DEGENERATIVE JOINT DISEASE

OF

THE KNEE AND HIP

STRUCTURAL YOGA THERAPY RESEARCH PAPER

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1. Case Study: Noelle

1. a. Initial Intake: October 18, 2005

Review of Symptoms, Subjective Pain Level, Self-Assessment and Goals

Noelle is an attractive 54 year old woman, married with two children. She holds a key position in a major corporation, where she is one of few female employees. Her daily routine consists of rising early and working long days at the office where she often spends up to twelve hours at a computer or in meetings without breaks. Devoted to her family, she maintains a similar schedule at home, allowing herself little time off for relaxation or rest. Her job is her main source of stress; another is being overweight. She says she does not handle her stress well and is seeking ways to manage it better and improve her overall health. Towards this end, she took some significant steps about four months ago: she began eating a healthier diet, joined a Weight Watchers diet support group which helped her lose pounds, and started an exercise program five days a week: walking, stationary biking, treadmill and upper body weight lifting. Two months ago, she added yoga to this program. As a new and very enthusiastic student, she takes weekly classes and had already begun to implement a home practice on her own.

Noelle has a history of hypertension and long-term chronic knee pain which was diagnosed as degenerative joint disease (DJD) about ten years ago. As an adolescent, she was very active in sports, resulting in a number of injuries to both knees. Over the years, she has received periodic treatment by removal of fluid, various medications, and surgery to the left meniscus in 1995. Her last treatment was in June 2005. All of these interventions have brought only temporary relief. Preferring not to use medication because of the side effects, she currently takes no prescription drugs for DJD but has added vitamins and other supplements to her diet including glucosamine and chondrotin which she feels has helped her symptoms. In May of this year, she began to experience pain in her right hip, coincidentally with renewal of her exercise program. The pain level has gradually increased since then. She has had no previous treatment for her hip.

Noelle reports daily pain of variable intensity in both knees and her right hip. Sometimes she has to avoid exercise and recreation, and even walking can be difficult. Stiffness is more pronounced in the morning, swelling and occasional inflammation of knees (not hip) in the afternoon. Symptoms increase with prolonged exercise and activities such as sitting, standing, kneeling and climbing stairs; rest helps. Hip pain is her primary complaint. Pain is felt in the buttock, groin, and lateral thigh and sometimes across to the medial knee; occasionally, there are sensations of “pins and needles” or numbness. She rated her pain as “7” on as scale of “1” (mild) to “10” (severe). Her knees are of secondary concern, currently less painful than her hip: she rated them as “4” on the left and “5” on the right. Concerned that her condition might worsen and lead to further surgery, she scheduled a SYT evaluation. Besides pain relief, stress reduction and exercise, she hopes that yoga will help her “develop a healthier attitude towards her body through strengthening which helps her better about herself overall.”

1. b. Physical Assessment and Posture Body Reading

Noelle's body reading revealed a rotation to the right side and an elevated left shoulder. During standing and walking, she tended to shift her weight to the right, a habit she says she has acquired after repeated sports trauma and knee surgery. Her gait was somewhat uneven and she walked with a slight limp. Transfer of weight from sitting to standing, and to and from the floor, as well as climbing stairs, is challenging. She reported tightness in the left lumbar region but no back pain. The sacroiliac exam found minimal movement upward on the left side and none on the right. Scoliometer readings revealed an "S" spinal curve: a left mid-thoracic curve of 3 degrees at T6-7 and a right thoracic-lumbar curve of 6 degrees around T11-12 to L1-2. Feet are somewhat turned out and external rotation appeared to be less on the right side. Both knees, especially the right, were swollen and cracked upon flexion.

RANGE OF MOTION ASSESSMENTS	**10/18/05** Right	**10/18/05** Left	**2/23/06** Right	**2/23/06** Left	**6/12/06** Right	**6/12/06** Left
Ankle Dorsiflexion (20)	5	7	12	13	15	16
Ankle Plantar Flexion (50)	60	60	58	57	56	57
Knee Flexion (Prone) (150)	115	110	118	112	125	120
Hip Flexion (Bent Knee) (135)	120	130	125	135	130	135
Hip Extension (15)	10	15	12	15	15	15
Hip External Rotation (Prone) (45-60)	38	45	42	50	48	52
Hip Adduction (Side Lying) (30-40)	32	40	34	38	35	40

MUSCLE TESTING	**11/9/05**		**2/23/06**		**6/12/06**	
	right	left	right	left	right	left
Ankle Dorsiflexion	4	4	4	4	5	5
Ankle Plantar Flexion	5	5	5	5	5	5
Knee Flexion	3	3.5	3.5	4	4	4
Knee Extension	3	3.5	4	4	4	5
Hip Flexion	3	3.5	3.5	4	4	4.5
Psoas	3	3.5	3	3.5	4	4
Sartorius	3	4	3.5	4	4	5
Hip External Rotation (Prone)	3	4	3.5	4	4	5
Hip Adduction	3.5	4	4	5	5	5
Hip Extension	3	3.5	3.5	4	4	4
Gluteus Maximus	1	2	2	3	3	3.5

1. c. Summary of Findings

MUSCLES TO STRENGTHEN	MUSCLES TO STRETCH
Anterior Tibialis	Gastrocnemius, Soleus
Quadriceps	Quadriceps
Adductors, Psoas, Sartorius	Rectus Femoris, Psoas, Sartorius
Gluteus Maximus, Gluteus Medius, Deep Six External Rotators	Gluteus Medius, Tensor Fascia Lata, Iliotibial Band
Hamstrings	

The range of motion (ROM) assessment for both ankles revealed very limited dorsiflexion and greater than standard plantar flexion. ROM for both knees was also limited and muscle testing (MT) painful at end of range in flexion. Testing for hips showed less mobility and strength on the right side; flexion and external rotation caused pain. Psoas, sartorius, TFL and ITB were restricted on the right ; rectis femoris on the left. Isolation tests for psoas, sartorius and gluteus maximus indicated a need to strengthen all of these, especially on the right.

1. d. Recommendations from Initial Assessment: October 18, 2005

The following goals were adopted for Noelle's SYT program: to relieve pain and other symptoms of DJD; improve mobility, strength and vitality; promote joint regeneration; reduce stress and increase relaxation; improve mind-body awareness and self-confidence; and develop inner resources for health, growth, and healing. She was urged to take an active role in her healing process with an orientation that focused on well-being of the whole person, not on disease or disability.

Specific recommendations for an initial SYT practice were given as follows:

- The Sacroiliac Mobilization Series (SIMS) to stabilize the S.I. joint and to release iliopsoas and hip rotators: 12+ repetitions (until movement is smooth and a sense of release is felt); once daily or more often; adaptation for chair use;
- The SYT Joint Freeing Series (JFS), Mukunda's Pavanmuktasana, #1-21 to provide a practice for relief of symptoms when pain and limited mobility are present; increase movement of synovial fluid (for joint repair), ROM and muscle strength, free blocked prana for greater energy and healing, and heighten awareness and "ground" it in the body: 6 repetitions: once daily or more often; slow, gentle movements with harmonized breathing and an intention to heal; adaptations for standing or chair use to minimize kneeling; and, as Mukunda recommended to me: if pain is predominant on one side, begin on the less painful side, "modeling" greater ease of movement for the other;
- Yoga Breathing Exercises to learn correct breathing and regulation of the breath for quieting the mind and strengthening the vital life force (prana): progressing from awareness of breath, to abdominal and diaphragmatic breathing, and then wave breathing;
- Savasana to reduce stress and relax the body/mind for absorption of the benefits

of yoga practice; modified with “legs up the wall” to alleviate swelling in knees; hands placed in Yoni Mudra to return prana to its home in the pelvic cavity;
- Deep relaxation: begin with wave breathing, then do a body scan, and then feel the rising and falling sensations in the body; at least 5-10 minutes (Note: as Mukunda says, become comfortable: if not, reposition “*until you find the optimal placement for your body to surrender to the pull of gravity and your innate “relaxation reflex” Structural Yoga Therapy* p. 241);
- Avoid asanas that increase pain or irritation.

