c. Practice while spine responds with wave motion during **pelvic tilts** in supine position with knees bent (see section 6)

d. Return to Full Wave breath alone, focusing on the **rise** of the front of the body while inhaling and **falling** into the back of the body while exhaling…eventually resume natural breathing in Savasana

Later we explored gentle **Ujjaye Pranayama**

2) Facial exercises for tension around face, jaw, eyes and head

a. Jaw- addresses TMJ component by stretching and massaging masseter muscle

b. Eyes- gentle exercises with closed eyes changing focus in all directions, moving eyes to the right, left, up and down

3) Yoga Therapy for spinal correction and ROM (that can be done even at desk)

a. **Thoracic/cervical extensions** encouraged throughout day, i.e. after working at computer, to counter forward flexed muscular patterning and open pectorals

Some variations on JFS as taught by Mukunda Stiles[3]

b. **Spinal ROM** in chair: Flexion/Extension/Lateral Flexion and Rotation (inhale to extend spine and open front of body, exhale to gently and gradually twist using mid (thoracic-lumbar spine) to accomplish most of the movement with shoulders and neck following)

c. **Cervical ROM**: to begin to release all myofascial tracks from head to shoulders; to stretch upper traps
d. **Shoulder ROM**: isolations and rotations with and without arms extended.

Abdominal Twist (Jathara Parivartanasana) as taught by Mukunda

4) Discussed migraine triggers and client agreed to abstain from any alcohol consumption and **reduce pitta aggravating foods** for the time being (see chart p.23)

5) Bodywork was needed at every session to release soft tissue indicated, such as the myofascial lines from head to shoulders, suboccipitals to frontalis muscles and other hypertonicities, trigger points and holding patterns. See next case study and Appendix A for further discussion and some detail on techniques employed.

One month later:
Response: William noted that disciplined breaks have been helpful but sometimes work demands make self-care difficult. Bodywork is extremely helpful with an amazing response to cranial work along eyebrow ridge (near "third eye") See appendix for more detail on techniques.

Ergonomic Assessment: We discussed the crucial element of ergonomics and the detrimental effect of long hours at the keyboard with improper posture; neck flexed to see keys or hyper-extended to see monitor; scapulae elevated and shoulders flexed to type; leaning in forward, slouched position.

Cervical glide with traction exercise (this is one I expanded) in neutral, lateral flexion, and rotation to address and release myofascial tracks from neck to shoulder including; anteriorly to clavicle, posteriorly to superior medial border of scapulae; laterally along upper trapezius. Begin with breathing for centering; then inhale to expand; on exhale retract elongated neck with chin towards throat as if leaning against resistance, while simultaneously depressing and adducting scapulae, engaging trapezius and rhomboids; inhale back to neutral posture. Repeat, moving neck through all positions with self-traction and resistance, while keeping shoulder fixed and exploring through cervical ROM.

Postural retraining:
Sitting 101 lesson on proper posture using 90 degree lines, etc. (see p.30)
-In addition to spinal ROM exercises, also taught **Feldenkrais exercises**[4] such as pelvic clock (using pelvis to make circle on seat clockwise and counterclockwise)
-Rib circles and all circular movements possible throughout joints

Standing: Exploring alignment and breathing in **Tadasana** (see more discussion in General Recommendations)

"Walk-talk": this is a lesson I've developed about the anatomy and therapeutic experience of conscious walking. It involves understanding how the hip flexors initiate walking, articulating through the feet, freedom in the core and taking the lessons of Tadasana into your walking

William enjoys regularly **swimming after work.** It offers him the multiple benefits of stress release, cardio-vascular fitness and strengthening. I suggested he include **back stroke** and focus on strengthening his shoulder flexors, external rotators and extensors.

Two months later:
Structural Yoga Therapy exercises
All exercises to be repeated at least 3 times or held for 3-6 breaths to begin
CAT Vinyasa-to be done in fluid vinyasa style initiated with breath to experience relaxation benefit and increase connection with all parts of spine; inhale as front of body opens and exhale as back of body expands; emphasize not leading with head or neck but letting the core initiate

movement and letting head go at end of exhale; consciously engage abdomen during spinal flexion; strengthen mid and lower trapezius, adducting and depressing scapulae during spinal extension.
Head to knee Forward bend **(Janu Sirasana)**-with focus on external hip rotation; spinal release; initiating from unhinging at the hip with no strain in back by extending spine before releasing gently
Modified Cobra `(Bhujangasana) with focus on increasing mobility to mid-spine; fully opening abdomen from pubic bone to breast bone (especially helpful for pittas to release tension from mid abdomen); strengthening erectors in spinal extension; strengthening mid and lower trapezius by actively adducting and depressing scapulae and opening pects
End routine in Child pose- for full spinal release and rest

Introduced **Alternate nostril breathing** with focus on left nostril (lunar) breathing for its cooling effect. The physiological intent was to address sinus congestion and possible decreased oxygen intake as factors

Bodywork: Experimented with client taking more active role during bodywork offering movement and resistance to better access soft tissue and increase mind-body connection and awareness. Doing bodywork in asanas was also well received such as massage and **assisted stretching from child pose**. Particularly effective was gradual full spinal flexion with massage.

Three months later:
We taped instructions for exercises so it would be easier to follow.
Assessing Response; Client had been feeling much better with decreased frequency and shorter duration of headaches; down from daily long episodes to once a week for several hours. After enjoying this reprieve for a month, William experienced several months of benign positional vertigo, which required increased rest and a break from the exercises, so we focused on bodywork.
Recommendations: We gradually reintroduced neuromuscular/postural retraining through practice of Therapeutic walking, Tadasana (mountain pose) and Pelvic tilt in chair.
Next we added back practice of Cat and others respectively

Client is researching new office chair, equipment and consultation with **ergonomic specialist.** He has ordered voice activation software to minimize typing needs.

Four months later:
Assessing response; Isolating trapezius and coordinating breathing during asanas proved challenging so we **practiced adducting while depressing scapulae upon inhaling and abducting scapulae upon exhaling without any other movement**. The following week we explored the opposite breath pattern; elevating and abducting scapulae on inhaling and engaging mid and lower trapezius on exhale. Then we integrated the original breathing pattern while practicing Cat pose.
Other Recommendations:
Reviewed JFS for neck, shoulder and spinal ROM
Reviewed Cat and Cobra
Continue to open Pectorals

Six months later:
Response: Came in with bad headache but William noted it was the first time in a very long time. Longer hours at PC due to work deadlines triggered old pattern.
Recommendations:
He decided he is finally buying a timer I had suggested previously, to keep at desk to remind him of needed scheduled breaks.

We added back into his routine a **Bridge vinyasa**; starting with wave breathing into pelvic tilts and spinal flexion/extension waves into bridge to articulated rolling bridge.

Seven months later:
Recovering from fall- injured ribs and back. Focus on bodywork. The greatest, immediate results come from the cervical and cranial bodywork for headache relief and particularly the pressure point work around the eyes.
Response: The following week his wife had a relapse of a serious neuromuscular condition and he was under stress having to do everything…but even though he experienced an increase in upper back tension it did not trickle up into the usual headache pattern.

Later Stages:
Headaches sometimes come with no rhyme or reason though not anywhere near as constant as in beginning stages. Still using tennis balls before sleeping.
Reviewed exercises; Client still has tendency to overextend and lead with neck so gave correction for this**.**

Taught modified Sun Salutation. William enjoyed having this solid, comprehensive routine to practice whenever he felt the need at first and then on a regular basis. Later we added Tree Pose to the vinyasa. This was all very satisfying to his pitta nature.
(Occasionally had to stop practice because of injury incurred, i.e. Hamstring sprain or cracked rib. We came to share a sense of humor about these recurring pitta driven injuries.)

Ergonomic help: Finally, after the **voice activation software** and instructions arrived, he was able to utilize this very helpful technology. We both believed this plus the recommendations of the ergonomic specialist made a huge difference.

Over One year later:
Response: Hadn't had a headache in months; Upper trapezius revealed much less hypertonicity;
Pitta Practice: Reminded and advised to practice stretching exercises more gently and dynamically especially when pain or tension is increased. Considering William's predominantly pitta nature and the need to counter the tendency for competitiveness in his movements, we worked on ending a practice feeling calm, cool and content.

Reviewed Cervical glide with traction exercise for self-care.

1.e. Response/Assessment/Summary of Results of Recommendations:
William exhibited admirable patience (especially for a pitta) on his rocky road to recovery. This road was replete with thorny obstacles and setbacks; work pressures, family illness, personal illness, infections, injuries, and frustration. Some were unavoidable while others stemmed from the very challenges he was working with.

"Pit Stop**"-**True to his pitta nature, as soon as William started feeling better for longer periods, he'd overdo it and occasionally hurt himself while exercising. One such time, most recently, occurred when he used a new weight machine inefficiently, while in an agitated state, probably recruiting accessory muscles. At times like these, we would need to interrupt the treatment plan to nurse the new injuries but it was always an opportunity to observe these tendencies and learn more.

The yoga therapy approach was somewhat foreign to him in language but familiar in feeling. With several routines and relaxation techniques in his toolbox, William is managing his stress levels and structural imbalances more effectively. He credits those practices and even more so, the bodywork with making the difference. We went from our regular weekly appointments to occasional check-ins and then I'd only hear from him when there was a crisis at home, at work or in his body. I haven't seen him in a long time and though I miss our sessions, I consider it good news.

Through all the setbacks, he moved steadily and persistently forward and even with the frustration had many more moments of increased appreciation. I was glad to help create a dependable refuge in which he could heal and hopefully he discovered he could continue to carry it within himself.

Case Study 2 (CS2)

1.a. Initial Interview, Review of Symptoms and Health History, Subjective Pain Level, Self Assessment:

Emma is a pre-medical school student in her early 20's, of small to average height and thin but muscular build. She has been experiencing migraines for over a month, sometimes lasting for days. Her condition is complicated with multiple joint problems, tension factors, prior injuries, surgeries and family predisposition. Her mother and sister have also suffered with migraines She remembers having migraines as a teenager during a particularly stressful time when she underwent several knee surgeries and then again while overseas as an exchange student in college. Her doctor thinks her recent headaches are stress related, even though her self-perception is that she doesn't currently feel overwhelmed, though she admits that it is a stressful time. When we discussed this further, I discovered that in addition to school pressures, her friend recently died which triggers her deep chronic sense of loss and fear of dying young. Prior family losses, divorce and a history of chronic pain undoubtedly have reinforced this feeling. She has experienced joint pain since high school, a mild head injury in middle school and hip, upper trapezius and low back pain for two years. This contributes to her body exhibiting what I call the "trickle-up theory" in which the presenting pain symptoms may stem from imbalances and pain in remote but connected areas of the body. (One fascinating structural explanation of this can be found in Tom Meyer's book on myofascial meridians.[5] For headache sufferers who also present with back pain, the myofascial connection that seems most relevant is the amazing relationship between the suboccipital muscles [deepest postural, posterior neck muscles that rotate the atlas(C1) on the axis(C2)], the eyes and the entire posterior musculature.)

This young, active, vibrant vata-pitta female often "feels like an old woman whose body is hiding something".

1.b. Objective; Physical Assessment:

Postural Analysis in Standing:

- Right shoulder internally rotated
- Left shoulder (tilt) higher and posteriorly shifted
- Right humerus medially rotated
- Forward positioning of head with slight shift to right and
- Upper cervicals in extension
- Mild increased thoracic curve (kyphotic)
- Hips internally rotated but more so on the right
- Knees medially rotated

In Motion: During spinal flexion in standing- neck leads and remains in extension and hips move posteriorly out of alignment.

Upon Palpation: Thoracic vertebrae are shifted slightly right and mid-lumbar vertebrae appear inverted (rotated) or shifted anteriorly.

Hypertonicities noted in: mid-trapezius and rhomboids; soft tissue at base of occiput such as the suboccipitals (postural muscles), semispinalis capitus, splenius capitus; piriformis; gluteus medius; ilio-tibial band (ties into her knee, hip and back issues which exacerbate her presenting complaint)

In these cases, I often wait to complete SYT evaluations and exercise instruction because of the greater need in the beginning stages for thorough consultation and bodywork. These are initial findings in Dec. 2005.

Muscle Action	**ROM** (in degrees) **Rt // Lt**	**Muscle Testing** (scale from 1-5) **Rt//Lt**
Shoulder; External Rotation	**80// 85**	**3 // 3**
Cervical Lateral Flexion	**40 // 38**	**4 // 4,5**
Scapular adduction//depression		**3.5 Bilat.**
Shoulder Flexion	**165 // 170**	
Spinal Extension		**upper 3 //lower 4**
Hip External Rotation	**30 // 35**	**2.5 // 3**
Hip Flexion	**140 //145**	**3.5 // 3**

1.c. Summary of Findings

Note: Need is Bilateral unless otherwise noted

Strengthen (K)	Stretch (P)	Release (V)
Shoulders: External rotators	Upper trapezius	Cervical musculature
.Middle and lower trapezius	myofascial tracks from neck to shoulder	Upper and Mid-trapezius
Erector spinae	Levator scapulae	Rt. Pectoralis and Ant./Mid Deltoid
Hips:External rotators	Pectoralis m.	Hips: Internal rotators
Psoas	Piriformis	Psoas
Quadriceps		IT Band
		Quadratus Lumborum

Note: Even though this is a new client, still in the early stages of treatment, I thought it important to include her case because it demonstrates the complex multitude of factors that can contribute directly and indirectly to migraine conditions. It also serves as a good contrast to the prior case in which progress was slower than for Emma, who is responding very quickly.

