Structural Yoga Therapy Considerations

For Active Older Adults (65-75)

Structural Yoga Therapy

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1. Case Study

In November of 2004 I donated a private yoga therapy session to a fundraiser that was being held at a local art studio. DW purchased the gift certificate and eagerly contacted me to arrange for a private yoga session. We had such great rapport at that first session that I asked if she would like to continue working with me and be my case study for this course. She was very honored and excited about the opportunity and agreed immediately. DW is fairly representative of concerns and issues that an active older adult may present to a yoga therapist.

I have had the pleasure of working with DW for the past 11 months. We meet about once a month for follow up and reevaluation. In addition we correspond regularly by e-mail and over the phone. DW is a 68-year-old, unmarried, retired woman who has no biological children and no remaining immediate family. At 5'5" tall she weighs 178 pounds and has a goal weight of reducing to 150 pounds. Until the age of 40 her weight was 126 pounds. In her younger years she was very fit and physically active. Skiing and outdoor sports were a very integral part of her lifestyle. DW is a very active older adult with diverse interests, including a weekly prayer group, a book club, serving on several boards and volunteer work. Her interests include reading books on Eastern philosophy. She practices meditation and prayer daily.

At the age of 60 DW retired from her professional career as a Vocational Rehab Counselor where she worked with clients with disabilities and was involved with an international exchange program. Her choice to retire was motivated by her decision to adopt an 11-year old foster daughter. This has proved to be a very troubled relationship. Her foster daughter was eventually placed in a group home. While living in the group home her daughter came home to visit on weekends. They continued to work on their relationship and reestablished some level of trust. Recently her daughter graduated from high school, got a job at a local department store, and was placed in an unsupervised state funded townhouse. This has been a major transition for DW and she is unsure how the future will unfold for them.

Living in a university town affords DW many opportunities to stay involved in local activities. She is very active as a volunteer “Marine Docent” where she teaches groups about preservation and wise use of marine resources. Although she really enjoys the work she finds the scheduling of the events rather inconvenient because she is not called to work on a set schedule, but rather as the events or groups come up. She is looking for more predictability in her weekly schedule. Additionally, her travel schedule is extensive and in the past year she has visited South Africa, Zambia, France, England, and many locations within the US.

Despite her interests and activities DW describes herself as being lonely and mildly depressed. Now that she is retired DW wants to develop some routine in her life which would include a daily yoga practice. Weekly activities include attending a gentle Kripalu yoga style class one day per week the past year and going to Curves, a women’s only express fitness center.

Past injuries include being thrown from a horse in 1986. This led to a cervical stenosis in C6-C7 on the right side that required her to wear a neck brace for two weeks. She re-injured her neck several years ago doing full shoulder stand with improper technique. Presently she is experiencing no pain but has residual tension in the upper back.

In September of 2002 DW had surgery for a torn meniscus in her right knee. After completing the recommended course of physical therapy she still reports feeling some pain and stiffness in the knee joint. She could not pinpoint any source of the injury such as an accident or fall.

Another dominant theme in her life has been her struggle with low vision. DW has worn glasses since the age of three. She was extremely cross eyed as a child and required Nystagmus surgery for the constant motion that occurred in her right eye. Her left eye was always stronger and her right eye was “shifty". During her childhood she used the left eye almost exclusively for vision. Her condition was described as highly myopic with low vision. Poor vision has been a dominant factor in her life. She has always had trouble seeing, as a child she was always placed in the front row so that she would be able to see and endured teasing from other children because of her placement in the class and her looks. At age 9 she underwent refractive surgery on both eyes.

Throughout her life she remembers being hunched at her desk in order to see because of extreme nearsightedness, even when wearing corrective lenses. The right eye is still turned in slightly. Ten years ago she underwent a second refractive surgery. After the surgery she had double vision for a few months but eventually her vision returned and was improved from pre-surgery levels. She still wears glasses today but her vision is greatly improved from earlier years.

Getting a good night’s sleep has been difficult for DW because she suffers from mild obstructive sleep apnea and heavy snoring. The result of a sleep evaluation revealed that she had mild to moderate sleep apnea. She tried using a positive airway pressure device during the night but found that she was not able to sleep with the device on. She described the experience as “feeling like I was being suffocated." The heavy snoring is a result of the inner lining of the nose being chronically inflamed. This condition is called rhinitis. The combination of the two conditions often results in fatigue, lack of concentration, and lack of energy from sleep disturbances. Anxiety or concern about upcoming events also prevents her from easily falling asleep. Her mind races when she goes to bed and she finds it difficult to turn the thoughts off. Being an avid reader, DW often finds herself staying up until well past midnight if she gets involved in a good book. She also reports not being able to go back to sleep easily if she wakes up during the middle of the night.

Although DW is very active and busy, she describes herself as being unable to commit to the practice of devoting time to her self and has an inability to stick to things. She struggles with time management issues and because she is retired has gotten into the habit of putting things off because, as she describes it “there will always be time later." DW feels she is in a transition phase and wants to give up obligations.

One of the biggest concerns for DW is “feeling her age”. During her youth she describes herself as being very athletic and “taking after her father” who was extremely fit and very close to DW. Now as she is aging she has “become her mother”, and is very concerned about her lack of stamina and weight gain. She remembers seeing her mother at the age of 72 almost house ridden because of her illnesses: diabetes, high blood pressure, and obesity. DW vowed never to become like her mother, but now she fears that she may be doing just that.

A recent fall in late 2004 left DW very concerned about her balance and strength as well. She describes herself as feeling old and having a general feeling of stiffness. There were no significant injuries from her fall.

Additional concerns include lack of memory and a need for clearer thinking.

D.W prides herself on having “good posture”. She has always held herself “rigid” because she wanted to look distinguished.

She has a strong personality and knows her own mind. She was very outspoken in her earlier career and sees herself as a strong individual, all those she has softened some since retiring.

1a. Initial Intake

The initial intake and assessment process was broken down into three separate sessions to prevent DW from being on the table for too long. Session 1 consisted of assessing her goals and doing a body reading. She was also instructed on page 1 of the Joint Freeing Series because she was eager to have some practices and get started right away. Session two was used for range of motion testing and session three was dedicated to muscle testing. Further recommendations were taught and explained during the fourth session.