Other recommendations made to support Noelle’s SYT program were:
- Remain active but practice moderation, alternate periods of high activity with frequent rest breaks;
- Avoid any activity or exercise that increases joint stress or aggravates condition; instead of high impact sports or jogging, choose “safe” exercise e.g. walking or swimming;
- Pay attention to what causes pain, listen to the body’s messages and ask for help when needed;
- Revise the office work station to meet personal specifications;
- Choose a healthy diet and increase daily water intake;
- Adopt a weight loss program to help maintain proper weight;
- Develop balanced routines, e.g. regular times for eating and sleeping, for work and relaxation or recreation.

1. e. Results of Recommendations

November 9, 2005

Noelle’s daily practice brought positive results: SI joint movement upward on both sides now (more on the left); sense of greater overall well-being; and decreased pain level (rating: knees “3” and hip “5”).

Recommendations:
- Continue SIMS before JFS;
- Continue JFS: for #1- 5, 7 and 8 add new focus to feel specific target muscles and refine awareness of the breath and prana;
- Modify JFS #1, Ankle Dorsiflexion/Plantar Flexion: perform dorsiflexion, release to neutral, to strengthen anterior tibilais and stretch gastrocnemius and soleus;
- Modify JFS #5:Hip Internal/External Rotation: on right side, bend knee and reduce width of leg swing for greater ease;
- Modify #8 Hip Abduction/Adduction: in center position, emphasize squeezing legs together to strengthen adductors;
- Increase JFS repetitions from 6 to 10: modify number if pain;
- Add intercostal breathing to wave breath to improve capacity and energy;
- Continue relaxation training with body scan and a strong intention for healing, at least 5 to10 minutes;
- Take short “breathing and stretching” breaks throughout the day and bring mindfulness into everyday activities (suggestions given);
- Consider dietary changes for relief of DJD symptoms if needed such as those recommended by Mukunda; i.e. Indra Devi’s diet for arthritis (see Yoga Forums)

and the kechari diet with bentonite for cleansing (see Svoboda, Robert, *Prakriti* p.194).

November 22, 2005

Commitment to regular SYT practice brought continued symptom relief: less pain, stiffness, and swelling, increased SI joint mobility on both sides, improved breathing, energy and self-awareness. Noelle felt "stronger and more stretched." Savasana brought rest and stress reduction.

Recommendations:

- Use SIMS before other exercise and after prolonged activity;
- Continue JFS #'s 1-8, optionally all JFS #1-21, when increased pain or fatigue;
- Guidelines for SYT asanas: adopt a dynamic style as the preferred approach to increase mobility, minimize joint stress, promote the potential for rebuilding cartilage, and free prana for healing; adapt poses as needed with props; practice all postures (except Mountain) as slow, gentle repetitions, 3 to 6 times each (if pain, for two-sided poses, begin on the most comfortable side and respect differences); gradually increase repetitions as strength improves and decrease, if irritation or pain; in all asanas**,** practice non-harming; and cultivate a feeling of ease, steadiness, relaxed effort, and opening to prana;
- Mountain to correct habits that create postural imbalances, develop poise and provide a foundation for other postures; with intention to open to inner guidance
- Warrior I to strengthen adductors, sartorius, and quadriceps and to stretch gastrocnemius, soleus and TFL;
- Side of Hip (use wall or blocks for stability as needed) to strengthen psoas, adductors and sartorius, and to stretch gluteus medius; follow with option to hold for 3 breaths if comfortable;
- Pelvic Tilt and Thrust to tone and release the psoas, practiced independently first (6-10 reps), then combined sequentially with Rolling Bridge;
- Rolling Bridge (with feet turned out and emphasis on maintaining pelvic thrust) to strengthen gluteus maximus and hamstrings and to stretch rectus femoris, psoas and sartorius;
- Abdominal Twist to strengthen adductors and to stretch gluteus medius, TFL and ITB; if comfortable, follow with optional holding 3+ breaths; use wave breathing to promote deep relaxation;
- Energy Freeing Pose (with hands at back of knees) to strengthen hip flexors (psoas, adductors and sartorius) and stretch quadriceps;
- Half Locust to strengthen hamstrings, gluteus maximus and quadriceps and to stretch rectus femoris, psoas and sartorius (hip flexors) in two parts: 1) hip extension with knee extension; 2) variation with leg turned out to strengthen external rotators;
- Continue Savasana, wave breath with intercostal breathing, and deep relaxation;
- Use sequence of Pelvic Tilt and Thrust, Rolling Bridge, Abdominal Twist, Energy Freeing Pose and Savasana as a stress reduction/relaxation break.

February 23, 2006

A second SYT assessment showed significant improvement: increased ROM and muscle strength in all areas, decreased frequency and level of pain (rating: knees "1" and hip "3), stabilization of SI joint. Noelle was pleased to report that she could now practice the SIMS on the floor instead of a chair. She felt more positive about her body, "more flexible, longer, leaner and stronger" and more optimistic about managing her DJD. She had been gradually increasing her SYT practice; it was now one hour daily*:* asanas, 45 minutes; breathing and relaxation, 15 minutes*.* With practice, DJD symptoms decreased; without practice, they increased. Yoga had become an integral part of her life and she was directly experiencing it as the instrument capable of transforming her pain. Since her condition had greatly improved, I introduced some holding of asanas but with priority still given to dynamic style.

The following recommendations were given:

- SIMS as needed for hip pain with option for sitting on floor with props;
- Modify JFS #4 Knee Extension/Flexion: without arms, to strengthen hip flexors (psoas) and quadriceps;
- Modify JFS #5 Hip External/Internal Rotation: with straight knee and foot off floor, to strengthen external rotators (psoas) and gluteus medius;
- Guidelines for holding asanas: first, practice dynamic poses; second, explore holding for up to 3 breaths if a sense of release is felt, focus on "target" muscles and make adjustments to maintain ease; stop, if any pain or irritation;
- Combine Warrior I and Side of Hip as a vinyasa, alternating knee flexion (to strengthen hamstrings and stretch quadriceps) with knee extension (to strengthen quadriceps);
- Vary Rolling Bridge with dynamic "pulsing," maintaining pelvic thrust throughout 3-6 repetitions;
- Add optional holding of Energy Freeing Pose to enhance release of tension and promote vitality;
- Add Warrior II (with increased hip width side-to-side) to strengthen hip external rotators (deep six rotators, gluteus medius), quadriceps and anterior tibialis and stretch gastrocnemius and soleus: alternate knee flexion (arms raised) with knee extension (arms lowered);
- Add Downward Dog to strengthen psoas, quadriceps and anterior tibialis and stretch gastrocnemius/soleus in three parts: 1) the "dog walking" #1:flex one knee while extending the other, 2) the "dog walking" #2: flex both knees, then extend both, 3) the "dog staying": hold the pose with both knees extended;
- Ujjaye pranayama to improve concentration, calm the mind, and deepen connection with prana: for use with asana to keep awareness in the body and on the breath and with relaxation to deepen the experience.