1.d. Recommendations:

(At each visit we used the bodywork I've developed to help relieve pain, increase mind-body awareness, release indicated soft tissue and musculature and re-educate nervous system)

1st visit: Nov. 2005

The 5R's: We discussed some key guidelines I outlined and call the 5R's (see General recommendations, p.25, for more detail)

1. **Regulate rhythms** (times for rest, activity, eating, etc) I thought this was particularly suited for Emma considering her vata tendencies and stress factors.
2. **Record in journal** to mirror patterns
3. **Rid/Avoid headache triggers** (see chart, section 5, p.23) especially in diet.
4. **Realistic expectations and strategies**, i.e. using medication wisely, plan ahead; patience
5. **Relaxation**- Regular practice

2nd visit

Taught exercises and self-bodywork;

1. **Cervical glide with traction** (this is one I developed) in neutral, lateral flexion, and rotation to address and release myofascial tracks from neck to shoulder including; anteriorly to clavicle, posteriorly to superior medial border of scapulae; laterally along upper trapezius. Begin with breathing for centering; then inhale to expand; on exhale retract elongated neck with chin towards throat as if leaning against resistance, while

simultaneously depressing and adducting scapulae, engaging trapezius and rhomboids; inhale back to neutral posture. Repeat, moving neck through all positions with self-traction and resistance, while keeping shoulder fixed and exploring through cervical ROM.

2. **Thoracic/Cervical Extensions**; Fully Extend cervical and thoracic spine like a standing modified cobra but with arms low, behind back. While careful not to compress cervical vertebrae, focus on stretching pectorals and retracting/adducting scapulae.
   An alternative stretch for the pectorals is restorative Fish using bolsters and supports as needed.
3. **Shoulder ROM exercises;** similar to JFS but with arms in different positions such as fully extended, while exploring restrictions to free and full movement of shoulder girdle
4. Emma feels better with exercise. In assessment (such as spinal alignment) her readings changed after movement, but many exercises stress her knees and the gym doesn't excite her. We discussed finding **safe aerobic exercises she'd enjoy such as taking a modern dance class** at the college. She liked that idea as she loved dancing as a teenager but had to stop because of finances and joint problems.

Discussed Lifestyle changes:

1. **Experiment with changing active, resting and sleep patterns:** Instead of oversleeping from 11pm until 10am, try waking at 8am, gently transitioning into high activity; take quiet break for full hour in afternoon before resuming activity again until gentle transition to bedtime at 11pm.This gentle alternating from an external focus to an internal focus may help address the longing for a saner pace.
2. **Continue monitoring migraine triggers** with help of printed chart given after an expanded discussion reviewing information on Lifestyle Changes and Identifying and avoiding aggravating factors to reduce the frequency or severity of migraine attacks. This approach requires close monitoring (with regular use of a diary) of attacks and identifying aggravating factors such as stress, foods, such as red wine or coffee, skipping medications, and sleep pattern changes. More scrupulous avoidance of known headache triggers may be necessary around the time of the period and less important during the rest of the month as triggers have a cumulative effect.
3. **Raynaud's syndrome** complications: Keep body, especially hands, warm (A circulatory condition associated with spasms in the blood vessels of the fingers and toes causing them to change color. After exposure to cold, these areas turn white, then blue, and finally red)

3rd Visit: Additional exercises; to be done in vinyasa style with breath initiating movement to balance Vata

1. **Hip rotations similar to JFS** for neuromuscular re-education, to open joint action and address dysfunction in hip external rotation
2. **CAT** pose to increase awareness, articulation and integration of full spine with an additional focus on strengthening mid-traps and shoulder external rotation; Do traditional cat pose initiating from core for 3 full movements/breaths followed by version articulating one vertebrae at a time from tailbone up to cervicals.
   a. I cautioned about her tendency to lead movement with her head and neck and then not release them fully upon flexion. We discussed how this is a protective stance and how being aware of that would seep into her experience of other movements and posture; also observed tendency to skip over mid-thoracics- least mobile area of spine.
3. **Sunbird** as in Mukunda's JFS to open hip and connect with psoas. Also allows option to do hip rotations in this position for fluid vinyasa.
4. **Postural retraining** as explained in general recommendations, including to fully explore experience of standing (Tadasana) through breath, imagery, experiential anatomy; gradually evolving into slow walking, then at normal pace but maintaining awareness of each aspect of movement.

-Discussed Aryuvedic dosha and principles (she found it interesting and concurred regarding her vata-pitta tendencies)

-Reviewed Info sheet on Raynaud's alternative treatments; Ask doctor re side effects of pain medication

-Plan for travel discussion; maintain regular patterns
Avoid dehydration on plane, etc.
Bodywork focus was on releasing trigger points in cervicals, tension in trapezius, spinal ROM, all Hip ROM, especially rotation, deep work in opening soft tissue at anterior hip (ilio-psoas) and posterior (piriformis) and balancing pelvis.

Plan for next session; to teach **Vinyasa of Pelvic tilt into Bridge with variations** including psoas strengthening with leg lifts and shoulder strengthening with arm raises, Begin with Breathing exercises such as wave breathing (see general recommendations for more detail) and some version of **Spinal twist**
Plan to finish SYT evaluation and address other findings, i.e, QL, pectoralis, more lifestyle issues, etc. as time allows and hierarchy of needs met. We're off to a great start!

1.e. Response/ Summary of Results of Recommendations

After 1st visit: Back feels more comfortable as a result of bodywork; no headaches this week but a dull ache at basio-occiput and sharp pain usually occurring at 9:30am and 12noon.

After 2nd visit: Cervical exercises helped during long hours of study for finals; No headaches this week!! Most helpful recommendation thus far has been to **pace day in a saner way** through gentle transitioning and quiet breaks; Noticed that shoulders felt tight and uncomfortable at beginning of exercises, but once warmed up was easier (We discussed how these last two observations are in line with vata's nature as well as the need for warmth, so she felt very justified in taking an island vacation during winter break!)
Feels empowered, more hopeful and in control; Increase of energy

After 3rd visit: (reported via phone call) Starting to connect with hips which feels a little frightening (vulnerable) but exciting at the same time. Experiencing less tension in neck and shoulders. Avoiding migraine triggers is difficult but definitely helping. Getting better with CAT and Spine feels less compressed, more open. Looking forward to vacation and then continuing to learn with me.

I will be seeing Emma again after her winter break.

Honorable Mention A few other cases I've worked with in recent years deserve honorable mention, as I believe they help demonstrate the wide range of possibilities when presented with headache sufferers. I am not, though, going into detail about findings and other aspects of their cases.

Melanie was a gentle, sensitive, artistic, bright student who suffered with atypical migraines complicated by neurological symptoms such as spasticity, loss of muscle control in extremities, extreme weakness, disorientation and general malaise. She had made very little progress with the many medications neurologists had tried with her and they presented a vicious cycle of secondary symptoms to deal with. What was most helpful for Melanie was for us to bring as much wisdom and peace to the situation as possible. Nothing would dependably work most of the time but all efforts that honored the need for serenity; including bodywork, recommended practices of meditation and movement sequences, talking, listening, caring…all made a small difference, but enough to get through until the tides shifted.

Bill was a caring, intelligent, generous, busy middle-aged man who's primary issue was back pain but who also suffered from headaches. During times of feeling down, his near tri-doshic but primarily kapha nature would sometimes lead him to get stuck and neglect the practices that he knew were helpful to him. We focused on staying inspired and motivated to progress. Recommendations and care were multi-faceted, focusing on decreasing toxicity in diet and thinking and inviting healthy self-loving behaviors. One helpful tool was keeping a diet journal. In order to isolate foods and elements that were triggers or aggravating, we started off with a modified cleansing/fasting diet. Bill spent one week eating a restricted diet of "safe" foods, such as squash, brown rice, greens, fish and some seasonal fruit. Gradually he reintroduced one food at a time from least to most suspect, eventually getting back to a more customary though restricted diet. Through journaling we discovered which foods were potential triggers and most toxic. Dietary changes were difficult for him at first but once incorporated, made a difference in his energy level. It took some patience and creativity, but I enjoyed finding just the right mix of appropriate movements and asanas for his weakened body. He was a pleasure to work with as he responded quickly and with much appreciation to the structural yoga practices, bodywork and all input.

2.a. Name and Description of Condition (What, How and Who)

There are two main types of headache: primary and secondary

1. Primary headaches include tension-type, migraine, and cluster headaches and are not caused by other underlying medical conditions. More than 90% headaches are primary.
2. Secondary headaches result from other medical conditions, such as infection or tumors that increase pressure in the skull. They are usually accompanied by other symptoms. Though very rare, ruling out an underlying serious condition, especially over age 50, is beneficial, if only to relieve the stress and worry of the possibility.
3. Post-traumatic headaches appear after a head injury and are constant. Note that migraines later in life may be related to earlier, previously healed injuries.

Cluster headaches are distinct from migraine and tension-type headaches; are relatively rare, affecting about 1% of the population, mostly male. They occur in clusters lasting weeks, with severe pain, though one attack lasts no more than two hours. The pain centers around one eye, that may be inflamed and watery, with possible nasal congestion The headaches can occur around the same time each day during the course of a cluster and there is commonly a history of heavy smoking or drinking. In patients who have chronic cluster headaches, it is noted that two-thirds of the attacks usually occur during the last 2 hours of sleep In those who have sleep apnea, it is suggested that they may be experiencing an episodic decrease in oxygen during the night that can precipitate the headache attacks

(This paper assumes you are working with a client experiencing primary headaches and that they are under a medical doctor's supervision.)

Women and Migraine facts; On average, 16% of women suffer from migraine headaches. In the United States, 8,700,000 women suffer from migraine each year, and 3,400,000 (just less than half of the women) have more than one migraine attack per month. Since heredity and hormones play such a big factor, woman between the ages of 30 and 50 are more likely to get migraine headaches -a period when many women are at the height of their professional career, family responsibilities, and social life. In women migraine sufferers, 60% of them experience migraine during menses as well as during other times of the month; 14% of women have migraine only during their menstrual period.

Brain Chemistry and What causes Migraines?

Most researchers now believe that the brain chemistry underlying most severe headaches is a variant of the chemistry of migraine (although there are exceptions, such as cluster headache).

Dr. Vince Martin, of the Univ. of Cincinnatti, and Dr. James Weintraub, among other experts, put forth these explanations:

> **The "Serotonin" Theory:** Serotonin is a natural chemical in the brain that has an important function in transmission of signals from one brain cell to another. Shortly prior to the development of a migraine headache, serotonin levels appear to be low in the bloodstream and possibly within the brain. It is possible that this low level of serotonin may then lead to the development of a migraine headache attack, since abnormalities in serotonin activity have a well-demonstrated role in migraine. Estrogen increases the production of serotonin in the body and also influences the way in which serotonin binds to nerve cells. It is possible, then, that low levels of estrogen, as seen at the time of menstruation, could cause changes in the serotonin system, followed by headache. Some migraine medication and other treatments affect serotonin action in the brain and can stop a migraine.
> Also, there is some evidence that migraine sufferers are supersensitive to the effects of another neurotransmitter, namely dopamine. A rise in dopamine stimulates nausea centers in the brain and can eventually cause vomiting.
>
> **Blood vessel changes:** Blood vessels in the head may first tighten and then expand during a migraine attack, changes that may explain the aura before and the throbbing pain during the migraine. This imbalance is thought to cause the blood vessels on the surface of the brain to dilate thereby causing nerve irritation in the surrounding inflamed area. Some migraine medication and other treatments may work by counteracting or blocking these changes in the blood vessels.
>
> **Brain and nervous system changes:** Imaging studies have identified an area in the brainstem at the back of the head that is activated during a migraine attack. A spreading wave of decreased activation occurs in the brain at the onset of an attack, which may account for the blurred vision or numbness that some people experience in the migraine aura.
>
> Other factors that may play a role in the development of menstrual migraine include:
> 1. the relative proportions of estrogen and progesterone;
> 2. increased secretion of prostaglandins (substances that sensitize pain receptors and cause inflammation around the cerebral blood vessels).
> 3. dysfunction of platelets, a component of the blood which contains serotonin;
> 4. decreased levels of brain magnesium (which increases brain excitability);
> 5. decreased natural brain endorphins: Some research has shown an accompanying breakdown in the brain's pain-management system. The brain makes its own narcotics (opiates), such as the endorphins. These brain-produced opiates may be less available during a migraine, leading to increased sensitivity to pain."