1b. Physical Assessment

Self-Assessment Summary	**Posture Body Reading 1/25/05**
General Weakness	Head tilted back slightly
Lack of Stamina	Forward lean at the waist
Lack of Willpower	Deep lumbar curve
Right knee pain and stiffness	Eyes move in two different directions
Memory Problems	Flat feet
Balance Difficulties	Right leg 1/4" shorter
Moderate Obstructive Sleep Apnea	Shallow breathing, mouth breathing
Heavy Snoring	
Low Vision	
Anxiety	
Weight Gain	
Mild Depression	
Loneliness	

Range of Motion Assessments

		2/22/05		8/16/05	
Joint Action	**ROM**	**1st Date**	**1st Date**	**2nd Date**	**2nd Date**
ANKLE	Norm°	ROM° left	ROM° right	ROM° left	ROM° right
Dorsiflexion	20°				
Plantarflexion	50°				
Eversion	20°				
Inversion	45°				
KNEE					
Extension	0°/180°				
Flexion (Prone)	135°-150°	120	110	*	*
Flexion (Supine)	150°	154	142	*	*
HIP					
Extension	15°+15° Lumbar				
Flexion (Straight-Leg Raise)	90°	81	85	85	85
Flexion (Bent Knee)	135° - 150°	115	110	120	110
Adduction	30°- 40°	pain	pain	30	30
Abduction	45°	35	37	40	39
Internal (Medial) Rotation (Prone)	35°	24	26	28	28
External (Lateral) Rotation (Prone)	45°- 60°				
SPINE					
Extension	NSS				
Flexion	NSS				
Lateral Flexion	Approx. 45°				
Rotation	NSS				
NECK					
Extension	55°				
Flexion	45°				
Lateral Flexion	45°				
Lateral Rotation	70°				
SCAPULA					
Adduction	NSS				
Abduction	NSS				
SHOULDER					
Abduction	40°				
Adduction	130°				
External Rotation	90°				
Internal Rotation	80°				
Flexion	180°				

ELBOW	
Extension	0°
Flexion	145°
WRIST	
Flexion	90°
Extension	80°
Radial Deviation	20°
Ulnar Deviation	30°

* no ROM tests done on knee due to pain and upcoming surgery

All empty fields are standard.

Muscle Testing Assessments

	2/22/05		8/16/05	
Joint Action	**1st Date**	**1st Date**	**2nd Date**	**2nd Date**
ANKLE	LEFT, 1-5	RIGHT, 1-5	LEFT, 1-5	RIGHT, 1-5
Dorsiflexion				
Plantarflexion				
Eversion				
Inversion				
KNEE				
Extension	2.5	3 cramping	3	3
Flexion	3	3	4	4
HIP				
Flexion (Straight-Leg Raise)				
Flexion (Bent Knee)				
Sartorius Isolation - Prone				
Hip Flexors + Abs - Supine	3	3	4	4
Gluteus Maximus Isolation MT - Prone				
NECK				
Extension				
Flexion				
Lateral Flexion				
Lateral Rotation				
SHOULDER				
Abduction				
Adduction				
External Rotation				
Internal Rotation				
Flexion				
Extension				

Muscle Testing Assessments	3/6/05		8/16/05	
Shoulder (Con't)	LEFT, 1-5	RIGHT, 1-5	LEFT, 1-5	RIGHT, 1-5
Flexion				
WRIST				
Flexion				
Extension				
Radial Deviation				
Ulnar Deviation				

c. Summary of Finding (1/25/05)

Tight Muscles:	Weak muscles: strengthen	Release needed	Reassessment Findings 8/05
Rectus Femoris	Quadriceps including rectus femoris (both)		stronger
	Psoas		stronger
	Rectus abdominis		stronger
	External rotators/deep six - Left		No change
	Internal rotators		stronger
R: IT Band	Glut Med/ TFL (both)	IT Band	Getting trigger therapy
	Quadratus lumborum (both)		Stronger
	Adductors (both sides)		No change
	Abductors (both sides)		Stronger
	General pattern of weaker muscles on L side		Closer

1d. Recommendations

Visit 1: 1/25/05

Our first meeting was for building rapport and finding out DW's objectives. Her goal was to establish a daily yoga practice that would give her increased balance, stamina, more flexibility, and helped to strengthen the supporting muscles of her right knee joint. She was also concerned about her lack of memory and wanted something to help her develop clearer thinking. DW was instructed on how to do page one for the Joint Freeing Series. Because all of her poor body awareness these instructions took quite a bit of time. Her homework was to practice the first half of the joint freeing series daily for the next

two weeks until I returned to see her again. She was easily able to do the joint freeing series from a seated position on the floor.

Summary of recommendation: Page One of the JFS seated on the floor

Visit 2: 2/15/05

At our second meeting it became clearly apparent that DW was looking for a Lifestyle Coach as well as a yoga therapist. Most of the issues that she presented were not structural. I reassessed for practice of the first part of the joint freeing series and gave her some polishes. She was still clearly struggling with body awareness and coordination of the movements but she was performing all of the movements safely. She was getting ready to go on a trip to South Africa and Zambia in March and she was quite anxious about the preparations. Her breathing was shallow. We reviewed deep top to bottom breathing as detailed in Mukunda's text. She was not sleeping well so I gave her a recommendation of doing Complete Wave Breath while lying in bed and using Yoni Mudra. I also recommended that after she finished these energetic practices that she try sleeping on her right side. This is a basic Ayurvedic recommendation for moving the body into a relaxed state by opening the left nostril, and accessing the right hemisphere of the brain.

We discussed her sleep apnea concerns and her tendency was to exhale with the mouth open. We discussed prior experiences using a neti pot. She was somewhat concerned that this practice might not be allowed or would aggravate her condition so she planned to get permission from her doctor to return to using the neti pot regularly. I also introduced Eye Exercises per Mukunda's recommendation. I was advised that this was the most critical part of her therapy. I in no way mean to infer that simply performing eye exercises would improve DW's vision as her condition was very severe and advanced. Rather, the recommendation to perform eye exercises is to strengthen the eye muscles, stimulate neurological pathways, and balance energy.

Mukunda also recommended that DW prepare a presentation for her book club on her upcoming trip to South Africa. The intent of this homework was to help improve her memory and by completing the project she would be building kapha. She was excited about this prospect and receptive to the challenge.

Summary of Recommendations: Complete Wave Breath with yoni Mudra before bed to feel her energy and move prana, seated pranayama: Wave Breath with counting to improve lung function and memory. (Alternate nostril breathing could not be taught because of nasal congestion.), sleeping on her right side, neti pot, eye exercises, continue using the JFS, think about preparing a presentation of her upcoming trip for her book club after returning.

Visit 3: 2/22/05

On our next visit DW reports that she is sleeping better, using the breathing practices and Yoni Mudra before going to sleep or if she should wake up in the middle of the night. She is also sleeping on her right side. She finds these practices very relaxing and helpful.

DW is doing circuit training with light resistance training machines three times per week for the past two months at Curves. She has been continuing with her joint freeing series. She still exhibits a lot of mouth breathing. To limit the effort required of DW and amount of time, I conducted the first half of her full body Structural Yoga assessment during this session and scheduled a follow-up date to finish the assessment process.