April 4, 2006

Despite a very stressful month at work, Noelle said she was coping better than usual with the help of her SYT program: her knees and hip felt very good; pain was more intermittent and usually mild. Stiffness and swelling were down. Interested in developing a meditation practice, she enrolled in a course based on Jon Kabat-Zinn's University of Massachusetts Medical Center Stress Reduction Clinic program. The

session included review of instructions and practice of relaxation and meditation techniques.

Further recommendations were given:

- Vary Half Locust: after hip extension, alternate knee extension with knee flexion to strengthen and stretch quadriceps;
- Add Upward Stretched Legs to strengthen hip flexors and quadriceps and stretch gastrocnemius and soleus in two parts: 1) single leg lifts raised directly above hips (other foot on floor) and 2) both legs raised together as described on p. 212, SYT; dorsiflex ankle(s) after raising leg(s) to strengthen anterior tibialis;
- Strengthen use of ujjaye pranayama in asana and relaxation practice;
- Increase time spent in yoga nidra and/or sitting meditation (instructions for both were reviewed and practiced);
- Bring affirmations into deep relaxation to avert negative tendencies.

May 8, 2006

Noelle arrived feeling overextended and said she was not sleeping well. Her Weight Watcher's group had ended and I supported her wish to find another group to help with weight loss. Despite increased pressures at work and home, she had begun walking again to augment her exercise program and was continuing her yoga practice. Our session focused on re-establishing priorities, developing options and restoring balance.

Recommendations added were:

- Adopt a lighter, more "relaxed" approach to yoga practice; instead of goal-setting, focus on process and intentions;
- Adjust the practice in response to changing needs: vary the amount of time, content and focus, e.g. asanas to increase energy or reduce stress ; more pranayama and yoga nidra, fewer asanas (specific suggestions given);
- Practice abdominal breathing with Yoni Mudra and body scan to aid sleep;
- Practice sitting meditation (15-20 minutes daily) preceded by awareness of breathing and ujjaye pranayama;
- Take more breaks at work using SYT practices (specific examples given);
- Bring mindfulness into daily activities like walking and eating (techniques given);
- Gave Mukunda's suggestions for a walking program to help with weight loss ("Overweight," Yoga Forums, 1/31/02).

May 31, 2006

This session had been set for the final SYT assessment, but I cancelled the exam when Noelle arrived feeling stressed and very tired. Because of her deep need to relax, I refocused our session on methods for relieving stress and restoring prana. I guided her in a practice that used many of the elements from Mukunda's "Sequence for a "Complete Sadhana Practice." We began with an invocation to yoga, followed by self-observation and preparatory JFS exercises, then asanas with guided breathing, both dynamic and holding, ujjaye pranayama, deep relaxation with mental imagery and ended with a closing prayer of thanks to her inner teacher. I also incorporated some assisted

postures and imagery techniques from Phoenix Rising Yoga Therapy in which I am certified. During the session, Noelle was able to release tension and experience a more relaxed body and happier, more peaceful state of mind. To help her practice, I gave her a copy of Mukunda's sadhana guidelines and a tape I had made with guided instructions for a body scan and sitting meditation.

June 12, 2006

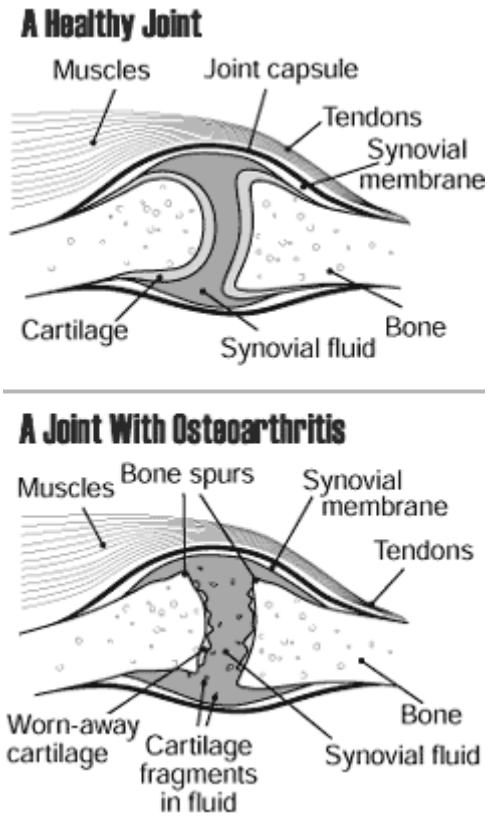
Noelle arrived for the final assessment meeting smiling and relaxed. She reported "feeling great" and had no pain in her hip or knees. Testing for ROM and muscle strength showed dramatic improvement in all areas and a number of postures that previously caused pain were now comfortable.

Based on this, variations of former poses and some new ones were introduced as follows:

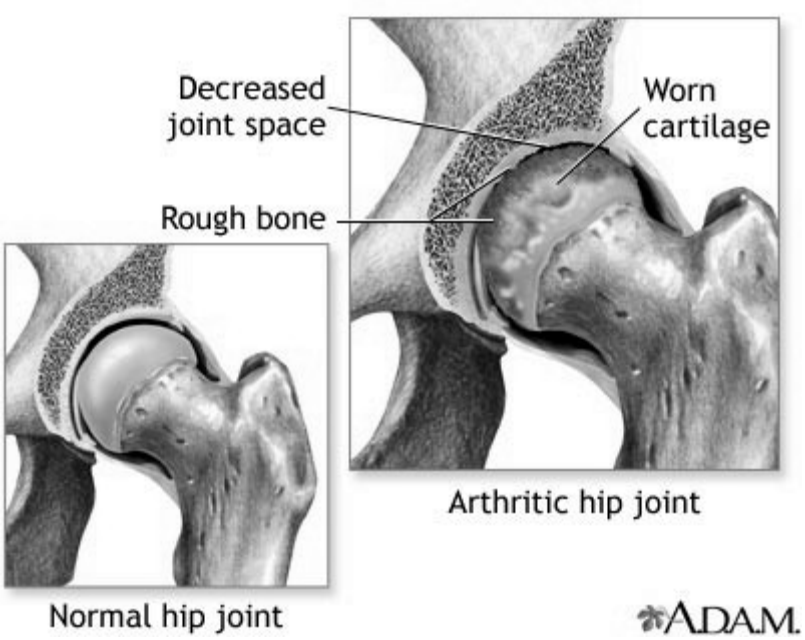
- Cross-legged sitting (easy pose): use firm blanket or cushion under buttocks and prop knees; make adjustments to relieve strain, avoid prolonged sitting, and use a chair for lengthy meditation practice;
- Bound Angle with knees propped and heels farther away from groin to strengthen external rotators;
- Runner's Stretch with options to modify using a chair, blocks or hands on thigh, and with a pad under knee to stretch psoas and stretch and strengthen quadriceps;
- Head to Knee with prop under bent knee and foot against lower leg to strengthen external rotators and rectus femoris;
- Add Complete Boat modified with hands at sides of hips for support and knees in flexion with feet raised a few inches off the floor to strengthen hip flexors, transitioning to and from Boat by use of seated Stick (with added dorsiflexion) to strengthen psoas, quadriceps, and anterior tibialis;
- Vary Upward Stretched Legs: 1) single leg lifts "halfway" up (about 45 degrees) to strengthen quadriceps and 2) with both legs raised: squeeze thighs to strengthen adductors;
- Vary Abdominal Twist: alternate knee flexion with extension (leg propped if needed) to increase stretching of ITB; add optional holding of knee in extension;
- Add "Supine" Tree pose: bring one leg into hip flexion, then external rotation with foot on the floor to strengthen hip flexors and external rotators; keep pelvis stable.