Causes of Tension Type Headaches: Most headaches are tension type headaches. They can result from a hypertonicity in the cervical and upper thoracic musculature particularly the trapezius and levator scapulae as they insert into the basiocciput affecting the soft tissue surrounding the skull. Habituated stress reactions interfere with the normal functioning of the neuromuscular system and can cause our muscles to be stuck in a contracted state. It's as if there is no off switch and the system is on autopilot. Some somatic educators, like Thomas Hanna[17], refer to this as "Sensory Motor Amnesia". This in turn sets off a series of pathological adaptations in the body. Our muscles are overworked, exhausted, constantly using energy and producing lactic acid which can manifest as pain. Neighboring muscles are recruited to take over part of the work from the now dysfunctional muscles and they may in turn suffer the same fate. The teamwork has broken down as if only the pitcher and third baseman are available to do all the fielding. How long can that last?

Dr. Thomas Brofeldt, MD at the University of California's Davis Medical Center also believes most headaches arise from muscle fatigue and tension in the back of the neck, specifically the semispinalis capitis muscles, due to problems in posture. Particularly in people who have rounded (internally rotated) shoulders, exaggerated thoracic (kyphotic) curve, with a tendency to hold the head forward, these "headache muscles" are in a chronically foreshortened state. This fatiguing contraction causes a reduction in blood flow because of a reflex increase in sympathetic tone by constricting the blood vessels in neighboring tissue. If the muscle contracts further the increase in intramuscular pressure may prevent blood and nutrients from reaching the starving muscle cells. In a protective reflex, chemicals are released to forcefully dilate vessels to prevent muscle ischemia (oxygen/blood starvation). This is experienced as headache pain, now a migraine. Further evidence for this theory lies in the need for migraine sufferers to achieve a state of total rest-the delta stage of sleep in which muscles in complete relaxation can be replenished with glycogen and nutrients. This essential need for deep relaxation gives further credence to the idea that yoga can be of service to headache sufferers.

More and more physicians now feel that migraine and tension type headaches and their triggers are more related to each other than once thought. They may be caused by somewhat similar changes in the brain's neurotransmitters. This thinking is in line with my clinical experience. At the very least, many people suffer from both and one may lead to the other so, in essence, whatever the initial causes, you are dealing with a migraine pattern.

Julie Mills, MPT at Michigan Head Pain and Neurological Institute believes that;

> "Many patients have headaches that originate in the muscles or joints of the neck. The name for this type of pain is **cervicogenic headache**. (The word cervical refers to the neck, and cervicogenic means originating in the neck.) Moreover, patients who have migraines or tension-type headache may also have a cervicogenic component to their head pain. In other words, a migraine sufferer may sometimes have his or her pain brought on by neck strain, much as it can be brought on by migraine triggers such as glare or fumes. One important cervicogenic trigger is prolonged awkward posture, such as sitting too close to the screen in a movie theater, or talking to a dinner partner who is seated next to you, requiring you to keep your head slightly turned. Another potential trigger is repetitive motion such as painting or raking. Stress, cold weather, exposure to drafts and vibration are other triggers of cervicogenic headaches.
>
> Just as important as hands-on treatment is the identification of factors that may be causing the neck problems in the first place. Poor posture and poor workplace ergonomics, faulty body mechanics, and physical activities that stress neck tissues must be addressed to ensure effective treatment. For example, a person sitting in a somewhat slumped posture at a computer all day is creating enormous pressures and tensions on the neck, many of which can lead to tissue damage and pain. When sitting in a slouched position, the head is positioned in front of the rest of the body. With the head in this position, the muscles in the back of the neck are working extra hard just to hold the head up. This posture also exerts a significant amount of compressive force on the spine and, in particular, the junction between the head and neck, both of which can be a source of problems for many headache sufferers. Slumped sitting also creates weakness in the back muscles and the muscles in the front of the neck. All these factors can contribute to or even cause headache."

Another common source of cervicogenic headaches is trauma such as whiplash. Neck trauma can overstretch muscles and create stiffness and pain in the joints of the spine. Injuries of this sort often respond very well to physical therapy, particularly if treated early after the injury.

2.b. Gross and Subtle Body Considerations
Gross Body - Physical Symptoms
Symptoms vary from person to person and from attack to attack. See chart in section 2a for distinguishing characteristics. Pain can be on one or both sides of the head, back of the neck, in the face, around the eyes or in the sinuses with accompanying dizziness, difficulty in concentration, stuffy nose, nausea, vomiting or less common, neurological symptoms such as spasticity and/or flaccidity in extremities and overall weakness.

Characteristics Associated with Primary Headaches Help Differentiate Tension-Type Headaches from Migraine[19] (though some researchers believe that many severe headaches thought unrelated to migraine such as sinus and certain tension headaches may in fact be migraine.

Symptom	Tension	Migraine
Intensity and Quality of Pain		
Mild-to-moderate	•	•
Moderate-to-severe	•	•
Intense, pounding, throbbing and/or debilitating		•
Distracting but not debilitating	•	
Steady ache	•	
Location of Pain (though migraines vary in location throughout face, head, neck)		
One side of head		•usually
Both sides of head	•	•
Associated Symptoms		
Nausea/vomiting		•
Sensitivity to light and/or sounds		•
Aura before onset of headache such as visual symptoms		•
Note: Rebound headache may have features of tension and/or migraine headache		

Sleep apnea, sleep deprivation and insomnia are common sleep problems that are associated with headaches. It is believed that structures in the brainstem, play a significant role in headache generation and normal sleep

Subtle Body – Energetic, Emotional, Mental, Spiritual

Yoga has long recognized what modern medical science is now beginning to study; that our subtle bodies (thought, emotion, spirit) and fundamentally *prana* are intimately related, deeply influence and ultimately govern our physical body. Therefore illness can be viewed as a manifestation of disharmony within or between our internal and/or external environments. Emerging fields such as psychoneuroimmunology are mounting evidence that prolonged, chronic states of stress and emotional disturbances significantly contribute to disease.

Many therapists that work with people in chronic pain know from experience that emotional and physical pain are so similar that you can't fully address the physical pain without addressing

unresolved emotional pain and grief. In fact, some experts suspect that in cases of chronic physical states of pain there is almost always unresolved shock and traumatic stress that has been held in the body.[1] In order for clients caught in a vicious cycle of trauma and pain to truly progress they must learn to unhook their current pain from past trauma.

Even in less severe cases, where we are simply dealing with average pain issues, it is beneficial to help clients increase their mind-body awareness and notice their unhealthy patterns of response. They can then begin to unlearn, reverse and respond in healthy ways that promote equilibrium. This could involve neuro-muscular retraining, relaxation exercises and practices that are abundant in the Structural Yoga Therapy system.[3]

In my personal clinical experience, I have repeatedly observed that people's bodies often reflect their history. Not only in the obvious ways such as old injuries still stored in the tissues but in the more subtle ways we carry our past; particularly our parents, our ancestors and their legacies, in our bodies. More than once, while working deeply within the underlying tissue of a client's neck, they have had a profoundly moving experience related to a lost parent, a burdened relationship, some grief or coping pattern that needs revisiting and re-nurturing.

It is the nature of existence that we will encounter hardship, sadness, and struggle along our journey. It is the way we handle these obstacles that makes the difference. Many times we have the choice to avoid the confusion but we are oddly attracted to it. If we approach a challenge with fear, most likely we brace ourselves for the worst, which involves tensing muscles, inhibiting breathing and responding with more effort than required. We may anticipate the problems and therefore are in a constant state of reacting to them even before they happen. This rehearsal keeps us in a prison of our own tension. When we can find something to trust in ourselves and in our environment, we can relax and make a more conscious efficient choice.

Another aspect is the different ways in which people respond to the gross body pain symptoms. The same principles of trust and encouraging working as a team with your body apply here. It is similar to the way a woman during childbirth labor pains can relax and breathe through the pain of each contraction as it comes and goes, as opposed to panicking for fear something is terribly wrong. The latter response does not allow one to travel through the tunnel of pain and emerge on the other side feeling more empowered than before. This is the journey of rediscovery we want to facilitate in our clients.

It is without judgment that we can help facilitate healing. The circumstances that cause disease are often completely out of the control of the patient; the disharmony may be in the toxicity of the external environment or in inherited structural imbalances. In these cases cultivating internal harmony may not cure the disease but will honor and enrich the deeper experience of being human.

Another equally important aspect of the subtle body experience is the effect this disease has on the individual, including the emotional and psychological challenge of never knowing when or how hard the next migraine will hit. As we work with our clients, we need to keep in focus the tremendous toll it takes on their lives and how that can also contribute to a viscous cycle of seemingly unmanageable stress and frustration. The next section elaborates more on this.

2.c. Related Challenges (lifestyle, diet, limitations on activities)

The Human Challenge: As previously mentioned, some of the greatest challenges for headache sufferers are the endless limitations on daily activities and plans a serious headache can impose. This along with the seeming unpredictability and ever -pervasive threat of a headache is something one has to come to terms with. Cultivating the art of balancing acceptance with perseverance; our inner strengths of child and adult, is a noble and necessary pursuit and resolution to this challenge.

How Does Migraine Impact the Sufferer's Life, Family and Work? [6]As with any chronic illness the family's lifestyle is greatly affected. Besides the emotional toll of the spouse worrying and the children stressed, the family is compromised financially by increased health costs and decreased income from the migraine sufferer. The spouse often has to pick up the slack with that and childcare and household chores. Because a headache can hit unexpectedly the family may have to change plans, miss social engagements, school and athletic events, which can leave the children feeling discouraged or neglected.

Friends or colleagues may be called on to offer support or fulfill responsibilities more than usually expected.

Productivity, efficiency and attendance at work are compromised, which can have far-reaching ramifications.

The Challenge of Medication management: --Alvin E. Lake,PhD, of Michigan Head*Pain & Neurological Institute[6] offers these important considerations:

> "**Analgesic rebound is linked to changes in nerve cell receptors.** Narcotic analgesics work by acting like the brain's own opiates, relieving pain but not necessarily affecting the chemical "cause" of migraine (serotonin and dopamine changes). If a person takes narcotics frequently or in large amounts, the number of opiate receptors begins to decrease (down-regulate). The brain becomes desensitized to narcotics and they lose their effectiveness. In fact, the brain's own pain management system becomes further disrupted, since the brain will be less responsive to its own internally produced opioids as well. It takes a period of time after withdrawal from narcotics for nerve cells to up-regulate and re-establish a normal level of opiate receptors.
>
> **Why does the frequent use of analgesics increase the frequency of headaches and interfere with the effectiveness of preventive medication?** Large concentrations of nerve cells that communicate with serotonin or opioids lie right next to each other in the brain stem, along what is called the "pain pathway." Recent research has shown that analgesic overuse–including over-the-counter pain relievers–also leads to changes in the number of a certain type of serotonin receptor. The up-regulation of this receptor makes the brain more sensitive to migraine triggers. This undercuts the effectiveness of both preventive medicines and behavioral therapy such as biofeedback and relaxation, and leads to an increased frequency and severity of headaches. **Preventing Analgesic Rebound**: **Plan your analgesic strategy.** It is a fact that analgesics and abortives often work best when taken early, before a headache becomes severe. For infrequent headaches, your doctor may advise you to take analgesics as soon as possible. Unfortunately, that advice can pose a problem for people with frequent headaches, easing the slide into analgesic rebound. If your most effective abortive should be used no more than twice a week, you need to develop a strategy to help you decide when to use it. Your strategy may rest on your need to function, so an important family activity, holiday, or work event may signal the days on which you decide to medicate early and aggressively. However, you must also decide in advance that you will maintain medication limits. If necessary, you may need to ride through some headaches without the benefit of an effective analgesic in order to avoid the slippery slope into rebound, in the interests of long-term headache control."

The Female Challenge: Managing medication use can be even more complex for women that are juggling migraines associated with menses as well as those triggered by other factors and occurring at other times of the month. Sometimes hormone manipulation is tried, but that comes

with its own set of risks of hormonal related side effects: cyst production, mood alterations, family history of reproductive cancers, menstrual symptoms, etc.

Old rooted **mythology around migraines and women** still prevails

Myth 1: *"Not tonight, dear, I have a headache"* We can still hear this old phrase from comedians and others suggesting that women use "migraine" or "headache" as an excuse to avoid sexual or other activities. However, it's more likely an attempt to avoid a migraine trigger than intimacy, since any physical exertion can exacerbate a migraine.

Myth 2: *Migraines are "all in your head"* Historically, diseases that were poorly understood were dismissed as being psychological or "in your head." Add to that, the fact that headaches are much more common in women than in men and the tendency of society to value and pay more attention to men and their problems, one can see how headache disorders and their victims have not earned the respect they deserve. Recent scientific advances in understanding the neurobiochemical causes of headache and the increasing change in attitudes towards women's issues have helped, but society still has a ways to go in conquering its unconscious bias against taking women's health problems as seriously as those of men.