Visit 4: 3/8/03

We conducted the second half of DW's full body assessment on the therapy table. There were no recommendations given to DW at this time because the assessment process was strenuous for her and was enough for one day.

Visit 5: 3/16/05

DW is preparing for yet another trip. This time she was going to Africa and France for one month with some friends. She has recently been sick with a severe cold and flu like symptoms and although she was feeling better still exhibited low energy. During this time she used Yoni Mudra extensively and it did help her to sleep better. She is continuing to sleep on her right side and finds that very helpful. She has not been doing the joint freeing series or eye exercises for the past 10 days because of illness and lethargy. She was doing her practices regularly for quite some time before the sickness. We discuss her difficulty and struggles with adherence to her yoga practice. She has been doing regular pranayama practice and daily meditation and feels she has developed a lot more awareness of breath. Our focus was dealing with her worrisome thoughts about preparation for the trip. We discussed the value of the meditation process for helping to clear the mind and allow the thoughts to come more slowly. We worked out a schedule of how DW would be able to incorporate some of the practices into her busy and varied travel schedule. Although I had some results from her earlier structural analysis she did not want to add anything new to her routine at this time because she was preparing for her trip.

Summary of recommendations: use meditation practices to help reduce worrisome thoughts.

Visit 6: 4/28/05

During this visit we spent a lot of time clarifying details of her medical history. DW confided a lot of information about her vision problems. We also went over the summary of the results of her assessment and discussed specific muscles that were weak and tight. DW had experienced a considerable amount of right knee pain while walking on vacation. She had been doing more walking than usual and experienced pain when going downhill. She was determined to not let her knee discomfort interfere with her vacation so she was ignoring the symptoms. DW was scheduled for a medical re-evaluation of her knee. DW had been practicing her eye movements regularly and now could successfully perform full circles as well as vertical and diagonal movements. DW had a very irregular daily schedule and would often have difficulty getting up at the same time each morning because she often stayed up really late. She was quite intrigued with the ayurvedic

recommendations to follow a set schedule each day and wanted to establish more routine in her life. I followed up on the session by sending her some Ayurvedic web sites to review and also some articles on the importance of having a consistent routine and seasonal diet. I had planned to introduce three additional strengthening poses but DW was getting overwhelmed and felt she already had plenty to concentrate on and wanted to wait until our next session to add any more new material.

We reviewed her daily routine of:

1. Eye Movements: Nethra Vyayamam (see appendix)

2. Joint Freeing Series with emphasis on specific postures including:

    a. Knee Extension and Flexion Position 4: to strengthen the quadriceps and psoas and stretch the rectus femoris

    b. Hip Internal Rotation and External Rotation (esp. on L side) Position 5: to strengthen the internal hip rotation (Internal: Gluteus medius anterior fibers, tensor fascia lata, gluteus minimus; External: Iliopsoas, sartorius, gluteus medius posterior fibers, gluteus maximus, 6 deep external rotators

    c. Spine Flexion Position 6: to strengthen rectus abdominus and psoas

    d. Hip Flexion position 7: to strengthen iliopsoas, rectus femoris, and abdominals.

    e. Hip Abduction/Adduction Position 8: to strengthen Abductors (TFL and gluteus medius) and Adductors

    f. Spine Lateral Flexion Position 17: to strengthen quadratus lumborum

    (Positions 14 through 21 were performed from a seated position in a chair to minimize the amount of time spent on the floor)

3. Relaxation with Yoni Mudra and Wave Breath

4. Pranayama (Complete Wave Breath) with counting, using equal length for the inhalation and exhalation. She was asked to stay within her comfort range but gradually try to improve her lung capacity as her tolerance increased.

5. Go to bed at a consistent time each evening

Visit 7: 8/05

DW and I stayed in contact via e-mail and phone during her various trips and volunteer teaching events during the summer. She had been reevaluated for the pain in her knee. She was diagnosed with a second meniscus tear in the right knee. She was given a cortisone shot and referred to physical therapy two months ago. The recommendation

was immediate surgery however she chose to postpone the surgery until November because of her commitments for the summer. She incorporated the physical therapy exercises into her yoga practices. She was feeling a lot of strain in her IT band and it was sore to the touch. Additionally, she had been told her kneecap was shifting out of alignment and extensive arthritis was suspected.

DW was beginning to reveal more details of her life story. She detailed her years as her father's caregiver and the events surrounding his death. We discussed her issues with time management and the difficulties of trying to get things accomplished when she feel no sense of urgency. She finds it difficult to complete tasks and feels that she often does not do things wholeheartedly. A discussion on the quality of her meditation practice revealed that she had a fear of deep meditation.

We discussed using visualization and positive thinking along with her prayer session. DW planned to make a Bhaki or Devotional Sankalpa to help her complete her yoga practices every day. A sankalpa is a thought, intention, or willful vow toward a specific outcome. Through powerful resolve, active thought, and direct prayer one is able to access inner strength and power to accomplish a desired behavior. By turning it over to the Divine she was able to ask for help and made a conscious intent to change her behavior. She will repeat this sankalpa in the form of a positive affirmation during her daily morning prayers. She was going to spend some time developing a ceremony or ritual to make this conviction more concrete.

To help her stay focused we also discussed trying to make her practice shorter by breaking it up into sections or pieces so that she wasn't expected to do the entire practice every day. We added an additional pranayama practice of kapalabhati to help balance kapha. DW was feeling very low and extremely frustrated with her knee condition. She was looking forward to getting the surgery scheduled so that she could “get back on track with her life”.

Summary of recommendations: re-organize daily practice into smaller chunks, add visualization and positive thinking, add Kapalabhati, perform a ritual to help establish resolve

Visit 8: 8/16

At this session I did a reevaluation assessment but due to pain in her knee I had to be extremely cautious. At this session we shifted from dynamic leg lifts and stick pose to a deeper strengthening version that required the position to be held static for six breaths. DW was unable to hold the position for any longer. She was introduced to Butt Walks to strengthen the QL. We discussed using pranayama practices to help strengthen the rectus abdominus. She could not do some of the standard recommendations for a tight IT band because of her limitation of the knees. She could still do joint freeing series Position number 8 (Adb/Add) although she could not perform positions like Gomukasana because they put too much pressure on the knee.

Summary of recommendations: Butt walks, leg lifts in Stick, more forceful exhale during pranayama practice.

Visit 9: 9/15

This session was devoted to follow-up and polishing the practices from the previous session. We discussed her feeling of loneliness and her family history and her challenges. We had many sessions where we would spend long periods of time talking about how a yogic lifestyle could help her with various challenges.