Overall Noelle found that the SYT program met her personal goals. She was learning to restructure her yoga practice according to her needs and to develop a more well rounded sadhana which included the use of Mukunda's introductory and closing mantras and prayer. Future work would involve periodic re-evaluation and could include addressing these potential areas: scoliosis and other postural imbalances; a vinyasa practice for weight loss and aerobic conditioning (e.g. surya namaskar); further pranayama such as kapalabhati to tone abdominal muscles, aid digestion and weight loss; and continued exploration of a meditation or spiritual practice.

2. a. Name and Description of Condition

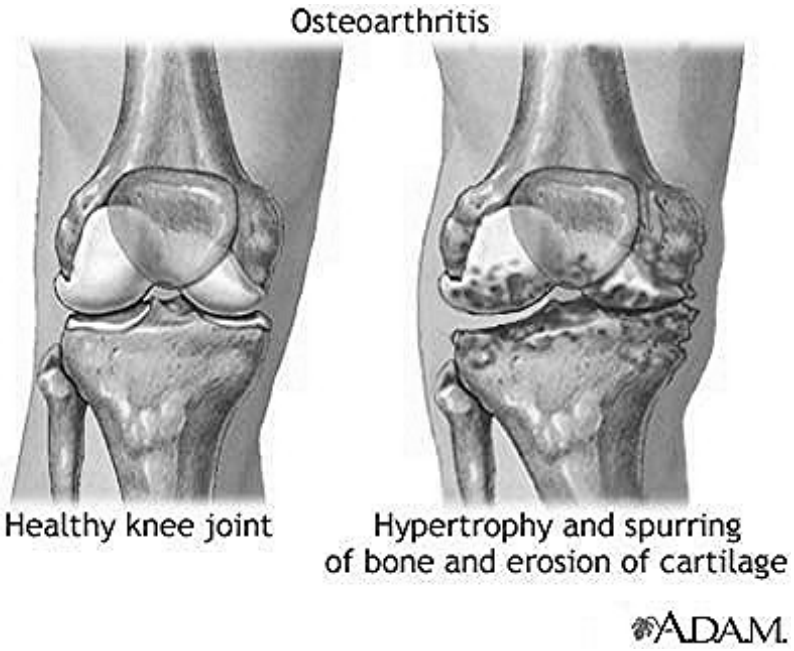


Degenerative joint disease (hereafter abbreviated as "DJD") is categorized by the National Institute of Arthritis and Musculoskeletal and Skin Diseases as one of a diverse collection of more than 100 rheumatic diseases (commonly called "arthritis") that cause pain, stiffness and swelling in joints, and may also affect other areas of the body, primarily sites of connective tissue, and is the major cause of disability in adults over 65 years of age in the United States. As the most common form of chronic joint disease, DJD (also often called "osteoarthritis") affects an estimated 21 million Americans, mostly middle-aged or older. Prevalence increases with age and accounts for much of the disability in lower extremities among the elderly. DJD has a propensity for occurrence in weight bearing joints. The knee is the most common joint but also the hip, spine and hand. Less frequent sites are the ankle, wrist and shoulder. The disease is usually asymmetric but many people experience it in more than one joint. About 5 percent of Americans have DJD of the hip or knee with 9.5 percent of adults over 62 of the knee, causing some people to elect hip and knee surgery. In fact, more than 70 percent of all hip and knee replacements performed are due to DJD.



DJD is chiefly characterized by breakdown of the articular (joint) cartilage, connective tissue which covers the ends of bones and protects the underlying joint from the stress of gravity caused by weight-bearing and the friction of movement.

When degeneration begins, the body responds naturally to rebuild cartilage. This process may postpone the onset of symptoms for years; but with continued erosion, the



body is unable to keep up with the demands of repair. While the key to healthy joints is cartilage, progressive loss can lead to pathological changes and deformity in the entire structure including: worn and irregular joint surfaces, gelling (solidifying) and cracking of cartilage, bits of floating cartilage or bone in the joint space, hardening (sclerosis) or fractures of underlying (subchondral) bone, narrowing and/or elimination of joint space, bony outgrowths or spurs (osteophytes) at joint margins, bone cysts, bursitis, laxity of tendons and ligaments, and atrophy of muscles. Over time, these changes cause pain and reduced mobility in diseased joints, and may also adversely affect peripheral joints, as well as areas of the muscular-skeletal, vascular and nervous systems.

Risk factors include advanced age, female gender, above-normal weight, joint stress due to occupational overuse or improper biomechanics, joint trauma caused by accident or by activities with high impact exposure such as contact sports (note: low-to-moderate levels of sports activity including recreational jogging are not associated), and other rheumatic diseases (e.g. inflammatory arthritis), endocrine disorders (e.g. diabetes, obesity, thyroid), metabolic joint disease, and congenital structural abnormalities. Other associative factors are heredity, hormonal and nutritional deficiencies, improper diet and food allergens, sedentary lifestyle and lack of exercise, excess weight and dehydration.

2. b. Gross and Subtle Body Common Symptoms

The most common symptoms are joint stiffness and pain. Hip DJD is mostly a non-inflammatory disorder, while knee DJD often exhibits inflammation of varying degrees and sometimes swelling. In the early stages of disease, onset of pain is usually gradual, of mild intensity and intermittent, and may remain so for a period of years. Pain is brought on by joint usage and aggravated by increased activity involving excessive repetitive movement and strenuous, prolonged weight-bearing activity like standing, walking, climbing or squatting. Periods of rest and inactivity bring relief. Stiffness and higher levels of pain tend to be more pronounced in the morning and also after periods of inactivity. Barometric changes like dampness and wet weather often increase aching of joints. Crepitis (creaking) and tenderness may be felt in joints.

Initially, symptoms are typically specific to affected joints, e.g. hip pain is often felt in the inguinal groin or anterior hip. Later, they may radiate to adjacent sites, e.g. DJD of the hip may cause a “lurching” gait that results in back pain or misalignment of knees. Since

DJD indirectly alters biomechanics of other anatomical structures (i.e. muscles, ligaments, nerves and veins), overuse of alternative muscle groups can lead to muscle spasms, shortened tendons, overstretched ligaments, and pain syndromes involving weakness and sensory loss. Other associated changes have been mentioned under the description of condition. As the disease advances, pain can persist even at rest. There may be a sense of locking or grinding with joint motion, and buckling or instability of joints during demanding physical tasks. The chronicity of symptoms, including stiffness upon awakening in the morning, can discourage mobility and spurs a vicious cycle of pain, decreased functioning and fatigue. As increased demands are made on energy, the ability to carry out even simple everyday living activities becomes more difficult and, paradoxically, leads to increased pain.