Myth 3: *Migraine is just part of "PMS"*. Again this simply reflects the historical medical ignorance and tendency to minimize the seriousness of this condition. Even though we now understand that there is a relationship between migraine and decreasing estrogen levels before the menstrual period, it is still quite complex and warrants further study.

Migraine sufferers may be more prone to anxiety and depression. The reasons are complex and related problems need to be treated separately and as part of a bigger picture.

All chronic medical conditions, that can be managed but have no cure, carry with them the same frustrations and sense of loss that migraines do. One needs to be realistic and educated about the possibilities in order to intelligently plan and handle the challenge.

3. Ayurvedic Assessment and Ayurvedic-based Yoga Recommendations

I've already referred to the ways in which I assessed and worked with the case studies' doshas but following is some more discussion of the Ayurvedic approach.

Ayurveda calls the principle of biological intelligence that controls nervous system and brain activity ***Vata***. Headaches, being primarily but not exclusively a nervous system disorder, are therefore seen by Ayurveda as an imbalance in Vata, so the Ayurvedic approach would be aimed at restoring balance to nervous system activity. This approach would include:

Diet of Vata balancing foods and avoiding Vata aggravating foods while still taking into consideration the primary dosha. As far as diet guidelines, I recommend the cookbook, *The Ayurvedic Cookbook by Amadea Morningstar*[7] , for a basic practical understanding of Ayurvedic diet and for clients that are motivated to cook for themselves.

Cleansing the body of toxins and impurities -Toxin accumulation in brain tissue, from hard-to digest foods, poor digestion, elimination and metabolism and mental and physical stress, can aggravate and sensitize those tissues to pain. This can also obstruct channels of circulation and elimination which prevent nutrients from nourishing nerve tissues and waste from being eliminated. Ayurvedic cleansing aimed at drawing out the impurities that imbalance Vata, can include Ayurveda massage, herbalized oil application, heat treatments and herbal enema.The oil and herbs used after cleansing contain powerful anti-oxidants and free radical scavengers to help nourish tissues and hasten repair.

Proper Lifestyle and Daily Routine. As noted earlier, Ayurveda also understands that when we eat, sleep and exercise in constantly fluctuating and disturbing patterns, the body loses its natural balancing cycles and cannot cleanse or heal itself as effectively. Therefore regularity in our daily routine can be extremely important for reducing headache symptoms.

In Oriental and Ayurvedic bodywork models, headaches are often seen as caused by problems elsewhere in the body, as demonstrated in the diagram in Appendix D.

Ayurvedic-BasedYoga Recommendations

As we aim treatment at the dosha out of balance rather than at the person's constitutional type, the focus will be on restoring synchronicity with the body's natural rhythms, as Vata disorders require. Keeping this in mind though, we of course tailor to each doshic type by emphasizing some asanas more than others, doing them in a manner that reduces their dosha, such as ending a physical practice for Pitta with cooling asanas to compensate for any excess heat created.

In David Frawley's book, *Yoga and Ayurveda*, he discusses the practice of Pratyahara; the right management of mind and senses[8] to minimize the amount of toxic information we allow into our being. Mental disease is connected to the intake of unwholesome impressions and likewise pratyahara is helpful in understanding and treating nervous system disorders, especially those that arise through hyperactivity. We know this in our modern world as "garbage in, garbage out".

There are certain asanas that are generally beneficial for all headache sufferers regardless of their dosha; Viparita Karani, (inverted stick pose with legs up against the wall), Salamba Sarvangasana, for those able to do (supported shoulder stand) and Savasana. Others are listed under the section, General Recommendations.

The following asana recommendations follow David Frawley's guidelines and Mukunda Stiles' teachings from the Structural Yoga Therapy trainings, for different doshic types but the particularities of the individual are of course more important than their doshic type.

For **Vata**; (as in case study 2) Think calm, steady, slow, grounding, strengthening and consistent. For this dosha it's important to gradually warm up without hurrying into practice, using gentle, gradual flowing movements as used in breath initiated vinyasas. More important than even specific asana practice is the crucial need to create an internal and external harmonious environment through daily conscious, calm action.

To keep the spinal column supple, all spinal range of motion poses, such as lying spinal/abdominal twists are recommended, mindful to make sure breath is full; Moderate, gentle, slow backbends, i.e. cobra, locust, slow sun salutations; Forward bends providing there are not back issues that make it prohibitive, i.e. head to knee; Standing asanas that promote strength, stability, calm, and develop stillness and balance, ie. Vrksasana (Tree pose) as well as Trikonasana (Triangle), but without rotating neck upward, unless client is easily able without strain, and Virabhadrasana (Warrior pose); Inverted poses such as Viparitakarani; Sitting poses all help to create calm and groundedness. Vatas should end practice with a long, comfortable Savasana (Corpse pose).

For recommendations for **Pitta** see case study #1. In general pittas need a challenging practice ending with cooling, relaxing asanas to compensate for heat created during strong practice of cobra, boat, shoulder stand, spinal twists, forward bends, etc. Caution them to elongate back of neck in extension, to avoid compression of cervical vertebrae. My experience in working with Pittas is that they can be very self-directed and perceptive, so I can usually follow their lead,

especially if I'm asking the right questions to help them find their own answers. Frequently, I find myself reminding them that they don't have to constantly prove themselves in their actions. They can trust in their own integrity and relax.

Kaphas do well with asanas especially aimed at opening the chest as well as those that open the front of the body and bring suppleness to the spine, as in all backbends, again with caution to not hyperextend the neck. They need to challenge themselves with strong exertion towards a sense of accomplishment. Virabhadrasana can be effective. My experience, though, has mostly been with unhealthy or overweight Kapha types where the need was to work with them, gradually and carefully, lest they get stuck, discouraged and resist all together. I try to find something they enjoy doing first and expand it from there. Sometimes starting out with simple movements that just get them enjoying moving. If they're able, inversions are helpful as well as poses that stimulate digestion and open the lungs. With persistence and patience you can work up to satisfying sun salutations for most Kapha clients. They should end practice feeling sharp and invigorated. Mostly, I have found it helpful to remind them to see their own beauty and self-worth and inspire them to keep moving forward.

4. Common Body Readings/Findings

As previously mentioned in Section 2a, when "headache muscles" are in a chronically foreshortened state in tension type headache sufferers, one may observe a similar posture: Rounded (internally rotated) shoulders, exaggerated thoracic (kyphotic) curve, with a tendency to hold the head forward.

Muscular imbalances usually associated with this posture would be:
Weak trapezius (middle, lower, and possibly upper), lattissimus dorsi, and thoracic erectors spinae and tight pectorals, scalenes, serratus anterior, rectus abdominus, upper trapezius and SCM.

A headache sufferer may present with any number of body readings because the imbalances can trickle up through neural or myofascial connections as can happen with ignored hip and low back pain eventually contributing to headaches.

There are no true common body readings for migraine sufferers because it is more an issue of biochemistry than structure. However, as previously noted there are more often than not, musculoskeletal issues such as cervical syndromes with tight and weak trapezius, suboccipitals, scalenes and other musculature attaching to the head. They are among the many common and varied factors that contribute to the complex and multiple combinations involved in migraine. Family history, hormones, allergies, sleep patterns and problems, diet, stress, prior injuries, TMJ and dental history, and lifestyle issues are all necessary to cover in a consultation, in order to get a complete and accurate picture.

5. Contraindicated – Modify or Eliminate

Common Triggers [18,19](The chart below has been expanded from the original)

The science linking triggers to migraine is not yet clearly established. Nonetheless, doctors and their patients commonly report that they have migraine triggers and avoiding them has proved very beneficial for the majority of patients. Neurologist, David Buchholz of John Hopkins University takes headache patients off drugs and onto a rigorous diet plan, avoiding many foods. Some otherwise healthy foods, such as soy products, citrus and onions are surprising culprits, according to Dr. Buchholz[18]. "When you process the protein in soy, you liberalize MSG", Buchholz says. So products such as miso or veggie burgers made of hydrolyzed vegetable

protein can affect some people adversely over time. Onions, citrus, bananas, nuts and especially aged cheeses, all contain tyramine, a common trigger.

It's a matter of keeping your trigger level below your personal threshold.

Categories	Triggers	Examples
Dietary	Skipping meals/fasting Food Items, esp. those containing MSG (monosodium glutamate) which can be disguised as maltodextrin or hydrolyzed vegetable protein; caffeine; tyramine; sulfites; nitrates; chocolate; vinegar; alcohol; nuts; cheese; processed (aged, canned, cured, fermented, marinated, smoked, tenderized, preserved, pickled) meats and fish; yeast; aspartame	MSG in restaurant, processed and fast food, sauces, Salty or low fat Snacks, veggie burgers, Soy products- Miso, Tempeh Coffee,Tea, Chocolate, Cola Lunch meats; hot dogs, etc. w/nitrates Aged cheese, onions, bananas, Nuts Alcohol/red wine, vinegar, Bread, yeast baked goods Citrus fruits, Dried fruit, raspberries, avocados Pickled, fermented, marinated and fried foods Very cold foods, ice cream, yogurt
	Medications	Nitroglycerine
Chronobiology	Change in sleep patterns	Napping Too little or too much sleep
Environmental	Weather factors, air pressure changes	Extreme heat, cold, high humidity, storms, High altitude, air plane rides
	Bright lights	Office lighting Flashing lights or screens, sunlight
	Odors/pollution/chemicals	Smog, second hand smoke, perfumes, chemicals, cleansers loud irritating noise, Motion sickness
Hormonal	Estrogen level changes (rapid fluctuations in estrogen levels)	Menstruation Hormone replacement therapies Birth control pills Menopause or Perimenopause
Stress	Work	Unrealistic timelines Performance pressure
	Home	Financial issues
	Family	Job changes, Moving Childbirth , Marriage, Death/loss
Stress Letdown	Discontinuation of work	Weekends or Vacations Ending a project or stressful task (such as a presentation)
Physical	Injuries	Marathon running
	Over-exertion	Exercising when out of shape Exercising in heat

Contraindicated and Guidelines in Asana practice:

1. While asanas involving cervical extension are necessary to maintain proper nervous function, watch for hyperextension of the neck to avoid risk of cervical compression. A common tendency, requiring correction, is that of leading with the head instead of the core and chest, during poses such as Cat.

2. Asanas such as camel and fish that encourage hyperextension of neck require modification or are best avoided.
3. Proper alignment is essential
4. Release any muscle tension in head or face during asana
5. Headstands are better avoided except for advanced practitioners, because of the likelihood that they will do it improperly and risk cervical compression
6. Caution with moving too quickly through transitions and level changes, as in coming out of Uttanasana (Intensive Forward Bend) to avoid aggravating contributing factors such as blood pressure or spinal issues,
7. Low back pain may accompany headache symptoms and therefore caution is to be executed with all forward bends
8. Generally, Inverted poses are not well tolerated during headache pain but gentle inversions can be very helpful for maintenance, when not in pain
9. Avoid building up too much heat and too quickly. Here as in level changes we must be aware of any blood pressure issues, low or high.

6. General recommendations

NOTE: Because of the multiple variables that contribute to people suffering from the same condition, I am not professing that we can have a set prescription to treat all individuals with the same symptoms but the following has proven helpful to a significant majority and is based on the common denominators in most cases.

6.a. Stage I: Therapeutic – Free from Pain

Intake/Consultation: As for any condition, but particularly for headaches, **the initial intake and assessment must be very thorough**. I explore all possible contributing factors from the individual's internal and external environments when discussing their situation and history with them. We can think of illness as a deviation from the homeostasis (state of harmonious equilibrium) in the organism. Therefore we can ask; "How are this person's internal systems interacting with each other and with their external system(s)". Often with headache sufferers there is an overwhelm response when several systems are overloaded. One way to chart this is to use the body's various systems to begin your exploration while keeping in mind the migraine triggers previously outlined. Investigate the following factors:

- Musculo-Skeletal: Postural holding and movement patterns; Ergonomics; Cervical syndromes;TMJ/jaw clenching; Physical injury; Surgeries; Exercise habits
- Nervous: Brain chemistry; Stress; Life pressures, changes and loss; Sleep patterns and relaxation practices; Medications; Surgeries
- Respiratory: Environmental Allergens; Air quality; Chemicals; Breathing patterns
- Digestion: Diet; quality and eating patterns; Toxicity; Efficiency
- Endocrine/Reproduction: Hormonal changes; i.e. Perimenopause, Menstrual cycle
- Immune/Lymphatic: Sinus Congestion; Viruses
- Urinary: Water intake
- Cardiovascular: Low or High Blood pressure; run Hot or Cold
- Check for vision or hearing problems

(Obviously, the more factors from different systems affected the more there is to address.)