Visit 10: 11/5

DW is still experiencing dull pain, especially in the IT band. She is continuing with joint freeing series and physical therapy. She is working with trigger point release for her IT band with her physical therapist. Knee surgery has been scheduled for November 16 and DW is hoping that the discomfort will soon be in the past. She is fearful to go under anesthesia because of all the "dangerous sounding" waivers and disclaimers. She has great faith in her doctor because he has a "good reputation and performed her last surgery in 2002. We created visualizations as being pain-free, walking briskly again and feeling strong and vibrant to help prepare for surgery. These affirmations were added to her morning meditation practice. I shared a draft of a case study done on Aramati Hulbert entitled *Structural Yoga Therapy for Post Meniscus Surgery.* DW was very excited to hear that the outcome had been so successful for the client and is anxious to get her surgery over with. She was now feeling much more energetic and hopeful. She has continued to do butt walks to strengthen her QL and is feeling much stronger.

1e. Summary of results

DW had increased strength, energy, and hope, is falling asleep within 30 minutes, feels she is aware of her breath, and is happy that she has a fairly regular practice. Our regular meetings are very enjoyable for her and keep her accountable to someone. She is optimistic about her upcoming surgery and looking forward to continuing yoga therapy as part of her rehab. She writes:

> "Dear Mangala,
> I have been meaning to "drop you a line" and thank you so much for all the help you gave me. I am incorporating parts of the program into my life in different ways---I am not regularly doing all of the parts together. But I decided that if I include a number of the joint freeing exercises with my cool down after Curves and do the eye movements at various times as well as the Complete Wave Breath and meditation--- at least I have an awareness and a sense that they are a part of my life. Discipline has always been difficult for me, but I am making progress and I am so appreciative of your patience, insight and knowledge. Thank you soooo much!!!! I hope you are well."
> DW
> "Your recommendations have been right on; your listening skills amazing and your intuitive abilities remarkable and I thank you, as I say, for hanging in there."

2a. Active Older Adults (Age 65 – 75)

Statistics on Older Americans

Older Americans (age 65 and older) are an important and rapidly growing segment of our population. In 2000 there were an estimated 35 million people age 65 or older, or 12.4 percent of the population. This number is expected to jump to 82 million or 20.3 percent of the population by 2050 (Older Americans 2000: Key Indicators of Well-being). Unfortunately, at a time when the elderly should be honored and celebrated they are often ignored and underserved by our culture. Even in Yoga, most practices and books are dedicated to the young and fit individual who is in the kapha or sunrise phase of life. When there is mention of older adults the information is normally geared towards the over 55 group. The term "seniors" lumps adults from age 55 and older into one category. Clearly there is a huge difference between a 55-year-old body, a 65-year-old body, a 75-year-old body, and an 85-year-old body. However this distinction is rarely made in the yoga community and Senior Yoga classes are composed of gentle yoga or chair yoga. These common practices tend to address limitations without doing much to address the possibility of an improvement or change.

As the American population becomes healthier life expectancies continue to increase. In 1900 the average life expectancy was only 49 years. Current life expectancy is 79 years for women and 74 years for men. Those who live to be age 65 can expect to live for another 18 years. Those who live to be age 85 can expect to live for another six to seven years! (The State of Aging and Health in America 2004)

Stages of Aging

A development perspective divides age groups into the following categories:

1. Young Adulthood: age 20 to 35 years
    a. biological functions and physical performance are at their peak
    b. continual gains in strength and muscle mass
2. Young Middle Age: age 35 to 45
    a. physical activity begins to decrease
    b. a 10 - 20 pound increase in body fat is typical
    c. importance starts to shift away from physical appearance
    d. 0.5 percent decrease in muscle mass per year until age 50
3. Later Middle-Age: age 45 to 65
    a. women reach peri-menopause at about age 50 and begin to loss bone mass
    b. men have a reduced output of sex hormones
    c. additional 30% loss in muscle mass before age 70
    d. osteopenia or osteoporosis may be seen, therefore, weight-bearing activities and resistance training become critical.
    e. career opportunities usually result in increased discretionary income and time.
4. Early Old-Age: age 65 to 75

    a. modest decrease in physical activity
    b. additional 30 percent loss in muscle mass before age 80
5. Middle Old-Age: age 75 to 85
    a. often there is some physical disability or chronic disease
    b. marked decrease in flexibility
    c. in medical terms this population would be served by Gerontologists.
6. Old Age: > age 85

Physiology of Aging

There are very wide individual differences in terms of functional status at any chronological age grouping. Biological age considers the functionality of the individual, and may be very different from chronological age. According to *The Journal on Active Aging* (November/December 2003)

> "not only do individuals age overall at vastly different rates, it is quite likely that age-related changes in various cells, tissues, and organs differ as well. For instance kidney function may decline more rapidly in some individuals. In others, bone strength may diminish faster. The organs that age fastest in one person may not age as rapidly in another. This suggests that genes, lifestyle and disease can all affect the rate of aging and that several distinct processes are involved."
>
> "Much of what we think about aging is not aging, but disuse," says Dr. Walter Bortz of Stanford University Medical School. He claims there are only two proven ways for humans to look and feel younger and reduce the risks of dying were age associated diseases: engaging in regular exercise and eating a healthy diet."

Some of the expected changes reported that we can assume to occur in the body are listed below. (Fitness Management, November 2004 and September 2006)

1. Skeletal Muscle: A decrease in muscle mass leads to a steady decline in strength. The medical term for this loss of muscle mass is sarcopenia. It is a contributor to slowing metabolism, changes in body composition, osteoporosis, insulin insensitivity which can lead to diabetes, and chronic fatigue.

2. Flexibility: The elasticity of tendons, ligaments and joint capsules is decreased as scar tissue develops between adjacent muscle fibers. Changes in connective tissue that can be attributed to aging include:

- an increase in calcium deposits
- adhesions
- dehydration
- chemical changes in tissue
- collagenous fibers replace muscle fibers (Alter, 1988).

Over the span of life, adults lose some 8 to 10 cm of low back and hip flexibility. The restriction in the range of motion at the major joint becomes more pronounced during late

old-age. Flexibility is thought to be conserved or improved by gently taking the main joints through full range of motion daily. (This shows the importance of daily JFS practice!)

3. Bone Health: There is progressive decrease in the calcium content and deterioration in the organic matrix of the bones with aging. Changes are more marked in women than men due in part due to:

- sexual differences in the hormone profile
- lower intake of calcium
- lower intake of good quality protein

Calcium loss can begin as early as 30 years of age, and, in women, the process accumulates for some five years around menopause. Regular load-bearing exercise can halt and sometimes even reverse bone mineral loss through the 80th decade of life. Such a regimen is particularly effective when accompanied by a high calcium diet (1,500 mg a day). (Fitness Management, November 2005)

Mayo Research teams recently studied the pathophysiology of osteoporosis in aging women. "Postmenopausal women undergo two distinct phases of bone loss – a rapid, transient phase that begins at menopause (due to loss of the direct suppressive effects of estrogen on bone cell function) and a slow, subsequent phase that continues indefinitely (due mainly to loss of estrogen effects on peripheral calcium metabolism leading to secondary hyperparathyroidism (HPT) and, indirectly, to bone loss.