2. c. Related Challenges

DJD is a complicated condition with numerous challenges that include chronic pain and reduction (or loss) of physical functioning, capacity to perform work, social and leisure roles, and ability to care for oneself that can necessitate long-term treatment. Limitations in mobility and activities of daily living are evidenced by self-restricted movement, lack of exercise, reduced walking speed and efficiency, poor aerobic capacity, difficulty climbing stairs, transferring in and out of chairs, cars, and toileting facilities, and dressing and grooming the lower body. Obese and overweight people face the added challenge of weight loss, as excess body weight creates increased joint stress and accelerated disease; similarly, other coexisting chronic conditions can compound disability. And while exercise is needed to maintain healthy joints and mobility, stiffness and pain discourage people from exercising and cause them to limit activity.

The burden of coping with the symptoms of disease and restrictions in lifestyle brings increased stress which can lead to fatigue, loss of sleep, anxiety, depression and other illness. These factors can make pain and other symptoms feel worse and more difficult to tolerate. The fear of more pain and further limitation can bring a loss of hope along with inability to help oneself which supports the cycle of degeneration, pain, dysfunction and disability.

The foregoing entails the need to address multiple factors, make adjustments to change in many areas of life and become very proactive in the treatment process. This is yet further complicated by commonly held beliefs about the disease and how it can be treated. As noted, conventional medicine considers DJD to be an inevitable byproduct of aging, caused by gradual “wear and tear” on the joints leading to a likely prognosis of increased degeneration and disability over time. Thus, allopathic treatment focuses on management of symptoms with recommendations that may include medication, exercise, rest, heat and cold therapies, and joint protection techniques but most frequently are simply medication and surgery, with mixed results e.g. significant limitation in ROM, joint components wearing out over time, prosthetic failure, lengthy post-operative recovery, and pharmacological side effects including ulcer, liver or kidney failure, and potential acceleration of joint deterioration.

Unlike conventional medicine which regards DJD as a localized and incurable disease primarily calling for a management approach, alternative medicine, such as Ayurveda, and yoga therapy see the condition as a systemic disorder. From this perspective, management is important, but efforts focus on approaches for prevention and possible

reversal of the disease. We now know that the joint cartilage of patients with DJD is highly metabolically active. The damaged cartilage tissue actually *tries* to remodel and repair itself. Though once thought to be impossible, arresting or reversing the disease occurs spontaneously in some patients. Yoga and Ayurveda seek to stimulate the body's own processes, unblocking the flow of energy and the circulation, restoring balance and health. For yogic therapeutic purposes, the restoration of balance is the path to health. In this regard, perhaps the greatest personal challenge is learning how to adopt a different attitude towards the disease – one that reflects a new model for coping and healing based on wellness rather than illness.

3. Ayurvedic Assessment and Ayurvedic-based Yoga Recommendations

The three great cosmic forces of energy, light, and matter, when imbued with prana, create the three doshas. *Yoga & Ayurveda*, pp. 37-38. For the ayurvedic practitioner, the goal is to balance these three fundamental biological properties. Ancient ayurvedic texts state that "if excess vata is vitiated all over the body there is quivering and creaking pain in limbs and joints, as if cracking" (*Caraka Samhita* Ch. 28, V26) and that, "vata if localized in the joints causes loss of function, pain and crackling sounds"(*Madhav Nidan* Ch. 22, V21). Thus the very nature of DJD is classically vata. As the subtle energy associated with movement, vata is composed of air and space; its attributes are cold, dry, rough, and flowing. From an ayurvedic perspective, vata imbalance causes inadequate digestion, building up toxins (ama) in the colon (vata's home organ) which then lodge in bone tissue and joints, causing the stiffness and pain so symptomatic of DJD; energetically, the life force, prana, becomes blocked or deficient leading to degeneration and dysfunction – loss of fluid and fluidity at joints, weakening of tissues, and pain. In fact, vata is synonymous with prana (pranamaya kosha) and the energy of thought in the mind (manomaya kosha): disturbance is, therefore, associated with low energy, fear, anxiety, and mental or nervous disorders.

To address a DJD vata imbalance the primary mode of treatment would be diet and exercise, balancing what the body does and what goes into the body. Ayurveda emphasizes right diet, sattvic vegetarian foods, as the foundation of all healing therapies. Vasant Lad gives these general guidelines to prevent vata from accumulating: keep warm; keep calm; avoid cold, frozen or raw foods; avoid extreme cold; eat warm foods and spices; keep a regular routine; and get plenty of rest. *Ayurveda, A Brief Introduction*, p. 3. Specific recommendations might well include Pancha karma and other cleansing practices and very specific dietary guidelines in that Ayurveda has a highly refined association of specific types of food as aggravating or balancing each dosha (e.g. nightshade family as aggravating vata); similarly, prescription of herbs, oils, and preparations might be added for balance and to increase prana (e.g. for DJD, castor oil externally and internally, Mahanarayan oil massage). And given the nature of DJD, repeated emphasis should be given to increasing water intake.

For exercise**,** yoga asana is the main tool because its purpose is to free and direct energy for improving health, vitality and awareness. Asana also helps reduce rajas, settling prana and the mind. While asana consists of poses and movements which act on our physical posture, it works to correct imbalances in all of the first three koshas: in the physical body (annamaya kosha) through the digestive tract to improve the functioning of agni (digestive fire); in the pranic body (pranamaya kosha) through the respiratory and circulatory systems to cleanse and energize tissues and improve immunity; and in the mental body (manomaya kosha) through the brain and nervous

system to release tension and promote feelings of well-being. As David Frawley summarizes: *Wrong posture therefore aggravates vata primarily and disturbs the entire mind-body complex. Vata accumulates as cold and dryness in the bones and joints, leading either to stiffness and reduced movement or to tremors and disturbed movements. The tension gets transferred to the nerves, leading to insomnia, anxiety, and emotional instability. The nervous system is governed by the spine, so all distortions of the spine will cause corresponding nerve tension and problems, mainly of a vata nature. By loosening the joints through yoga postures, the accumulated vata gets relieved, improving health and awareness on all levels. We can easily observe how fear and stress cause the body to tighten up. Such emotions get held in the bones and prevent our energy from moving freely. Yoga & Ayurveda,* p.210. Asana with full breathing (e.g. particularly Pavanmuktasana, the joint freeing series) and relaxation techniques would, therefore, be the core of initial programming to address DJD

Asana style itself is also important. Done slowly, steadily, and gently asana will tend to reduce vata, increase pranic flow and improve mobility of affected areas. In vata imbalance we are out of the body, not feeling what is happening. Mukunda observes that rhythmic motion with emphasis on the breath can heighten sensitivity and promote stress reduction**,** both critical to addressing vata imbalance. He further notes that balancing vata (and thereby returning the pranas to their home regions) can in fact rectify all the other doshas as well (for which reason yoga sadhana should open and conclude with vata balancing practices and a DJD prescription should conclude with Shavasana, yoga Nidra, or yoni mudra). Mukunda cautions, however, that in releasing pain in vata imbalance, one need to avoid going into pitta imbalance and this is accomplished by employing progressive, gentle, sattvic breathing, and relaxing effort.