Plan: I usually see a client weekly for at least 6 weeks during this initial phase of healing. The regularity of visits for a prolonged period facilitates the learning of new behaviors and the gradual release of old trauma and unhelpful patterns. It also allows us time to gather enough information to create a long-term strategy. We begin each visit by evaluating together: the progress; what's working or not; what are the next steps.

For headache sufferers, as in many chronic pain conditions, this stage may last for some time and/or they may come in and out of it. Hence the following recommendations may be helpful through all stages of healing and management.

The first 5 R's (Recommendations) This is the essential foundation

1. **RECORD** necessary information in a **Headache Journal** to notice patterns and connections. Even before your first appointment, you can ask the client to write down the history of their headache symptoms and come prepared with this information to the first visit. Include: onset, pain location, frequency, duration, and intensity; other medical history, personal habits; prescription and over-the-counter medications; past treatments and their outcome, and family history
2. **REGULATE** biorhythms and activity: **Sleep, Drink water, Exercise and Relax** enough and regularly, such as go to sleep and wake up at the same time every day.
3. **RID Diet** and environment of all migraine **triggers**, such as processed foods, as much as possible (consult migraine trigger chart, p.23) If diet is a probable contributing factor, a modified cleansing fast and rotation diet with journaling is recommended. As noted in Bill's case study on p.14, this will help identify triggers.
4. **REALISTIC Expectations** There may be no cure for migraines but they can be wisely managed. For example, take medication at the earliest noticeable onset of a headache. Many clients will be wary of taking too much medication but at this stage it may be necessary. For long-term management, analgesic strategies are needed so as not to overmedicate and to avoid analgesic rebound.
5. **RELAXATION**- regular practice

Natural Simple First Aid includes resting, using icepacks (on the face, head or neck) or heat packs elsewhere, pressure on trigger points, relaxation techniques, sleeping, adjusting the lighting in a room, and reducing noise.

Medications Most clients will require at least some symptomatic medication, especially with migraines, but our work can at least help them to be less dependent on pharmaceutical intervention**.**

- **Over the counter pain relievers-**such as ibuprofen (advil), naxoproxin (alleve), etc.
- **Abortive (acute) medicines** are taken at the first sign of a migraine to stop the headache before it gets severe. They reduce swelling of the blood vessels and inhibit the release of substances from nerve endings that add to the symptoms. A class of medications called **"triptans**" like Imitrex, are effective and commonly prescribed.

Other Acute Remedies

For some, an enema can be a helpful first aid measure.
Oxygen Therapy has worked for some headache sufferers especially if administered at the early beginning of onset.
There is some questionable evidence that intranasal lidocaine can provide some limited symptomatic relief of migraine.

Natural Supplements

L-Theanine is an amino acid (found in green tea) that is currently being used with great success in relieving stress and pain related to; chronic tension, fibromyalgia, repetitive stress injuries and strain, insomnia and many other conditions. I suspect it could be very helpful in cases of Pitta imbalance. It works on increasing alpha waves in the brain and is getting more attention in the medical literature.

Herbal support (also see Appendix B)

Butterbur (Petadolex); has been found to be very helpful for many as an acute and preventive herbal remedy and I have personally found it to be the most effective herbal recommendation.

Feverfew has some fans as well.

Ginger for its anti-inflammatory action and effectiveness in reducing nausea

Sage leaf tea (*Salvia officinalis*) can offer relief and help prevent future headaches

Tinctures of skullcap (*Scutellaria lateriflora*) and St. Joan's/John's wort (*Hypericum perforatum*) ease pain and relieve muscle spasms. Use 5-20 drops of skullcap and a dropperful of St.J's at the very first inkling of a headache. Repeat the doses every five minutes until pain free. Skullcap can be quite sedative, especially in large doses.

Aromatherapy is occasionally helpful (see Appendix B under botanicals)

See Appendix B and C for more natural and folk remedies for relief

Cervicogenic component; If we identify this as a factor, then I direct treatment to releasing soft tissue in the neck. If that is not your expertise then you can refer your client to a physical therapist or comparable body-worker who is experienced in manual medicine and will use joint mobilization, trigger point compression, stretching, and soft tissue manipulation. Headache sufferers can also learn specific techniques that they can utilize at the onset of a headache to reduce their pain.

Lenore's cervical re-traction with resistance exercises (neutral and bilaterally)
I have developed a **bodywork** technique through years of working with clients with various cervical syndromes. It is explained in Appendix A.

A **self-care movement,** derived from this technique, can be taught that people can do even at their desks.

Inhaling, Expand shoulders up towards head, abducting scapulae

Exhaling, retract (glide back) cervical spine with chin towards the throat and neck in self-traction while depressing and slightly adducting scapulae (retracting)

Inhale back to natural neutral position

Exhale fully releasing

This same concept is carried through at different angles of movement such as lateral flexion, until all range of motion is covered.

(For risk of potential strain, I do not recommend, the often prescribed, using your hand at your temple to bring the ear towards the shoulder unilaterally.) One can safely create resistance with hands or with the head leaning against the bed, in supine position, during cervical rotation and lateral flexions. The client is free to explore micro-movements while rotating neck in various positions.

Note: **The cervical glide** (gliding the chin horizontally forward upon inhaling and drawing the chin back towards the throat, exhaling) is often ignored in typical neck exercises and yet is essential, in my opinion, to restoring healthy posture and releasing chronic holding patterns. This is even more effective when simultaneously depressing and adducting scapulae.

Asanas

In many sessions, even before the more extensive bodywork or therapeutic yoga instruction, I begin with simple breath-work like wave breathing evolving into and mirrored by wave movement through the outer body as in
Pelvic tilt and small, gentle Spinal extension/flexion movements coordinated with the **Wave breathing** and imagery.

Postural re-training: Everyday postures of standing (**Tadasana**), sitting, lying and walking are all opportunities to practice awareness and deep relaxation and can be considered important asana practice.(see more on this in stage 2)

Thoracic/Cervical Extensions as described in case study on p.12 is easy to incorporate into daily activities and helpful with countering forward flexed postures.

In addition to taking the neck through its full range of motion as in the **cervical exercises** previously mentioned, I offer my own variation of shoulder movements:
Shoulder Journey -I find it helpful for clients to explore their shoulders' full range of motion from a side lying position. I do this with them during bodywork, stopping at every point of resistance to explore soft tissue restriction, before moving on. They continue in their own personal practice, slowly and gently, discovering the most relaxed and efficient way to move through **shoulder flexion, rotation and extension**.

These cervical, spinal and shoulder movements are most beneficial, in this initial stage, when practiced daily.

Joint Freeing Series; Also, in this early stage I often use some part or variation of Mukunda Stiles' JFS, as a diagnostic and therapeutic tool. The emphasis is on gentle flowing movements coordinated with breathing for its effect on stress release and joint lubrication.

In Gary Kraftsow's book, *Yoga for Wellness*, he describes three consecutive principles of therapeutic movement:

1. Simple Movement
2. Stabilize one body part while moving another part from a fixed base
3. Opposition

Then one can move on to increasing strength in supporting structures. Our goal, of course, is to increasingly work towards true and full functional integration with the whole body. This principle will carry through all stages of care.

Bridge vinyasa; Because many clients' headaches are related to neck, shoulder, back, hip or nervous system conditions, I often recommend what physical therapists refer to as lumbar stabilization exercises, though I have clients gently build up to it. Yoga therapists may consider these **variations of Setubandhasana**.
The vinyasa I use most, starts with full wave breathing into pelvic tilts and gentle spinal extension/flexion into bridge, articulating the descent and ascent and finally into holding a modified bridge while moving extremities. This is similar to one Mukunda Stiles has taught.

In his book, Gary Kraftsow uses similar movements he calls **Dvipada Pitham** adaptations.[9] Basically the client is stabilized in Bridge pose while taking shoulder into flexion upon inhale and neck into rotation upon exhale, alternating bilaterally. A simpler version is done with hips on floor in simple supine position. There are many variations and vinyasas you can create, depending on the client's needs.

Jathara Pavratanasana; I frequently recommend variations on **Abdominal/spinal twist** as this is beneficial for relieving stress, liberating the spine and balancing most conditions of the nervous system. One variation is a vinyasa (continuous flow) with both knees bent; they gently fall to one side, on the exhale, as the arms and neck turn to the other side and then inhale to return to center and exhale to other side.

The following poses have helped some at the early onset of a **tension** type headache. See referenced article from Yoga journal for more information[10]:

Supta Baddha Konasana (Supine Bound Angle Pose) In repose, passively opening the chest and releasing tension from the neck while elongated with knees supported, legs straight or hips externally rotated.

The next three poses are supported and modified to be most helpful. Since any pose with the head lower than the upper body is questionable during headache pain, be careful that it doesn't exacerbate the symptoms. They are usually fine for maintenance.

Supported Balasana (Child's Pose) releasing entire full spine, you will most likely need to use bolsters, pillows, blankets to cushion feet, buttocks and head. Some variations use the seat of a chair to rest head and arms or have client seated in a chair with head resting on a cushioned table top; whatever is needed so client feels fully supported with no strain
Supported Forward Bend to release neck by resting forehead on chair seat propped up with blankets.
Supported Ardha Uttanasana (Half Forward Bend): very gentle spinal extension with torso resting on table stacked with blankets so you form a right angle at your hips

If headache pain continues, try:

- **Viparita Karani (Legs up the Wall Pose)** not advisable for migraine if increases pain. Legs up against the wall and low back supported, may be helpful to put gentle pressure on eyes and head
- or skip to **Supported Savasana** with eyes covered and head, neck and knees supported. I usually end my sessions with this pose, guiding the client with appropriate breathwork and imagery. I find images using water, particularly the rise and fall of ocean waves very relaxing for my clients.

Some practices include affirmations with gentle movement and breathing. McCord and Van Houten, proponents of this approach through Ananda yoga, have developed a routine that they outline in their book, *Yoga Therapy for Headache Relief.*[11]

Breathing re-training exercises

- **Diaphragmatic, abdominal and/or inter-costal breathing**[12] is helpful to introduce for most clients for multiple reasons. Firstly, it will stimulate a relaxation/parasympathetic reflex and as headaches are often related to an autonomic nervous system imbalance, this retraining is basic to managing them. Also, typically, you may find many people in chronic pain will be shallow chest breathers and need to bring their breath lower into their abdomen.
- **Full wave and Ujjaye breathing** in its several variations can be taught separately and then incorporated into movement and asana practices that gradually can become more involved as health improves. (You can consult Mukunda Stiles' Structural Yoga Therapy book for a concise discussion on Yogic breathing.)

Most importantly, relaxed breathing is the beginning, middle and end vehicle for restoring and maintaining a healing internal environment. This is not only true physiologically but ultimately it can provide the doorway to our deepest experience of self. (I recall my teacher, Prem Rawat, often discussing "… when that breath comes into you, that's Life touching you, one breath at a time.")

6.b. Stage II: Stabilize the Situation

Aside from all asanas listed in this paper, I create a personalized routine based on all the information gathered through consultation, assessment and testing. Generally, I integrate my experience in dance and movement therapy, mind-body work, physical therapy, and Structural Yoga Therapy training to create a movement sequence that will inspire and challenge the client in a unique way.
This is the stage where we keep tweaking the exercises and practices.

Goals When working with headache sufferers, remember there will be days when the client will not be able to do much. This unpredictability creates a frustrating, physical and emotional roller

coaster. The client may feel ripped off because so much of her time is stolen by this silent thief called headache. Coming to terms with these imposed limitations, accepting what is possible, staying inspired through the down times and taking full advantage of the better times is an even more important goal than compliance with recommended practices.

Rhythm The importance of living in synch with the body's and nature's rhythms is getting more attention from researchers in physics and medicine. Dr. Dardick's book*, Making Waves,* in which he explores the effect of harmonizing activity with circadian, ultradian and lunar rhythms on overall health has gained increasing acceptance.[2] In yogic philosophy, this has always been an honored principle and as yoga therapists we can confidently share with clients how experts from different cultures, times and disciplines have come to a similar appreciation. (Another related and possibly helpful technique borrowed from Dr. Dardick's work involves contrasting temperature extremes such as alternating between hot and cold water in the shower.) It is interesting to note how many migraine triggers are related to a disruption in the body's natural rhythm. For headache sufferers, learning to balance exertion with quiet time, dark and light exposure and to respect their body's natural rhythmic needs, can be very helpful in maintaining an optimal internal and external environment for healing.