2b. Gross and subtle body common symptoms

The CDC describes the United States as "being in the midst of a longevity revolution". With improvements in health care, chronic diseases are now the leading cause of death in the United States. The leading causes of death among persons age 65 or older in the U.S. are: (listed in order prevalence)

1. Heart disease (32.4%)
2. Cancer (21.7%)
3. Stroke (8%)
4. Chronic Obstructive Pulmonary Diseases (5.9%)
5. Pneumonia and Influenza (3.1%)
6. Diabetes (3.0%)
7. Alzheimer's Disease (3.0%)

Chronic health conditions in persons age 70 or older include:

1. Arthritis (58 %)
2. Hypertension (45 %)
3. Heart Disease (21 %)
4. Cancer (19 %)

5. Diabetes (12 %)
6. Stroke (9 %)

2c. Related challenges: lifestyle, diet, limitations on activities

Physiological changes will require gentler types of movement, the need for resistance training, the awareness of injury prevention, and balance and gait training to prevent falls. Depression and loneliness are often overlooked in older adults. The transition from being active in a career to being retired can often be very traumatic. Because of physiological changes and changes in quantity and types of physical activity there is often an increase in body fat that can lead to issues associated with being overweight. These include orthopedic concerns due to excess weight as well as cardiovascular and metabolic concerns. Regular physical activity and a healthy diet are essential at this phase of life. There is also a need to feel valued and respected. This is true of any age but often neglected in our culture.

Income:
As a whole the financial status as reported by the U.S. Census Bureau of low income older adults (over the age of 65) is improving slightly. Less than 10 % were in the poverty range in 2004 as compared to 15% in 1974. These poverty figures almost exactly parallel the population at large. In 1974 50% of older adults were considered low income or below. By 2004 this figure was only 40%, representing a 10 % increase in the number of older adults in America who had moved into the ranks of the middle class. Presently over 30% of older adults are considered middle income and 30% are in the high income bracket. Since 40% of older adults are classified as low income or below this presents an ethical question for yoga therapists when setting fees. Some options for discounted therapy sessions are recommended. They could be in the form of providing seniors discounts, offering sliding scale fees, or doing a certain number of sessions per month at no charge. Small group classes might also be considered; such classes could provide supervised, targeted yoga therapeutics at an affordable cost, might help make yoga more accessible to seniors, while offering the added benefit of socialization and mutual support. Some yoga training schools require free classes as part of their community outreach or seva program.

3. Ayurvedic assessment and Ayurvedic based yoga recommendations

The Three Phases of Life

From an Ayurvedic perspective there are three phases to life; kapha, pitta, and vata. Some refer to these as the Sunrise, Mid-day, and Sunset phases of life. (Kraftsow, 2002, Frawley, 1999). Classical Hinduism defines the three phases as brahmacari (childhood years, primary development phase, student), grhasta (householder), and vanaprastha (forest-dwelling) or sannyasin (renunciate). The early formative years of life are ruled by Kapha. The middle phase of life is associated with Pitta. The last phase of life is influenced by Vata (Svoboda, 2000). Although your basic constitution does not change during these phases of life, the energies associated with each period of years does change,

as do the responsibilities, duties, and expectations.

The last phase of life begins at approximately age 65 - 70 and lasts until the end of life.

“The main rule of Ayurvedic treatments is to prevent any of the doshas from becoming too high because in access they cause disease." High vata dries up ojas as wind dries up water and depletes, as well. (Frawley, 1999)

Ojas is the “primal vigor necessary for physical and mental endurance, responsible for nourishment, the basis of all higher faculties.” (Frawley, 1999)

Referring to old age as having predominant vata energy is an over simplification. This time of life is associated with chronic diseases like heart disease, cancer, etc. Many other changes in the body are about solidification as well. Once any condition becomes chronic kapha energy is dominant. The rigidness and “being set in your ways” often associated with older adults are kapha qualities. Therefore it could be argued that the energies of aging are both vata and kapha. (Stiles, Yogaville 2005)

DW’s constitution seemed to be pitta/kapha. The primary dosha that was out of balance was that of kapha. Kapha is about heaviness, strength, stability, and consistency but is prone to stubbornness, indifference, lack of motivation and diseases that result from access ama. This kapha imbalance also manifests as difficulty completing projects or tasks. (Ama is undigested food products that cause impurities in the body and eventually lead to disease.)

Sleep apnea is a mixture of vata and kapha. When breathing ceases this is kapha and often is related to a heart condition, especially if breathing ceases for more than 20 seconds. A recent study reported collaborated this by stating that severe sleep apnea could be an early indicator of heart disease and is believed to contribute to heart disease. (American Journal of Respiratory and Critical Care Medicine, September 2005)

DW exhibited excess kapha by her inability to complete tasks, excess weight, and lethargy. Kapalabhati wasused to throw off excess kapha.

The eye is a pitta organ. DW has major vision challenges that emerged at young age and have been present throughout her life.

Depression is low pitta and high kapha. This tamasic state requires stimulation. Often there is bad thinking involved in the client may be stuck or feeling guilty about something that may have happened and the client knows they should've done something about it but they have not capable at the time. (Stiles, Yogaville 2005)

There are several approaches that the yoga therapist can take when dealing with clients who have obvious predominant doshas.

For Kapha energy the therapist has to be firm so that the client can surrender.

For pitta energy the client has a need for communication in partnership. The role of the therapist is to help the client think better, not to tell them what to do, as pitta does not like opposition and prefers a more collaborative, partnering atmosphere. The approach that works best is to present some ideas and ask the question “what do you think?". An increase in discernment leads to a decrease in pitta. Pittas already know what they have to do, they just have not prioritized it yet. Anything that involves inflammation is a pitta condition. Things that are pleasant or unpleasant heat the body. Pitta is about doing. Ask the question, “what would be a better choice?". Then help the client come to their own conclusion. (Stiles, Yogaville, 2005)

Vata loves authority. (Stiles, email, 2005). DW clearly was very impressed that I was talking to Mukunda Stiles about her condition. She saw me as an authority figure and very rarely questioned my recommendations. There was also a piece of her that was strong willed and powerful. She responded better to caring and friendliness. She wanted the stability of our relationship and my friendship.

4. Common body reading

Active older adults will have varied body readings depending on their life history and past physical activity level. Often there are postural issues. The thoracic rounding often seen in older adults indicates tightness in the pectorals and weakness in the middle trapezius. An accompanying tightness in the iliopsoas is common as well. Generally the body becomes weak and tight unless there is an effort toward continued activity. Obesity is common unless a sensible, well balanced diet with appropriate portion sizes and a wide variety of nutrient dense foods are eaten.