Pranayama treats all the doshas and in that its right practice normalizes vata, it should be an integral part of ayurvedic treatment of DJD: Ujjaye breathing, for example, reduces vata. And, finally, a regular meditation practice can have a significantly impact on reduction vata related stress and mental confusion. Perhaps most importantly, meditative practices are entry into the deepest limbs of yoga and re-establishment of harmony between all five koshas.

4. Common Body Reading

In early stages of DJD, there may be no obvious signs from a visual reading of the body except during reaction to pain, therefore, body reading should be done with the client both standing and moving. Walking, climbing stairs, and transferring weight to and from chairs or the floor should be observed. As the condition progresses, postural imbalances are more likely to be revealed as the individual repositions the body or restricts movement to guard against actual or anticipated pain. Stance may exhibit instability or weakness, and the body may lean to one side. Walking may reveal an uneven gait, buckling, and a limp or lurching movement. One hip may be higher, one leg longer, or one foot more turned out. There may also be low back or sciatic pain and likelihood of sacroiliac joint dysfunction.

Examination of affected joints may show tenderness, bony enlargement, misalignment and locking during motion. Knees may reveal swelling and mild to moderate warmth, indicative of inflammation, much more often than in hips. Significant loss of space in the medial knee can lead to a bow-legged condition (genu varum); in the lateral area to a knock-kneed condition (genu valgum). Secondary abnormalities, pain and decreased

mobility may also be present in joints above and below the primary site and, therefore, these areas should also be evaluated.

ROM testing may elicit crepitis (cracking) and pain. When pain is accompanied by tingling, numbness or sensory loss, nerve involvement or some other pathological process may be present and the yoga therapist should recommend a medical examination be done. ROM for any joint movement is likely to be reduced by pain, muscle spasms, and other abnormalities caused by degeneration. Muscle weakness is not always present in lower extremities due to their general muscle strength, but these same factors can affect strength over time. If only one joint is affected, that side is likely to show less range and greater weakness and/or tightness. Pain is often felt at the end of ROM. Knees typically have limited ROM for flexion and muscle testing often reveals weak quadriceps. Hips may have decreased ROM and muscle strength in any or all of the muscle groups responsible for movement. A tendency to protect against pain may contribute to tightness of hamstrings, hip flexors and iliotibial bands.

5. Contraindicated Yoga and Other Activities

Any activity, yoga or otherwise, that increases pain or stress on joints should be avoided; even so-called "beneficial" asanas if they can not be adapted for painless performance. Clients should be educated about not pushing beyond limits in any activity with an attitude of getting over or through pain. The more intense or vigorous forms of practice such as Bikram, Ashtanga or "power yoga" should be avoided because of the heated environment and increased stress to joints. Also, static poses, particularly with long holding, should be discouraged as they can also increase stress and are not supportive of the process of rebuilding cartilage. While no specific asanas are categorically to be avoided for DJD of knees and hips (this would depend on the person), some that may be inappropriate are positions that put knees or hips in flexion and hips in external or internal rotation.

Any exercise that puts sudden high impact or excessive weight-bearing force across the joint should also be avoided i.e. running, jumping, bouncing, aerobics, deep knee-bending and squatting, digging, contact sports, and use of some exercise equipment. Other contraindicated activities include prolonged kneeling, sitting, driving, standing, and climbing. Because sleeping with a pillow under the knees can increase stress on joints during walking, knees should be extended in supine position. Clients should also be informed that poor posture and body positioning and use of non-supportive furniture or footwear (e.g. wearing high heels is associated with knee DJD) foster biomechanical imbalance that contributes to joint degeneration.

6. General Recommendations for the Condition

6.a. Therapeutic/Pain Free

Initially, therapy should focus on moving the affected joints through asanas to promote a return to full range-of-motion, along with strengthening/stretching of weak/tight muscles around those joints. Asana is the main yogic tool for balancing the physical body. The objectives are to quiet the restless mind, relieve pain and stiffness, increase function, energy and stamina, reduce stress and fatigue, and promote the body's natural healing process. The dynamic style is at the heart of therapy for DJD: it not only improves

circulation and prana to release toxins and heal tissue but enhances sensitivity and is soothing, critical to DJD systemic imbalances.

If hip or back pain is present, the Sacroiliac Mobilization Series, which can be adapted for chair use, should be given for practice before other asanas once daily, or more frequently as needed; and as Mukunda instructs, clients should look "*for a feeling of release (kriya) in the tissue, energy or emotion that will react to the motions*."

The Joint Freeing Series (JFS) should be given for relief of pain and other symptoms and to support the mechanisms of moving synovial fluid within the joint capsule for protection and growth of cartilage. Practiced as slow, steady, gentle dynamic repetitions with harmonized breathing, Mukunda notes the JFS is particularly beneficial for those with limited mobility due to arthritis. Often this series is all they need to relieve their worst symptoms. All poses can be adapted to the individual but the whole series should be practiced in the prescribed sequence (#1-21), regardless of which joints have DJD, for optimal benefits (see *Yoga Forums*," Joint Freeing Series" 4/26/02). Poses should be performed on the least painful side first.

Restorative poses like Savasana are also very beneficial for balancing prana and promoting stress reduction, relaxation, and a positive mood while supporting the body in a process of gently releasing. After practicing JFS, the client should relax in Savasana with wave breathing to integrate the benefits. At this time, the client may apply yoni mudra over the lower belly or on the site of pain to return prana to its home in the pelvic cavity, thus and restoring vitality and promoting healing. Savasana with legs elevated ("legs up-the-wall") or resting on a chair also helps to reduce swelling in knees.

The addition of other yogic techniques, such as relaxation techniques, pranayama and meditation, following asana practice, deepen the therapeutic process for DJD. Deep relaxation is profound at many levels, not just for healing the body but even for reshaping the personality and direction in life along positive lines. Pranayama should be employed to achieve balance and reduce pain. With inexperienced clients, the preliminary foundation of pranayama can be laid by sequencing breathing exercises to strengthen and extend respiration (see *Structural Yoga Therapy,* pp.48-55). For clients who are familiar with these exercises, it is still beneficial to review and reinforce this basic foundation for therapeutic, pain-free purposes. And the effective use of meditation for pain management and symptom reduction has been well documented.

Referrals can be made to other specialists for various needs, e.g., medical treatment, diet and detoxification; psychological counseling, body or energy work; nutritional therapy and supplementation with vitamins and herbs, etc. One supplement being used for symptom relief and potential rebuilding of cartilage is glucosamine and chondroitin. Some clients may also want to try self-massage with warm oils or application of packs to soothe painful joints (see 3. Ayurvedic Recommendations).

The yoga therapist should educate the client about therapy for DJD from a yogic perspective and give guidelines for when and how to practice (see *Structural Yoga Therapy*, pp. 29-42). Guidelines should be given for the most significant "do's and don'ts" for DJD. Mukunda further advises increased hydration (drinking half one's body weight in ounces).