Lifestyle Changes[19] (modified from ACHE website)

Understanding the important role lifestyle plays in preventing the frequency and severity of headaches is crucial at this stage. Migraine is so unpredictable that something simple like a change in normal routine can lead to a severe attack. Though it's unrealistic to expect everyone to completely change a certain life style, some things are relatively easy and essential to do. Advise clients to:

- Maintain regular sleep patterns. Go to sleep and wake up at the same time each day.
- Exercise regularly
- Eat healthy regular meals, do not skip meals, and eat a good, healthy breakfast.
- Reduce stress. Limit stress by avoiding conflicts and resolving disputes calmly. Some people find it helpful to take a daily "stress break."
- Schedule a daily, regular relaxation period that includes relaxation strategies such as yoga and meditation
- **Avoiding known triggers** (see table on Common Triggers in section 5) such as caffeine, MSG, processed and other foods. If you add trigger foods back in your diet, do so one at a time
- Keep a headache diary
- Avoid cigarette smoke
- If there is a significant hormonal component, find a doctor that is experienced in managing these factors.
- Maintain the medication treatment plan designed by you and your physician. Early intervention may help prevent the migraine from progressing into a severe, disabling attack.
- Joining a support group may be helpful.
- Plan ahead-
- For travel: bring all necessary medications, stay hydrated during plane travel, keep to regular eating/sleeping patterns as much as possible
- For work: keep medication with you; reduce exposure to bright fluorescent lights, computer monitors; Instead of coffee breaks-take regular stretch breaks from your desk; find a quiet place to have alone quiet time

Postural re-training

Increasing mind-body awareness during daily habitual postural patterns is fundamental, so work with standing posture, ***Tadasana(Mountain Pose)***, with a focus on full relaxed breathing, promoting spaciousness within all structures, especially abdomen, neutral spinal curves and

fluid shoulders- even while engaging posterior shoulder muscles to hold them back and down. Work towards aligning ear, shoulder, hip and knee while radiating out from the center focus in the abdominal-pelvic area. Play with images of the breath and water or sand washing in and spilling out of body.

From there Practice ***mindful walking*** using principles from Tadasana. Review how healthy walking is initiated from the hip flexors, carried by the large leg muscles and indulged throughout the feet. With relaxed shoulders and neck, assisted by full yogic breathing, the torso gets to enjoy a gentle massaging ride as we walk.

Review balanced and ***ergonomically correct sitting*** postures especially if client spends significant time at a computer or desk. Joints should be at 90 degrees except wrists at a relaxed 180°. Here the weight is in front of the ischial tuberosities (sit bones) paralleling the points of the feet in standing but the lumbar curve is more pronounced than in standing. Often their work station or habits need closer analysis.

More ASANA Practice:

Continue as in first stage, only now you may be able to go deeper with Spinal extension/flexion and rotation movements while opening the front body
Tweak whatever JFS are appropriate and Try:

- **Cat vinyasa** variations
- **Bridge vinyasa** with slow articulation through the spine;
- **Gentle Camel** in a chair without hyper-extending neck
- **Modified Cobra** if client is capable and… again
- **Supine Abdominal Twist** modify with appropriate variations

Still at this stage I often find gentle vinyasa style approach works best for many, regardless of dosha, but again every person and situation is different and their needs are changing.

Stretch breaks at work that you prescribe and recommend they practice at regular intervals. For some this is the only way they can fit in healthy movement that counters their daily activities. Buying software that reminds them to stretch can be helpful option.[15]
Thoracic/Cervical extensions, for countering repetitive forward-flexed movement patterns are good exercises to continue at work.

Preventing tension headaches- Some more general asana recommendations:

Gomukhasana: (Shoulder stretch) to open and help range of motion in shoulders and correct the round -shouldered, forward head posture. This is another good pose to recommend for a break from working at the computer. I find most clients do best using a belt or strap and advise them to breathe and gently keep the spine extended, instead of leaning to compensate for tightness.

Hare Pose: variation on child pose to fully release and stretch neck and spine- While holding onto heels, bring forehead close to knees and crown of head on the floor; lift buttocks and stretch arms straight. A gentler version can be done at the desk with head down, resting torso on thighs while holding the chair's rear legs in dynamic resistance to stretching forward.

If not in pain one can try inverted poses such as:
Adho Mukha Svanasana (Downward Dog) modified with head resting on support and hips supported with belt at top of thighs.

(Generally headache sufferers find inverted poses uncomfortable during even a mild headache.)

If I'm doing my job right, many clients at this stage will have learned enough about their own anatomy and needs to create their own variations on exercises.

Pranayama and breath training: Even though I integrate breath-work into all the work I do with clients, for many I find it helpful to teach them particular techniques to practice at home. Richard Miller, Ph.D. believes that headache sufferers often have upper respiratory, shallow breathing and may be unconsciously hyperventilating. He feels that pranayama (a type of breath control used in yoga practice) can be helpful in reducing headache as long as it is adapted to the individual. [16]

Yogic breathing exercises can calm the mind, reduce stress and alleviate anxiety. **Dirga Pranayama , Ujjayi Pranayama (wave breath, controlled, with sound) and Nadi Sodhana Pranayama (alternate nostril breathing)** are examples of Pranayamas that can be modified for clients with headaches.

With most clients we practice simple full wave breathing, often experimenting with a pause at the end of the inhale and again a bit longer at end of the exhale. This is the **4 (or 5) part breath** as I learned it from Mukunda Stiles. From here we can explore bringing attention to the Pranas, which can open up to a deeper, richer experience and understanding.

An interesting explanation of the physiological response to relaxation training and its effect on headaches, can be found in Appendix G, as presented by Dr. Gay Lipchik, St. Vincent Rehab. Assoc, PA.

Russian respiratory professor, Dr. Buteyko[17] developed a breathing method that has been beneficial for many health conditions, ranging from sleep apnea to asthma to headaches and is widely used in Australia and the UK. The theory, roughly boiled down, is that people, unlike other animals, have a tendency to over-breathe, setting up a complex pathological biochemical response. Unaccustomed to CO^2 levels in the lungs necessary for normal functioning, the incorrectly perceived need for "deep breathing" can actually result in deoxygenating the tissues. **The Buteyko Breathing Method** retrains the individual to reduce the depth of breathing as they become more keenly aware of their breathing patterns. This is a curious observation in light of our culture's insistence of equating relaxation with deep breathing. One technique of the method involves the practice of sustaining the state of being fully exhaled for as long as one can before taking your next inhale. This is referred to as the control pause and prolonging it is the maximum pause.

Interestingly enough the breathing exercise recommended to one of my headache clients, Melanie, by Yoga therapist, Leslie Kaminoff[18], though less involved and gentler, and probably evolved from pranayama techniques, bore a striking resemblance to this part of Buteyko's method. Yet, another example of ancient yoga practices paralleling modern scientific exploration. Funny, how people in different places and times come to similar ideas!

Preventive (prophylactic) medicines such as beta-blockers, anti-seizure medications, or tricyclic anti-depressants are taken every day for those whose headaches are frequent enough to warrant this choice. Some doctors prefer to prescribe preventive medications such as blood pressure drugs, versus painkillers, that seem to stop some patients' headaches from escalating.

Natural Hormone Therapy (increasing estrogen/progesterone levels) has seen some success with migraines related to a woman's cycle, though finding just the right dosage at just the right times is challenging and ever-changing. A few physicians use a **progressive allergy therapy** that uses the patient's own hormones to test for allergic response and then find the appropriate dosage for desensitization.

Nutritional Support: A competent physician/nutritionist can advise your client on supplemental magnesium/calcium; fish oils; flaxseed; soy, etc. and adjusting their diet, such as increasing dark leafy greens.

For an objective report on the efficacy of alternative and non-pharmacological therapies, see Appendix B. These treatments include biofeedback, relaxation therapy, hypnosis, meditation, physical manipulation (osteopathic) cognitive behavioral training, nutritional and herbal support. I've also included other herbal recommendations there.

6.c. Stage III: Maintenance

For true and long term healing, it may be appropriate to address underlying **emotional** issues. These issues will probably have already come up in the work you are doing together but if needed, the client may wish to seek specific professional help for further understanding and skills.

Re-evaluate with SYT exams and other assessment tools you may use, to discover progress or changes. Sometimes new findings surface as the primary needs have been addressed, providing an opportunity to focus on underlying imbalances and learning in deeper, subtler ways. More challenging practices, asanas and vinyasas can be added now if needed.

One practical, important consideration is that some clients, especially as they start to feel better, may not have the time, ability or inclination to have an extensive daily asana practice. In these situations, I've found it best to **meet their needs realistically** and find ways they can fit healthy movement and practices throughout their day. There are many opportunities to explore, such as short breaks from the computer, conscious walking practices, two minute movements to squeeze in anytime; while waiting or during the dishes, etc.

Anything that has been effective until now needs to continue, with some tweaking here and there; maybe indefinitely, maybe until there's a shift in biochemistry, such as menopause, maybe until stressful situations stabilize. There is no way to know but time may be merciful and the seemingly endless challenge will end. In either case they will have learned so much about what is necessary to honor their internal needs and practice positive healthy behaviors. Just as we need to stay on the trail to safely and truly enjoy the forest, at this stage, we need to master the art of finding freedom within discipline.

Conclusion

Even in the case of migraines, Structural Yoga Therapy can help one cope with the impact this unpredictable, relentless disorder has on one's life. It can also help foster within the client, the discipline necessary to avoid triggers and potentially limit the frequency and severity of attacks. Most importantly, this work can help to bring about an essential state of acceptance and equilibrium, within which healing can occur. I've learned personally and professionally that the goal is making peace with whatever package we're presented with. We can help clients to accept that we may never have that "perfect" body we wish for but we can live the best life we can with what we do have. It is not through some fairy dust but through making effort everyday – that's the magic that makes it possible. Even more than our professional expertise in providing yoga instruction and treatment strategies, **clients need our empathy, humor and encouragement so they may have patience, and persevere.**

7. Questions and Answers from www.yogaforums.com

Questioner Posted: Fri Apr 26, 2002 9:34 pm Post subject:
A very dedicated yoga student, male, 40's, overweight, always gets terrible headaches while doing Bhujangasana, Salabhasana and Dhanurasana - the headaches become severe so quickly that he has to stop and rest, holding his head in pain. The headaches last for quite some time after he stops doing these poses. I've suggested that he extend the cervical spine, keeping it as long and neutral as possible (rather than stretching the head up & back), and that he back off to 50% of effort, but his headaches persist. Any explanations for why the extensions cause him such pain (are these brahmana poses too stimulating? are they elevating his blood pressure / intracranial pressure?), and any suggestions for alleviating his discomfort, would be very much appreciated. Thank you.

Blessings, H

Mukunda Posted: Fri Apr 26, 2002 9:39 pm Post subject:
DOES HE HAVE ELEVATED BLOOD PRESSURE? Taking any medications? Is his pitta elevated? Do you think he could be living a toxic lifestyle, diet? I would also highly recommend this student check in with his doctor as there may be something more seriously happening to him. All these can contribute to poor circulation next level of training for you is to be able to read pulses for analysis. If you want a jump on this order Dr. John Douillard's pulse course, $75 for 6 cassettes and booklet -- 303-442-1164 he is in Boulder, CO. and is my teacher of this method. He is author of Body, Mind and Sport also The 3 Season Diet both on Ayurveda

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Questioner Posted: Fri Apr 26, 2002 4:29 pm Post subject:
I have a student in her late forties with a c-6 neck injury, a disc; it gives her a great deal of pain and also causes headaches. She loves doing yoga but is limited in what she can do. There seems to be no rhyme or reason as to what causes the headaches. Are their asanas i can do with her that will improve the condition? Is there a way to lessen or eliminate the headaches? Thank you, Dean

Mukunda Posted: Fri Apr 26, 2002 4:35 pm Post subject:
Usually headaches are due to excess heat (pitta). Main remedy is improve diet, follow Ayurvedic guidelines for balancing pitta, be gentle in life and asana practice, increase time with gentle ujjaye pranayama direct energy to opening blood vessels in cranial cavity. Sometimes hands on healing like Reiki can work wonders.

Questioner Posted: Sat Apr 27, 2002 4:05 pm Post subject:
One of my students gets migraine headaches from food allergies, she thinks. She is doing muscle testing as well as food elimination diet. What can I as her yoga teacher offer her? What poses might bring relief for the headaches?