5. Contraindicated yoga practices and general activities to modify or eliminate

Safety guidelines for prescribing an asana practice:

A. Assess the client of any chronic disease and ensure that is stable:

> Example 1: Chronic Heart Failure (CHF) - older adults are hospitalized more often for this disease than any other. In CHF the heart can’t empty the chambers completely with each heart beat. This results in fluids accumulating throughout the body especially in the lungs. There are very specific trainings that certify yoga teachers to work with this population such as Cardiac Yoga® (www.cardiacyoga.com). The founder, Mala Cunningham, PhD lives in VA and is affiliated with the University of Virginia.
>
> Example 2: Diabetes - excess glucose in the blood, Type II diabetes is often associated with inactivity and obesity. Diabetes can lead to cardiovascular disease, eye disease, or nervous system changes. Exercise may change the way students respond to insulin so it is recommended that diabetics perform exercise at

approximately the same time each day, so their medications can be adjusted.

B. Contraindications for movement may include:

1. Any new, undiagnosed symptom
2. Chest pain
3. Irregular, rapid, or fluttery heart beat
4. Severe shortness of breath
5. Significant, ongoing weight loss that hasn't been diagnosed
6. Infections, such as pneumonia, accompanied by fever
7. Fever itself, which can cause dehydration or rapid heart rate
8. Acute deep vein thrombosis (blood clot)
9. A hernia that is causing symptoms
10. Foot or ankle sores that won't heal
11. Joint swelling (encourage the student to seek a medical evaluation)
12. Persistent pain or a disturbance in walking after a fall. (Rule out fracture)
13. Certain eye conditions, such as bleeding in the retina, detached retina, cataract or lens implant, or laser treatment or other eye surgery. Inversions may be contraindicated, including down dog, head stand, and shoulderstand.
14. A history of stroke may rule out inversions and any position that increases intracranial pressure.
15. Advanced osteoporosis precludes excessive flexion of the spine (e.g., cat), and excessive pressure on the hip (e.g., pigeon pose)

Medical approval is recommended before beginning asana practice if any of the above conditions are present. (National Institute on Aging, NIH)
Sample medical clearance forms are available at:
http://www.exrx.net/Testing/PhysicianLetter.html

6. General recommendations for the condition N/A

Progressive through 3 phases –

a. therapeutic/free of pain;

b. stabilize situation and lifestyle change recommendations; and

c. maintenance and long term considerations.

7. Questions and Answers

Email correspondence with Mukunda regarding DW.

Q: DW told me she has trouble sticking to things. She has not been very compliant with doing her practices. I assume I need to increase Kapha with more strengthening poses. Other thoughts?
A: Call her more often. She will more likely respond to your caring than discipline.

Q: She loves it when I tell her I am consulting with you. Which dosha needs this?
A: Vata loves an authority watching out for their well being.

Q: She has been given pranayama with counting to improve memory as you suggested. Her weakest muscles are QL, quads, and abs. My plan is to add Butt walks to strengthen her QL and Stick with leg lifts to strengthen quads and psoas. Rolling bridge with emphasis on abs. This will help QL and general back strength. Any other suggestion?

A: Does she get out much for walking? Maybe you could take her for walk with your dog. Just for bonding and communication improvement. Sounds good. And promising.

Related Questions from Yoga Forums Q and A

Vision Problems

Q: I'm suffering from myopia. Please tell me which pranayama can help me get out of this?
Also how much time should I devote to yoga?

A: I don't know about pranayamas to heal myopia, but Tratak kriya is said to help vision disorders.

Good luck!

Sleeping Difficulties

Q: When you read my pulses, you asked me about whether I was sleeping ok. You said something about the pulses indicating an inability to rest. Something like that. At the time that I saw you I was sleeping fine, but I am now having problems sleeping. Some nights I fall asleep immediately but wake up a few hours later, wide awake. I got some tryptophan a few days ago and taking the tryptophan, at least that first night, I felt incredibly agitated. I have continued taking it, and don't feel agitated, but I can't say that I am sleeping as I usually do. I consider that I am a sleeper. I do many things well, but I have always considered that the thing I do best is to sleep. That has stopped being the case. Please tell me more about what you saw in the pulses. What does it mean. And what do I do.

A: I saw signs of vata not dropping down into belly of vessel. That is sign of not sleeping well or not going into deeper states of mediation. Reading spiritual literature is one way of dealing with that. Something is agitating you and that needs to be searched out and focused on. Light of consciousness seeks to know what is unknown then there can be Vata balance and resulting increase in pranic forces to keep sattvic harmony state of mind

Q: I have been puzzling with the joint problems I have. First I started off with a patella mistrack on my R knee since 3 yrs but I only start to take care of it this year so it became chronic. It happened from my dancing. I do a lot of hip turnouts in dance. In fact, my hip joint snaps when I do trikonasanas. I am doing physio leg raises and wall slides but

without significant improvement on my R knee. It still grinds when I bend it and aches during long walks.

Then this year I twisted my L knee while rotating my foot on a sticky flooring and got a meniscus tear. At first it hurt while walking but now I am walking around the house without a brace. But I feel the stabbing pain after doing long walks and squats. I found on my R knee also have a milder tear. When I do trikonasana, I feel the sharp pain with the foot turned 45 degrees and stretched.

Then in recent months I developed pain in my elbows and it hurts when I turn on the tap or push my hand towards a surface. One of them has tendinitis.

It just struck me the problems are on my elbows and knees but I am just in my early thirties! I wanted to find out the SOURCE of these problems.

I searched in the internet and was reading about the chakras. It mentioned about the nabhi chakra which has a relation to the elbows and knees and middle finger. I have a history of gastric problems and cannot take heavy foods. I take the coffee at tea time and the occasional chocolate  . I also had family disharmony in childhood and career problems in the present which affects nabhi chakra. I am also very moody. I think my nabhi chakra is catched. But I can't really do anything about my past family relationships, except not bother about them.

My R nose is blocked in the morning too. I meditate for half an hour in the morning. But I would like to know the SOURCE of my problems so that I can heal my joint problems instead of suppressing the symptoms.

I thank you for your light.

A: I would suggest you find a Structural Yoga Therapist in your area by looking at my website graduates list. a personalized assessment can be the most direct way to find source of challenges. Nabhi Chakra is the navel center its relations to joints is minimal. I suspect a dead end for you. Instead open nostrils by intention and if necessary place pressure in opposite armpit against ribs to open side you wish opened. More specific pranayama needs to be learned from teacher who can read prana and direct your attention so you learn to read your own too. namaste mukunda

Q: Thanks for your reply. I don't live in the US. It will be great if you can send me the contact details of an experienced teacher in London (UK) for SYT and prana teacher possibly trained in your techniques? There are so many around and I get confused who to go for!