6.b. Stabilize Situation and Lifestyle Change

Earlier therapeutic/pain free recommendations (6a) that are beneficial should be continued, i.e. the SIMS when hip or back pain occur, and the JFS with option to increase repetitions or add variations. Renewed emphasis can also be given to breath and prana. As the condition stabilizes, variations of JFS poses that focus on strengthening (SYT, p.p. 173-178) and other specific SYT asanas can be prescribed. As needed, other beneficial poses may be introduced but should be modified with adaptations using a wall, chair, or props, or variations done standing, sitting or lying. New asanas should be introduced gradually, with great emphasis on any addition or increase being steady and comfortable. As strength and stamina improve, the number of repetitions may be gradually increased for individual asanas within appropriate limits for the client. Static holding of poses should be discouraged for DJD and joint healing purposes but holding with specific guidelines can be explored if adequate progress and pain reduction have occurred.

If the client is progressing with breathing exercises, introduction of other techniques, first ujjaye pranayama for calming the restless mind which can also be added to asana practice. Pranayama, if already introduced, can be expanded but only by an experienced therapist.

At this stage, the concept of developing a healthy lifestyle by adopting habits that may prevent or retard DJD can be introduced, including remaining active through regular exercise and maintaining a proper body weight. For overweight individuals, the critical factor of weight loss should be reinforced and referrals for dietary or nutritional counseling made if motivation can be aroused. This may be an appropriate context to introduce the yamas and niyamas which would support many of the recommendations. A mild to moderate exercise program such as walking, swimming or other water or other fitness activities that are easy on the joints and are smooth rather than jarring, can be gradually introduced or increased.

Two diets recommended by Mukunda may be of help in relieving pain and symptoms of DJD. One is the “Arthritis” Diet of Indra Devi (see Section 7, Yoga Forums). Another is Kechari, a major Indian diet, which can be supplemented with Bentonite clay for cleansing, including removal of toxins from the joints. Fasting and other detoxification (see Section 3, ayurvedic based recommendations) can be central to treatment of DJD but should be done with the advice of a knowledgeable practitioner.

6.c. Maintenance and Long Term Consideration

Therapeutic goals should be periodically revisited with clients and revised. New asanas may be introduced to vary the practice while maintaining the recommended sequencing, even if some poses are omitted: the sequence “*brings circulation through the body in the pattern of the five prana’s motion …*’” Yoga Forums, Asana Sequencing, March 23, 2005. The practice may be modified to address other considerations, for example, a Vinyasa sequences (e.g. a modified Surya Namaskar) for cardiac conditioning, weight loss, to offer increased aerobic exercise and for strengthening. Other asana combinations might alternatively be selected to increase energy, awareness, and inner stillness. The yoga therapist should further explore, support and help refine the client’s meditation or yoga Nidra practices. Similarly, the pranayama should be reviewed for

refinement, with emphasis always on slowing more, lengthening more, becoming progressively more conscious of its subtlety.

Because DJD is a complex and chronic disease, one can expect the cycle of wellness and illness to ebb and flow. Even when people are highly motivated and making progress, relapses in commitment or condition will likely occur. Clients should, therefore, be forewarned and advised to vary their practice, including a return to earlier more gentle practice like the JFS or spend more time on relaxation or meditation. Similarly, having a support system is very important for continued commitment to one's therapeutic goals. While support can come from individuals (e.g. a family member, friend, or counselor), it can often best be achieved in groups, e.g. yoga or weight loss class, a local sitting meditation group. Besides the personal connection, the support person or group can act as a kind of coach or model and afford a contagious energy. The yoga therapist may also take on the role of a mentor, providing encouragement and coaching: creating a personal vision of oneself, for example, can be used to bolster discipline, intention and energy; supportive attitudes can be reinforced, such as patience, non-judging, and acceptance.

Clients often need to be reminded to lighten up. Particularly during relapses, the practices and life can easily become pretty grim. Clients should be coached to remember the importance of cultivating humor, spending time with people and in activities that are enjoyable, appreciating what they have and the good things that are given. In the same vein, confiding our struggles and asking for help, exceedingly rare virtues need gentle reminder.

Finally, the yoga therapist should support personal growth and spiritual development through yoga, making time for meditation, prayer, quiet reflection; offering suggestions like keeping a personal journal or reading inspirational writings and for those who seem to be motivated, reference or explain a complete yoga sadhana. Mukunda outlines a complete sadhana sequence comprised of all of the techniques of classical yoga described in the Sutras by Patanjali (*Structural Yoga Therapy*, p.17). Some or all of these can be given as a personalized program for the client.

7. Questions and Answers from www.yogaforums.com

Posted: Mon Oct 16, 2006 6:52 am Post subject: **Osteoarthritis and JFS**

Q - I did want to share one story with you. One of the class participants has a significant degree of **osteoarthritis** and had been doing a very mild chair yoga which was quite limited. She decided to try the JFS on the floor and to her surprise the first week she was able to do most of it on the mat. She now uses it in the evening before bed and finds it leaves her calm and centered and the quality of her sleep is much enhanced by this asana practice. I know you have seen for yourself how it works for people, but thought you might like to hear about its effects in a setting other than traditional yoga practice. Her's is the clearest case, but several others have clearly benefited as well. Thanks once again for allowing me to use the JFS in my class.

A - Such a wonderful response. Doing it on the floor is the sign of a vata imbalance getting harmonious. In such cases I would also encourage her to do the Yoni Mudra and receive my Tantra lessons at least up to #3. Anyone can receive who just sends email requesting it. It is also very simple yet potent. Blessings. Mukunda

Posted: Thu Apr 10, 2003 3:12 am Post subject: **Osteoarthritis**

As I am still quite young, I am keen to do whatever I can to slow down the degenerative

process. Can anyone give me some advice about which asanas would be most beneficial. Also, does anyone know how effective an anti-arthritis diet is against **osteoarthritis** rather than rheumatoid arthritis? Li
Dear Li,
You can do a search function on this web site to see what other posts have covered this topic. Searching "arthritis" brings up 17 prior posts, including the antiarthritis diet from Indra Devi. You can also search "spondylosis". I have had several students who have reported tremendous relief of arthritic symptoms from a regular practice of the Joint Freeing Series. As your condition relates to the neck, you may need to take extra care and I would recommend that you please post this topic to Mukunda's Q&A for his comments. Hope you find the information which will be helpful for you! Namaste

Posted: Sat Apr 27, 2002 3:08 pm Post subject: **osteoarthritis**
Q: I wonder if you would take the time to address **osteoarthritis** in general.
A: For any form of arthritis I recommend my joint freeing pose series from my book. This is best to do by itself without any other form of exercise for 2 weeks minimum. This can relieve much of the pain. I also mentioned the arthritis diet from Indra Devi, which is a cure. The anti-pitta diet from Ayurvedic diets is recommended as a long-term solution. If you didn't get that I can send it to you.