Mukunda Posted: Sat Apr 27, 2002 4:10 pm Post subject:
If she is accurate that the problem is from allergies, then I would suggest focusing on balancing vata from Ayurveda perspective. This is done by slow posture specific sequences coupled with coordinated ujjaye breathing. Also deep relaxation and restorative poses are the general program for her to do. For headaches I would recommend moving into and out of shoulder and neck flexing poses Vinyasa style, not holding poses. Some examples would be variations of bridge, cobra, cat poses. This creates a flushing effect upon the neck and brachial plexus I am working on a book entitled Ayurvedic Yoga Therapy that will have more details

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Questioner Posted: Mon Jul 14, 2003 5:41 pm Post subject: Pain after brain surgery
My supervisor had brain surgery a year ago. A 4X3 inch section of skull was removed and then secured with titanium screws after the surgery. She has been complaining of pain around the area of the skull that was operated on. This pain leads to headaches and neck aches in the upper vertebrae. My first inclination is to tell her to acknowledge and not to fight or get rid of the pain. Then become familiar with other physical responses that might be associated with trying to fight the pain such as tensed forehead or stiffening of the neck. This is just a start. Would you please recommend any other techniques? She is looking at yoga for help but has little experience in practicing yoga. Om Shanti-C

Mukunda Posted: Mon Jul 14, 2003 6:11 pm Post subject: Pain after brain surgery
All pain is rooted in vata imbalance though there may be other Ayurvedic doshic stressors on the surface as the acute symptoms. Vata is the biological source of prana, when it is balanced prana tends to increase. The major sign of more prana is peace and freedom from pain. So all techniques that restore relaxation, tone the parasympathetic nervous system, and heighten awareness of the subtle prana hidden within the body sensations and breath are to be encouraged. While relaxation and softening are good ideas, restorative poses with the head elevated, and gentle vinyasas done in coordination with the breath are better. Best is the method called yoga nidra and meditation specifically given to her. Yoga Nidra is a profound guided meditation going through the dimensions of self (koshas) it is best learned from a series of tapes available from Richard Miller on his website www.nondual.com

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In Reply to: Headaches After Yoga posted by Kira on March 05, 2001 at 18:18:10:
: Several of my students complain of splitting and long lasting headaches after their first couple of times doing yoga. I have responded with the cliche answer of, "those headaches are caused by the toxins that are being released from the intense stretching and squeezing of all your muscles, internal organs, etc." I realize that I have no idea what that really means. Can you provide me with a "better" (more scientific) answer
Thanks so much.

Posted by matt taylor (206.139.12.159) on March 06, 2001 at 11:15:19:
Dear Kira,
Great question and no easy answer. Appreciate your professional drive to be more than a technician spotting pat answers...that is what it will take to grow this wonderful profession. Enough soap box...
The following are all potential causes of headaches...the most common first, the more potentially serious but requiring screening last:
muscle tension in the cranio-facial complex (setting the jar, tongue thrust, visual strain etc corrected by awareness and verbal cuing from you) misalignment during asana... generally excessive backbend of the head on neck...have them keep the hairline "wide" or open, no crimping the hairline, esp backbends, and even forward bends if they keep looking up for direction or are thrusting with chin rather than heart first to go forward... produces entrapment of the lesser occipital nerve which will give a whopper of a HA.
Cervical compression...improper headstands...hopefully that isn't instructed in the first few classes until you and they are oriented and aware of their ability and properly developed the shoulder complex for inverted weight bearing.
High blood pressure...should be determined in the medical screening form they fill out prior to class ... if they have HTN (hypertension) HA is a big red flag you need to back down (not necessarily away, but slow down and tread carefully).
Brainstem and cranial masses (tumors),,,rarest but in 20 years I've had one patient who I picked up becuz of severe HA's with forward bends (not yoga related) and he was dead 6 weeks later...
Then as you mentioned there is the old toxins line...yes preach good hydration, but I'll put money on one of the first two above as the # 1 source. Proper yoga should create shtira and sukha...sweetness and calm ...HA's don't fall under that category.
hope that helps,
Matt

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19 Mantua Road | Mt. Royal, NJ 08061 | 856-423-0258

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9. APPENDIX

Appendix A

Lenore's Cervical/Cranial Release Technique ©1992)

I've developed these techniques after years of working with clients in chronic neck pain resulting from different degrees and kinds of trauma; cumulative mini traumas as in repetitive stress injuries, wear and tear in an imbalanced neuromuscular system, unlocked, unresolved emotional issues or substantial physical injury, etc. Since there are often concomitant cervical syndromes in headache sufferers as well as the fore-mentioned myofascial connection between the suboccipitals, eye movements and back musculature, I have found this work to be very effective along with other therapies. It is not possible for me to fully and accurately describe the procedures without demonstration but I will outline it somewhat. It combines trigger point therapy with manual traction, facilitated stretching and guided imagery. I recommend that only an experienced, highly skilled body-worker attempt it with their clients. Other therapists can still use some of the concepts and simply and gently palpate and hold tender spots along face, head and neck. If done with the proper (sattvic) focus and consciousness this can also be amazingly effective.

Client is lying supine on table with therapist seated at their head. Start with some guided breathing exercises and imagery to slow down the breath and invite deep relaxation as you would in Savasana. I often begin with full wave breathing, then gradually integrate gentle spinal movement and pelvic tilts, mirroring in response to the rise and fall of the breath and finally ease into the outer body quieting down, arriving at an increased awareness of only the subtle internal movement of the breath. During this time, the practitioner is observing the clients process, offering helpful images, while palpating, scanning to locate myofascial trigger points along all cervical paravertebral musculature, and holding special points of increased tension or energy along the face, head and neck.

Important holding points are at:

- the base of the occiput (especially at muscle attachments of; levator scapulae, upper traps, semispinalis capitis/cervicis, splenius capitus/cervicis, scalenes and the deeper layer of sub-occipitals)
- the temples
- the crown of the head
- along the upper trapezius, especially at points of tenderness, congestion, or tissue change
- along the lateral, posterior, anterior muscles of neck, (" " ")such as the scalenes and levator scapulae
- along the clavicle for trigger points of the pectorals and scalenes
- masseter muscle (by jaw)
- superior-medial points of the orbit, along the eyebrow ridge and in between the eyebrows (branches of the trigeminal nerve travel through this area especially at the foramen for the supra-orbital nerve/ vessels[15]**.** *I have found this to be the ***magic spot*** for many people)

Pressure can be applied to trigger points (areas of hyperactivity in myofascia) for up to one minute, about 5 slow breaths or until referred pain dissipates. Typically the procedure can be repeated about 2-3 times for each trigger point found. Notice where client reports the site of referred pain and ask them to breathe into and expand that area. Images of melting ice patches along a frozen river can be helpful.

Apply techniques for releasing temporo-mandibular jaw joint.

Body-workers can massage head, neck, upper trapezius and gently stretch area from basio-occiput to rhomboids while clearing congestion within myofascia. Instruct client to gently inhale in neutral position and then exhale as you take head and neck through gradual but full range of motion, one movement at a time while simultaneously applying gentle cervical traction (manual axial traction). First in neutral with slight flexion (5^0) as you instruct client to lengthen through the back of the neck, chin toward throat, gently leaning head and neck into table through your hands. Your hands are supporting their neck and your fingers are applying pressure to a trigger points along the sub-occipital muscles, semispinalis capitus, cervicis and/or upper trapezius. Apply pressure for a maximum of two breaths or 15 seconds while in traction.

Repeat procedure but this time in another position; exhaling to lateral flexion, then place in gentle traction while applying thumb pressure to trigger points along lateral cervical paravertebral musculature, including scalenes, one at a time. This is a much more vulnerable position and great caution must be taken so work even more gently here and for a shorter period of time with client offering less resistance, cautioning them to not strain.

You can work on trigger points along anterior scalenes and pectoralis with neck in neutral position or slightly extended off table in your hands. Experiment with releases in cervical rotation and extension as well.

Change angle of position so head is rotated slightly in the direction of the shoulder on the same side and back of one side of the neck is more exposed. Again with client offering some resistance, apply pressure to trigger points along levator scapulae and splenius capitus while holding neck in gentle traction as client retracts head and neck into your hands. Play around with slow rotations to find which positions/angles exposes trigger points and most effectively releases and stretches hypertonic soft tissue.
Repeat all on other side treating appropriate points.

End with guided savasana as in beginning while doing cranial work and then applying pressure to points along orbit (around medial aspect of eyebrows). Many clients will drift off at this point.

Appendix B

Alternative Therapies for Headache[19] (sections on yoga, massage, etc. deleted as they are covered in main body of paper)

By William Young, MD and Mary Paolone, RN

This article will review some of the commonly used alternative treatments, specifically pointing out if they have been studied for headache and if there is evidence supporting their use. Our objective is to offer headache sufferers an overview of the different therapies available and the potential advantages and disadvantages associated with each.

DIETARY THERAPIES

Vitamins and supplements

Several vitamins and other supplements have been shown to be helpful for headache management.

- Riboflavin (vitamin B2), at a dose of 400 mg/day, demonstrated effectiveness in 2 studies showing that it can reduce the frequency of headache attacks as well as the number of headache days. This vitamin also improves ATP production (the body's principal energy-storing molecule).
- Magnesium levels are decreased in the body's cells in migraine patients. Two studies using 500 mg/day of this supplement have reported efficacy in migraine prevention, while

another study reported no benefits. Magnesium's only noticeable side effect is diarrhea, and the intravenous form has shown possibilities in treating acute attacks.

- Coenzyme Q10 at 150 mg/day appears to be another beneficial preventive without any side effects. However, stronger studies are needed to prove the true efficacy of this supplement. (See article on coenzyme Q10 in this issue.)
- Hydroxycobalamin is a form of vitamin B12 and is known to be a nitric oxide scavenger. Nitric oxide has many roles in the body and is thought to be involved in producing headaches. One study has shown a 35% to 40% response rate when 1 mg of hydroxycobalamin is applied intranasally every day. This study also needs confirmation.
- Pyridoxine (vitamin B6) is used as supportive treatment for patients with histamine intolerance, which is believed to be involved in some cases of food- and wine-induced headaches. In these patients, a histamine-free diet is the treatment of choice. They should also avoid alcohol and diamine oxidase – blocking drugs. The recommended dose is 100-150 mg/day, as higher doses of this vitamin have proven toxic in some individuals. Moreover, pyridoxine can raise serotonin levels, possibly improving serotonin functioning, which is believed to be impaired in headache patients.
- With long-term use, S-adenosylmethionine (SAM-e) has shown possible benefits for migraine treatment in one preliminary clinical trial, possibly by affecting serotonin production.
- Vitamin A is not a treatment for migraine. In fact, overuse of this supplement has been linked to a condition known as pseudotumor cerebri, which can be associated with severe headaches and vision loss.

Vitamins and botanicals can be potentially harmful, especially when the dose is too high. The most clearly established toxic effects on the nervous system are those due to vitamin A, which leads to pseudotumor cerebri (high spinal fluid pressure and headache) and abnormally high calcium levels, and those due to vitamin B6 (pyridoxine), which can cause nerve damage. Since there could be other toxic effects of very high-dose vitamin treatments that are not yet known, judgment should be used before trying very high doses of vitamins, unless there is a well-established safety record. A balanced diet containing all the needed nutrients is always important.

Herbs and Botanicals (includes Aromatherapy)

The aim of treatment with herbs and botanicals is not only to treat the acute pain, but also to relax and balance the body to obtain longer lasting benefits. The most commonly used acute care therapies in this class are:

1. inhalation using herbs such as melissa, peppermint and chamomile;
2. massage with lavender, peppermint, anise, basil or eucalyptus;
3. warm baths with eucalyptus, wintergreen or peppermint
4. compresses of peppermint, ginger, marjoram and vinegar. Other related treatments include warm salt packs, herbal footbaths, icy footbaths, cold sitz baths, cold and then hot wrist baths, and tight headbands.

In one German study, the combination of *peppermint oil* and *eucalyptus oil* applied to the skin increased cognitive performance and had muscle-relaxing and mental-relaxing effects, but had little influence on pain sensation. A significant positive effect on pain was produced by inhaling a combination of *peppermint oil* and *ethanol*.

Feverfew (Tanacetum parthenium), also known as featherfew and bachelor's buttons, is native to southwestern Europe and has been used to treat disorders often controlled by aspirin. Studies show conflicting evidence for its effectiveness for headaches, and feverfew has been thought to contribute to a rebound headache pattern. This herbal should not be used with warfarin (a commonly used blood thinner), as it may increase bleeding times.

An extract of ***butterbur root*** **(petasites/Petadolex)** has been tested as a migraine preventive with successful results and virtually no side effects in two studies. The studies were done using a proprietary formulation that is not inexpensive and is not always easy to find.

No studies demonstrate the efficacy of *ginger* (Zingiber officinale) in headache, although two traditional Indian systems of medicine (Ayurverdic and Tibb) propose it as an acute care and preventive treatment option. Ginger has been shown to be a good anti-nausea treatment.

The bark of the stately *white willow tree* (Salix alba) has been used in China for centuries because of its ability to relieve pain and lower fever. Taken as tea or capsules, it has an active ingredient related to aspirin.

Passionflower, skullcap and hops are sometimes included in preparations for headache, but there are no clinical trials that show significant benefits.

Cannabis (marijuana) was a preferred migraine treatment from 1842 until 1942. The first evidence of its use goes back to 5000 BC, with the first documented case for headache seen in the year 300 BC. As a physician treating headache patients for a number of years, I have seen no one who has reported a sustained headache benefit from using marijuana. There have also been reports of marijuana being associated with increased headache. One study suggested that migraine sufferers usually develop tension-type headache after chronic use. The potential intoxicating effect, possible long-term harm with frequent use, and the social stigma associated with this herb are likely to restrict its medicinal use for headache conditions.

In pregnancy, we are not yet comfortable with using high doses of most vitamins, minerals or botanicals. The use of folate, however, is strongly urged for all pregnant women, and in fact is recommended for all women of child-bearing potential. We do feel comfortable with the use of oral magnesium in pregnant women, since blood levels do not rise above normal in persons who do not have kidney failure.