For people you mentioned who healed their meniscus problems without surgery, I would like to know what processes they took to heal...I am currently taking boswellin (supposed to improve blood supply to joints) and took glucosamine.

A: For teacher with background in meditations and practices from the Yoga Sutras I would suggest one with studies from Bihar Institute of Yoga. I do not know one personally. I am only teaching two times in UK and will be there Oct. 12-20, 2005 then again next year for regular seminars. I hope to be training Yoga Therapists but will be at least a year before trainings are complete. In the meantime Pranayama should be learned by going into one lineage only in depth moving from different teacher or worse from different traditions is confusing and not promoting full potential of either spiritual or healing benefits. One person who i personally know has healed anterior cruciate ligament injury from Ayurveda and Yoga healing she can be reached by contacting www.yogarific.com blessings. namaste

8. References/ Resources

Websites

The State of Aging and Health in America 2004
http://www.cdc.gov/aging/pdf/State_of_Aging_and_Health_in_America_2004.pdf
This 48 page report "is the third annual volume in its series that presents a snapshot of the entire health and aging landscape of the United States and other areas of the world. The reports are produced by the Merck Institute of Aging and Health (MIAH) in various partnership organizations that are recognized leaders in the aging field." These reports represent the most current information and statistics on the health of older adults.

Older American Update 2006: Key Indicators of Well-Being http://www.agingstats.gov describe the health status of older Americans including life expectancy, mortality, chronic health conditions, sensory and memory impairments, and depressive symptoms.

Healthy People 2010 www.healthypeople.gov Healthy People 2010 provides a framework for prevention for the Nation. It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. The effort has two goals: to increase the quality and years of healthy life and to eliminate health disparities. Provides consumer information and links on how on making healthy lifestyle choices. Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services

Health-Related Quality of Life www.cdc.gov/hrqol Center for Disease Control's division of National Center for Chronic Disease Prevention and Health Promotion information site related to the promotion of health and quality of life by preventing and controlling disease, injury, and disability. Publications include *Measuring Healthy Days.*

Physical Activity and Older Americans: Benefits and Strategies. June 2002. Agency for Healthcare Research and Quality and the Centers for Disease Control. http://www.ahrq.gov/ppip/activity.htm This report describes the importance of physical activity, the prevalence and costs of inactivity, and the health benefits of regular activity; it also recommends levels of physical activity in older adults.

American College of Sports Medicine: Active Aging Partnership and the Strategic Health Initiative on Aging http://www.acsm.org/health%2Bfitness/activeaging.htm Tips on active aging, nutrition, and exercise safety. http://www.acsm.org/Content/NavigationMenu/Research/Roundtables_Specialty_Conf/PastRoundtables/Exercise_for_Older_Adults.htm. Medicine & Science in Sports & Exercise®, Volume 30, Number 6, June 1998 Position Stand on Exercise and Physical Activity for Older Adults (30 pages)

Exercise and Aging Physiology, Yale University School of Medicine http://www.jbpierce.org/Labs/AgingPhysiology.html. A review of current research projects involving the benefits of staying active.

The International Council on Active Aging (ICAA) The ICAA is the world largest association dedicated to changing the way we age by uniting and working with professionals in the retirement, assisted living, recreation, fitness, rehabilitation and wellness fields. It connects a community of like-minded professionals who share the goals of changing society's perceptions of aging and improving the quality of life for aging Baby Boomers and older adults within the six dimensions of wellness (emotional, vocational, physical, spiritual, intellectual, social.) Provides current research on aging. http://www.icaa.cc/headlinenews.htm. The ICAA and Desert Southwest Fitness now offer a course selection of 19 home study programs designed specifically for working with older adults and those with special medical conditions. Courses include balance training, chair exercises, fall prevention, arthritis, fibromyalgia as well as many other topics. http://www.icaa.cc/Education/educationalcourses.htm

Falls Prevention www.cdc.gov/ncipc/duip/spotlite/falls.htm The Center for Disease Control and National Center for Injury Prevention and Control. Tips on exercise and home safety aimed at reducing the incidents of falls among seniors. Facts and publications as well as links to other related sites.

American Society on Aging www.asaging.org The ASA is the largest organization of professionals in the field of aging. Their resources, publications, and educational opportunities are geared to enhance the knowledge and skills of people working with older adults and their families. Publications include *Aging Today* and *Generations*. Web based training available.

National Institute on Aging U.S. National Institutes on Health. http://www.nia.nih.gov Health and research information on aging. Details grants and training opportunities.

Arthritis Foundation www.arthritis.org Details on conditions and treatments, as well as pain management. Guidelines for exercise. Articles on the benefits of yoga for arthritis. http://www.arthritis.org/conditions/exercise/Yoga/default.asp

Centers for Disease Control and Prevention, Healthy Aging Program www.cdc.gov/aging. Health information for older adults. Health statistics and research from The Prevention Research Centers and Healthy Aging Research Network (HAN).

ArcaMax Publishing, Health and Fitness Newsletter www.arcamax.com Daily news emails with current health updates.

Physiology of Bone Metabolism in an Aging Population http://mayoresearch.mayo.edu/mayo/research/khosla_lab/bone_metabolism_physiology.cfm, Information on bone loss during aging and the pathophysiology of osteoporosis in aging women.

Mayo Clinic.com: Tools for Healthier Living. http://www.mayoclinic.com/health/senior-health/AN01173. Information on diseases and conditions, drugs and supplements, as well as an "Ask the Specialist" section where you can seach 30 different health topics. Topics include Senior Health.

Imaginis www.imaginis.com Imaginis is an independent company dedicated to providing the most reliable, in-depth information on breast cancer and related women's health issues. The Imaginis web site contains thousands of pages of detailed, physician-edited health information and the content is continually updated and growing every day. Topics include osteoporosis, breast cancer, and other women's health topics.

American Nystagmus Network http://www.nystagmus.org/aboutn.html ANN, Inc. is a volunteer, nonprofit organization for persons and families involved with nystagmus. Nystagmus is characterized by an involuntary movement of the eyes, which may reduce vision or be associated with other, more serious, conditions that limit vision.

American Heart Association Scientific Statement, Exercise and Physical Activity in the Prevention and Treatment of Atherosclerotic Cardiovascular Disease. Circulation. 2003;107:3109-3116 http://circ.ahajournals.org/cgi/content/full/107/24/3109. This American Heart Association (AHA) Scientific Statement for health professionals summarizes the evidence for the benefits of physical activity in the prevention and treatment of cardiovascular disease, provides suggestions to healthcare professionals for implementing physical activity programs for their patients, and identifies areas for future investigation.

e-Geriatrics.net http://www.e-geriatric.net/theories.html Theories on aging as well as a summary of changes that happen with age including degenerative changes by system.