Posted: Thur Apr 25, 2002 2:12 am Post subject: **hip problems**
Q: (DJD in right hip with pain after car accident)
A: Steeve and Jan - For pain I have found that regular practice of my joint freeing series as described in my book can work wonders. No special adaptation needs to be given except to be sensible for painful motions and do what feels tolerable. A key for relieving pain is to learn to direct prana into the specific joint that you are moving. Prana is said to be stuck in joints and this series mobilizes the prana so that it can return to proper sites in the subtle body and restore your natural state of peace. There is a gentle hands on healing technique for relieving trauma from accidents, the basic formula is from L. Ron Hubbard and is called Contact Assist. A small pamphlet on this method is sold for $3 from Scientology Centers to explain the technique which works wonders even when event was sometime in past. I have modified it based on yogic concepts of pranayama and have been able to release emotional trauma that was from early childhood. (NOTE – I do not endorse Scientology, but this method is quite beneficial).

Losing weight can certainly help make the **arthritis** more manageable. My teacher Indra Devi has a 10-day diet she recommends for **arthritis**. She claims that people who follow it diligently get free of symptoms. She is a glowing example of health at 102! Eat 90% basmati rice and 10% any type of squash only. The food is to be chewed thoroughly. Plenty of water is to be drunk and herbal teas for keeping the bowels moving. Nothing else is to be eaten but you can eat as much as you want. No condiments or other spices. I can give more details of other supplemental advice should you want to follow this suggestion.

knee pain in lunge and others post date Jan 21, 2004
I have a new student with a history of knee trouble. She has **arthritis** in her quad and patella. She also has "trouble" with her right knee. After light yoga practice both knees are sore. She is unable to put her right knee back in lunge because it causes her pain. ...etc... – BP
A: A very challenging situation. The deeper solution might well be to do the **arthritis** diet (search for that topic on this site) as a 10 day cleanse to help remove ama (toxic material) from joints that are in pain. This is the more lasting solution, especially when combined with a regular Ayurveda pitta balancing diet.

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

Degenerative Arthritis post date Jan 12, 2003
Dear Mukunda, I have a sister-in-law who has had 2 back surgeries and 1 hip surgery due to degenerative **arthritis..**. J
A: For someone at this stage of life, who only does walking for exercise the joint freeing series is the best to give her. By emphasizing learning to coordinate the motions with her breath, she can begin to develop more bodily intuitive sensitivity to what she should and shouldn't be doing. I would not give more specifics unless I see such a person face to face. Bursitis is not a condition that responds to stretching. Stretching increases pitta, and bursitis as well as **arthritis** is an inflamed pitta condition. Therefore doing stretching is quite likely to inflame her condition. JFS is much better to be done gently and slowly to her capacity. If she is willing to make some bigger changes I would recommend she undertake Indra Devi's **arthritis** diet, which is basically for all increased pitta conditions. This will make the biggest difference. Details can be found on the archive site for Q & A - www.yogaforums.com then search for **arthritis** diet. Blessings. Mukunda

Join Date: Jan 2002 **arthritis**
... wanted to know if there are other asanas especially for relieving or helping to avoid **arthritis**...
A: Main recommendation I have is to do joint freeing series regularly and find a way to connect to your breathing as you do it. Eventually you can send prana into the joint you are freeing and that will eliminate any pain.

Join Date: Jan 2002 arthritis
Q: (client with DJD and spurs responding to dynamic ROM)
A: What you are doing is good. Vinyasa motions coordinated with breath can release joint pain. My sequence of joint freeing series is important as the specific sequence given there allows the prana to move through its 5 forms to the subtlest, called Vyana. The development is to teach him how to send Vyana Prana into the joint that he is moving. At first showing how to keep attention onto specific joint and visualize its functions anatomically, then progression is made by learning to stay attentive to the feeling of prana as it moves into and throughout the joint. The fifth chapter of the Hathayoga Pradipika describes this as the method of overcoming bad practice and how to generate healing force of prana.

Knees posted Mon Feb 7, 2005
Q: (stiffness in knees with clicking, using JFS) Namaste,
A: I would recommend that you go to my archive site - www.yogaforums.com and do search about knee conditions there you will find my answers to many similar complaints. Also recommend taking glucosamine chondroitin supplements which seem most helpful for connective tissue injury. I cannot say what the injury is without seeing you but suggest you do vata balancing and kapha increasing practices. First is JFS done with rhythmic breathing -- key is not too many times 6-

10 is enough to get the sense of prana flowing into the joint tissue. Definitely the million times recommended in Anatomy of H. Yoga is likely to aggravate by increasing pitta. Do not do much let it heal. In second phase of healing once swelling, tenderness to touch is passed then increase kapha by doing JFS as it says in my book for strength. Think of toning all directions of motion - adduction, abduction, flexion, extension, mildly on rotations (again i disagree with twisting torso with legs planted as in anatomy book as it can stress rotators medial and lateral sides of the knee. These motions are especially likely to aggravate the meniscus or ACL or PCL, the inner knee delicate structures.
To increase kapha safely you should feel the specific muscles you are toning and only do one muscle per asana as in the JFS Strengthening series; holding poses only 6-10 breaths or more specifically as long as you can focus on one muscle awareness. So in bridge tone hamstrings. In Locust tone gluteals. In Virabhadrasana I tone adductors; in Virabhadrasana II tone abductors, like that then you will be safely building tone and power to immune system. Be cautious if you suspect meniscus injury. Do not be aggressive, keep sattvic attitude, not rajasic attitude i am going to heal no matter what (that creates trouble). blessings. Mukunda

Knee replacement posted Fri Mar 21, 2003
Q: (yoga practice for 84 year old client with knee replacements)
A: I think this student has done a great job with maintaining her body. Keeping the hip joint flexible is a tremendous factor for stabilizing the **knees** and the lower back. I would suggest that you focus her attention on strengthening her hip flexor muscles. Those are the psoas, rectus femoris and also include the adductors. I would suggest Warrior II, bridge (standard and **knees** squeezing together), chair pose (Utkatasana), and dynamic runner or lunge pose (SYT pg. 162) in which you inhale and raise pelvis then exhale and lower the pelvis repeatedly to both tone and release the hip flexors (if necessary weight can be held by a chair to facilitate this without stress on the forward knee). Best wishes mukunda

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www.yogaforums.com (structural yoga therapy)
www.yogatherapycenter.org (structural yoga therapy)

9. Appendix

Techniques utilized other than Structural Yoga Therapy:

Phoenix Rising Yoga Therapy was used for a combination of assisted yoga postures (i.e. with physical support and gentle hands-on assistance), energy balancing, and guided breathing, meditation, and dialogue techniques: guidance is offered in a mindful moment-to-moment exploration of the body-mind experience. Rather than giving specific recommendations, engagement is in a process of releasing tension and listening to the inner teacher (intuition) to gain insights for change, healing, and personal growth.

Stress reduction counseling techniques of the Stress Reduction Clinic of Dr. Jon Kabat-Zinn at the University of Massachusetts Medical Center was used to teach the practice of “mindfulness,” a method of self-awareness to help create a healthier, happier, more stress-free life at home and work. Some of the techniques used were sitting meditation, body scanning, walking meditation, and informal ways to apply mindfulness to everyday life activities.

10. Biography

Sue Wall, MPH, Yale School of Medicine, is certified as a yoga instructor by Kripalu Center for Yoga and Health, as a yoga therapist by Phoenix Rising Yoga Therapy, and has studied with Dr. Jon Kabat-Zinn and many other leading teachers of mind-body medicine, yoga and meditation. Sue has received advanced yoga and meditation training in the United States and India and maintains a daily personal practice in these disciplines.