Physical Therapies

Acupressure (and Shiatsu) is an oriental-based finger-pressure massage targeting the acupuncture meridians, which are the body's 12 invisible energy channels in traditional Eastern medicine. Blockage of energy flow is believed to cause pain, and release of blocked energy will promote wellness.

Acupuncture is another oriental technique based on the flow of Qi, the life energy force. It is performed by the insertion of small needles into points along the meridians. Acupuncture mobilizes serotonin and norepinephrine, which block pain transmission and produce endorphins, the body's own natural narcotics. In general, proof of efficacy is conflicting and unconfirmed, although a recent study in the November 2002 issue of the journal *Headache* showed benefits of acupuncture similar to those of amitriptyline, a standard preventive medication. Many conventional physicians refrain from fully endorsing the use of acupuncture in migraine. However, it can be accepted as a supplemental therapy because there is clear individual variability in response and no evidence of harm.

Hydrotherapy is traditionally used as an adjunct treatment to massage. It employs hot packs and ice packs, saunas, steam baths, and whirlpools.

Mental Therapies

Biofeedback is the most successful and well-studied mental approach in migraine management. Younger patients and children show many positive results from this technique. With biofeedback, patients are taught how to control certain physical processes that may be assumed to happen on their own, such as heart rate and skin temperature. Biofeedback can

have direct effects on reducing muscle tension and controlling blood flow throughout the body. This technique is so well established as a preventive for migraine that some consider it to be a standard treatment option.

Hypnotherapy is the state of focused concentration that allows the participant to be highly receptive to suggestion. In 1958, it was approved by the American Medical Association as a therapeutic technique. Hypnotherapy has been shown to produce similar effects on the body as deep relaxation, and a few studies show it possibly decreasing the frequency and severity of tension-type and migraine headaches.

Imagery (guided or unguided) and visualization can provide relaxation as well as direct effects on your body. Scientific tests have shown that simply imagining a place, situation or thing causes the same patterns of brain activity as if you were actually experiencing that place, situation or thing. One technique is to teach patients to recreate stressful situations in their thoughts and then imagine more positive methods of handling the situations.

Meditation The word meditation shares the same root as medicine, meaning "to cure." Formal clinical studies of meditation began during the 1960s, with proven effects in reducing pain, high blood pressure and heart rate. Changes in chemical blood levels in the body have also been reported. Many forms of meditation exist and can teach patients how to manage pain as well as the stressors of everyday life.

Psychotherapy Living with the pain and stress of a headache disorder can leave patients feeling helpless, frustrated, anxious and/or depressed. These emotions can work against them and make the headache condition worse by lowering their ability to tolerate pain and stress. Several forms of psychotherapy (counseling) such as cognitive therapy, behavioral therapy and support groups can be helpful in dealing with the effects of disabling headaches. One study showed between 43% and 100% improvement of chronic tension-type headache patients involved in cognitive therapy as opposed to no improvement in patients who were not. Support groups can offer a safe and understanding place to share struggles and feelings about the headache disorder and can help patients feel less isolated.

Relaxation is considered the foundation and byproduct of many mental therapies and includes techniques that focus on breathing and relaxing the muscles. Three types of relaxation training are progressive muscle relaxation, autogenic training (using instructions of warmth and heaviness to promote calmness), and meditation. One study showed that after 10 therapy sessions of progressive relaxation training, 96% of headache patients had a reduction in the frequency, duration and severity of head pain.

Conclusion

The use of alternative and complementary approaches can be extremely helpful in achieving control of migraine and tension-type headache. Some approaches can cause harm, so reliance on hearsay in selecting a treatment is dangerous. Several therapies may be equally unlikely to help or to harm, while requiring time and money that could be better spent elsewhere. Also, reliance on alternative therapies alone could delay the diagnosis of a life-threatening headache. The best path may be to integrate traditional approaches with alternative modalities to achieve a well-balanced treatment plan.

Benefits & Harms of Vitamins/ Botanicals/ Herbs

Vitamin/Botanical	Type of Headache or Related Condition	Evidence of Harm
Riboflavin (B2)	Migraine preventive	Not known
Pyridoxine (B6)	Histamine-induced headache	Neuropathy
Vitamin A	Migraine? No evidence of benefit	Pseudotumor cerebri, hypercalcemia
Magnesium	Migraine preventive	Diarrhea
Coenzyme Q10	Migraine preventive	Not known
Hydroxycobalamin	Migraine preventive	Not known
Folic acid	Migraine preventive? No evidence of benefit	Not known
SAM-e	Migraine preventive	Not known
Peppermint oil	Migraine acute treatment	None
Feverfew	Migraine preventive	None
Ginger	Migraine preventive? No evidence of benefit	Not known
Butterbur	Migraine preventive	None
Gingko biloba	Migraine preventive? No evidence of benefit	Not known
Pueraria root	Migraine acute treatment? No evidence of benefit	Not known
White willow bark	Acute treatment? No evidence of benefit	None
Passionflower	Sleep disorders? No evidence of benefit	None
Cannabis	Migraine Tension-type headache	Tension-type headache in chronic use
Ephedra	Energy enhancer, weight loser No evidence of benefit	Central nervous system toxicity, heart complications, stroke, death.
Kava kava	Anxiety/ No evidence of benefit	Liver toxicity
Tobacco	Headache trigger No evidence of benefit	Multiple adverse health effects

William Young, MD and Mary Paolone, RN. The Jefferson Headache Center. Philadelphia, PA

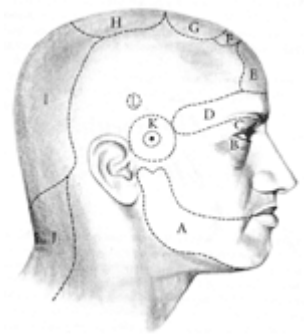
Appendix C

From *Headache*, The Newsletter of ACHE. Summer 2003, vol. 14, no. 2.

Other herbal and folk remedies not mentioned in this article that may be beneficial:
Folk remedies for relief:
Apply Cold compress with 2 drops of peppermint oil to painful area for 15 minutes
Horseradish poultice on neck for under 5 minutes
Footbath
Bath with 3 drops each of chamomile, lavender and rosemary

Chinese herbalists say headaches are caused by liver stress. Some liver-strengthening herbs are dandelion, yellow dock, milk thistle seed, and burdock. Use one at a time, a 15-25 drops of the tincture several times a day, for two weeks. If symptoms continue, switch to a different herb.
St Johns wort at 300 mg 3 times a day
Calcium (with the magnesium) 1,000 mg/day

Appendix D[20]



Pain here indicates

A : Tension and infections of the gums and teeth.
B : Overacidity (pain of the eyeball).
C : Gastritis (pain of the eye socket).
D : Inflammation of the stomach.
E : Ulcers
F : Disorders of the intestines.
G : Disorders of the fallopian tubes.
H : Kidney disorders.
I : Disorders of urinary tract.
J : Neuralgia.
K : Formation of cataract.
L : Disorders of the brain and the spinal nerves.

Appendix E

Managing Migraine During a Woman's Life Cycle[19]

	Menstrual migraine	Migraine in pregnancy	Migraine and menopause
Frequency	10%	New onset: 10% to 15% Improvement: 70% Worsening: 5% to 10% Postpartum: 30%	Not known
Cause	Rapidly decreasing estrogen levels	Hormone flux in first trimester Improvement related to steadily increasing estrogen (100x the normal) Estrogen falls during postpartum period	Hormone flux prior to onset Decreasing estrogen levels while on cyclic (alternating) replacement therapy
Examples of treatment option	1. NSAIDs daily for 2 days prior to anticipated migraine 2. Ergotamine, triptan 3. Daily BB, TCA, CCB, VPA 4.Estradiol before menstrual period 5. Anti-estrogens, androgens	1.Rest, biofeedback, icepacks, eliminate trigger factors 2. Acetaminophen 3. Antiemetics, fluids 4. Butorphanol 5. Preventive: BB, CCB	1. Reduce estrogen dose 2. Continuous dosing 3. Change estrogen preparation 4. Switch from oral to transcutaneous (patch) formulation 5. Add androgens 6. Combination of above changes

NSAIDs: nonsteroidal anti-inflammatory drugs
BB: beta blockers
TCA: tricyclic antidepressants
CCB: calcium channel blockers
VPA: valproic acid

Appendix F

HEADACHE AS A WARNING SIGN

See a health care professional on an urgent basis if any of the following occur:

- Severe, sudden headaches that seem to come on like "a bolt out of the blue."
- Headaches that are accompanied by a loss of consciousness, alertness or sensation, confusion, or other neurological and/or personality changes.
- Headaches that recur in one particular area such as an eye, temple etc.
- Headaches that recur and are of high intensity or frequency.
- Headaches that are accompanied by neck stiffness and fever.
- Headaches that are associated with head injury.
- There is a change in the nature or frequency of headaches.
- The worst headache in one's life.
- Temporary change in vision or visual acuity may simply be a sign of migraine headache but deserves special attention if new.

Appendix G

The physiological response to relaxation training and its effect on headaches:
as presented by Dr. Gay Lipchik, St. Vincent Rehab. Assoc, PA

> "Relaxation training slows down the sympathetic nervous system, which is responsible for the stress response. The sympathetic nervous system is involved in regulating heart rate, blood vessel expansion and contraction, blood pressure, sweat production, sleep, and alertness. During stress, heart rate and blood pressure increase, sweat production increases, breathing becomes shallow, and adrenaline and other hormones are released, causing blood vessels to constrict and muscles to contract. You may have noticed that your shoulders are hunched up and your jaws are clenched during stress. You can see then how slowing the stress response might be beneficial. Deep relaxation reverses many of the physical responses to stress that can trigger headaches. Additionally, during deep relaxation, the relaxed person takes fewer breaths per minute, yet breathes more deeply, "bathing" the blood cells in oxygen, which means more oxygen gets to the muscles and to the brain. Increasing oxygen supply to the brain seems to help prevent headaches. With practice, deep relaxation changes your body's response to adrenaline and other stress hormones so that it takes a greater disruption from life stresses (and the stress response) to trigger a headache. Becoming deeply relaxed not only helps reduce headache frequency, but it can give a greater sense of self-control as well as decrease irritability, anxiety, depression, insomnia, and blood pressure."

Some interesting studies measuring the effect of yoga on chronic pain "'People suffering from chronic pain go through more than just the pain itself,' explains Sonia D. Gaur of Harbor-UCLA Medical Center's department of psychology.[21]'They contend with anxiety and depression as well as medication usage. Our study found improvement in every area.'
"Gaur's study, presented at the American Psychiatric Association's annual meeting, recruited 18 volunteers suffering from chronic pain from ailments such as migraines and osteoarthritis. The volunteers participated in 90-minute yoga sessions three times a week for four weeks; they combined meditative breathing exercises known as pranayama with different yoga poses. The poses were designed to release physical tension."To measure the effect that the yoga sessions had on the volunteers' pain, Gaur asked them to rate their moods and the severity of their pain at the end of each week. Most volunteers reported that their pain decreased enough to ask their physicians to decrease their medication. Although no one knows the exact mechanism by which yoga works to relieve pain, Gaur says what is more important is its effectiveness. 'Some people live with chronic pain their whole lives,' Gaur says. 'Yoga is another way of coping with these ailments.'"

Yoga provides both the exercise that people with rheumatoid arthritis require and the stress relief/muscular relaxation that has proven to be tremendously beneficial in relieving so many different types of pain," he says. "On the purely physical side, yoga gives you all the benefits of range-of-motion exercises. It helps restore flexibility and improves circulation to your joints, allows more healing nutrition to reach them, forces more oxygen into those joints, and facilitates the release of endorphins--the body's own natural painkillers." Yoga also relieves pain by reducing muscle tension. "It forces you to relax and take yourself out of that constant `fight or flight' mode that chronic pain can cause," says Dr. Gordon.[22] "Pain creates muscular tension, which in turn causes more pain. Yoga breaks up that vicious circle".

11. **Biography: Lenore Bryck**

I've benefited from working with many wonderful clients for 20 years, refining my work as a pain relief therapist and movement educator. I continuously synthesize my experience and training in medical massage and other manual therapies, dance and movement therapy, physical therapy, mind-body work and Structural yoga therapy, to renew a unique approach in helping clients manage and recover from chronic pain.

I have had the privilege of learning with some special teachers, including Mukunda Stiles. My most challenging, fun classroom, though, is my home, where my children are daily reminders that human beings are miracles; fragile and powerful, who thrive on kindness and respect and where I've learned with my husband and best friend, that commitment and humility can bring the grown-up kind of love that carries the wisdom of age and the romance of youth.

My deepest gratitude goes to my #1 guide and teacher, Prem Rawat, (Maharaji) who shows me how to treasure the feeling of peace inside and thoroughly enjoy my personal love affair with Life itself.