Exercise and The Older Adult, Medicine & Science in Sports & Exercise® Volume 30, Number 6, June 1998 Position Stand http://www.acsm.org/Content/NavigationMenu/Research/Roundtables_Specialty_Conf/PastRoundtables/Exercise_for_Older_Adults.htm. ACSM Position Stand on Exercise and Physical Activity for Older Adults

American College of Sports Medicine, General articles on Physiology of aging http://www.acsm.org/AM/Template.cfm?Section=Search&Template=/Search/SearchDisplay.cfm

Physical Activity and Older Americans: Benefits and Strategies. June 2002. Agency for Healthcare Research and Quality and the Centers for Disease Control. http://www.ahrq.gov/ppip/activity.htm Details the health benefits from physical activity for older adults.

Family Practice Notebook http://www.fpnotebook.com/ This site is intended to aid primary care providers in their pursuit of optimal care, well-informed patients, and healthy families. Contains a collection of medical notes, and is divided over 4316 topics within 616 chapters and 31 subspecialties. Section includes Geriatric Medicine.

Medline Plus. www.nlm.nih.gov/medlineplus Health information from the National Institute of Health and the U.S. National Library of Medicine. Includes a medical encyclodedia, medical dictionary, current health news, and interactive health tutorials.

Mind-Body Center, University of Wisconsin Madison
http://aging.wisc.edu/research/mindbody.php The Center brings together researchers from the Institute on Aging, the Health Emotions Research Institute, and the Wisconsin Center for Affective Science. The collective goal is to study how emotional, psychosocial, and neurobiological factors interact to influence unfolding profiles of physical and mental health. Over the past 3 years new data have been collected on various longitudinal samples, as well as samples of women with rheumatoid arthritis and fibromyalgia.

Conscious Aging: A New Level of Growth in Later Life: Harry R. Moody, Institute for Human Values in Aging, International Longevity Center-USA, http://www.hrmoody.com/articlestext.html Articles on conscious aging and the myths and stereotypes of aging.

The National Eye Institute, http://www.nei.nih.gov/nehep/

American Academy of Family Physicians, www.familydoctor.org

American Sleep Apnea Association, http://www.sleepapnea.org/info/index.html

Aging Gracefully and Sleeping Well, National Sleep Foundation: www.sleepfoundation.org

Medicinenet.com http://www.medicinenet.com

http://www.e-geriatric.net/

Why do we age? http://www.senescence.info/theories.html

Alliance for Aging Research http://www.agingresearch.org/pressroom.cfm

http://www.kneehippain.com. This website contains animated sections and detailed information on knee and hip arthritis as well information on knee and hip replacements and implants.

www.LifeSpa.com John Douillard's LifeSpa website offers an integrative health care approach based on Ayurvedic medicine.

http://ajrccm.atsjournals.org, American Journal of Respiratory and Critical Care Medicine. Searchable index for current research articles on sleep apnea

National Institute of Health (NIH) Senior Health http://nihseniorhealth.gov, Senior health information from NIH. This website for older adults was developed by the National Institute on Aging and the National Library of Medicine, both part of the NIH.

Silver Age Yoga recruits already certified yoga teachers and trains them through an intensive certification course on how to teach yoga to seniors. In exchange for a considerably reduced tuition fee for special skills providing certification course they agree to teach a certain number of free yoga classes to seniors as part of their community service (seva).
http://www.silverageyoga.org/outreach.php?PHPSESSID=010d81f15114774e1c221750aa5934da

http://www.peggycappy.com/ Peggy Cappy's work, titled "Yoga for the Rest of Us," focuses on classes that make yoga accessible for those who have health and movement restrictions; while not focused exclusively on seniors, her safe and sensible work lends itself to the senior population. She offers books, tapes/DVS's, and teacher trainings in this method.

www.nof.org. The National Osteoporosis Foundation offers education and information about this condition, including information about prevention, diagnosis, treatments, and exercise approaches.

Journals/Texts

Aging under the Microscope: A Biological Quest, 2002 (NIH publication number 02 – 2756)

Ayurvedic Healing, Frawley, 1982. pp.236-238

Integral Yoga Hatha, Swami Satchidananda, 1995

The Aging Body. The Journal on Active Aging; November December 2003

The Merck Manual of Health and Aging, Merck Research Laboratories, 2004

Yoga and Ayurveda, Frawley, 1999

Yoga for Wellness, Kraftsow, 1999

Fitness Management, November 2005, Stephen A Black, M.Ed.
www.fitnessmanegement.com/FM/information/articles/library/oldadults

Fitness Management, September 2006 Wayne Westcott PhD and Bob Simons, PhD. p.33-39

9. Appendix

Nethra Vyayamam: The Eye Exercises (Integral Yoga Hatha, Swami Satchidananda, 1995)

Vertical Eye Movements

Move your eyes upwards as far as you can, and then downwards as far as you can. Repeat four - six more times.

Horizontal Eye Movements

Using points to your right and to your left, at eye level, move eyes to the far right, and far left.

If you have difficulty with the movement try keeping your raised on each side as guides and adjust them so that you can see them clearly when moving the eyes to the right and to the left, but without straining. Be sure the head remains still.

Repeat four times. Close your eyes and rest.

Diagonal Movements

Choose a point you can see from the right corner of your eyes when you raise them, and another that you can see from the left corner of your eyes when you lower them, half closing the lids. Remember to retain your original posture: spine erect, hands on knees, head straight and motionless.

Look at your chosen point in right corner up, then to the one in left corner down. Repeat four times. Close the eyes and rest.

Now do the same exercise in reverse. That is, first look to the left corner up, then to the right corner down. Repeat four times. Close the eyes and rest.

Circular Movements

Slowly roll your eyes first clockwise, then counterclockwise as follows: Lower your eyes and look at the floor, then slowly move the eyes to the left, higher and higher until you see the ceiling. Now continue circling to the right, lower and lower down, until you see the floor again. Do this slowly, making a full-vision circle. Close your eyes and rest. Then repeat the same action counterclockwise.

At the conclusion of the eye exercises rub the palms together briskly, feel the heat, then cup the palms up over the eyes.

About the Author

Debora Mangala Warner has a Master's Degree in Human Performance and a Bachelor's Degree in Kinesiology. Her coursework included studies in biomechanics, exercise physiology, human development, health psychology, behavior modification, and nutrition. Her certifications include ACSM Health Fitness Instructor and American Lung Association Tobacco Treatment Specialist. She has been training yoga teachers for 10 years, has a Yoga Alliance 200-hour approved teaching school and currently holds an E-500 RYT. Currently she manages a corporate wellness and fitness center and offers private yoga sessions, as well as workshops and certified teacher trainings courses in Structural Yoga.