

ARTHRITIS

Yogic Treatment of Disease Research Project

Ananda Seva Yoga Therapy
Santa Rosa, CA

July, 2008

BONNIE PRONSKY

**Yogic Treatment of Disease
Research Project**

ARTHRITIS

I.	Disease/Condition or Aliment Researching:	3
II.	Brief Description of Condition	7
III.	Signs and Symptoms:	9
IV.	Chakra Focal Point (If one Exists):	10
V.	Common Medical Treatments:	11
VI.	Yogic Remedies:	20
	1. Meditations or Visualizations	20
	2. Asanas, Mudras, Bhandas, Relaxation	22
	3. Optimal Yogic Diet Recommendations	27
	4. Lifestyle and other tools	29
 APPENDICES		
	A. Comparison of RA and OA Causes, Conditions, and Treatments	34
	B. Handout on Rheumatoid Arthritis Medications	46
	C. Alternate Asanas	50
	D. Asthi Dhatu: the Bone Tissue	52
	 REFERENCES	 58

ARTHRITIS

I. Disease/Condition or Ailment Researching: Arthritis

While often referred to as if it were a single disease, arthritis is actually an umbrella term used for a group of more than 100 medical conditions that collectively affect nearly 46 million adults and 300,000 children in America alone. While the most common form of arthritis -- osteoarthritis (OA) -- is most prevalent in people over 60, arthritis in its various forms can start as early as infancy. Some forms affect people in their young-adult years as they are beginning careers and families and still others start during the peak career and child-rearing years.

The common thread among these 100-plus conditions is that they all affect the musculoskeletal system and specifically the joints - where two or more bones meet. Arthritis-related joint problems include pain, stiffness, inflammation and damage to joint cartilage (the tough, smooth tissue that covers the ends of the bones, enabling them to glide against one another) and surrounding structures. Such damage can lead to joint weakness, instability and visible deformities that, depending on the location of joint involvement, can interfere with the most basic daily tasks such as walking, climbing stairs, using a computer keyboard, cutting your food or brushing your teeth.

For many people with arthritis, however, joint involvement is not the extent of the problem. Many forms of arthritis are classified as systemic, meaning they can affect the whole body. In these diseases, arthritis can cause damage to virtually any bodily organ or system, including the heart, lungs, kidneys, blood vessels and skin. Arthritis-related conditions primarily affect the muscles and the bones.

Together, arthritis and related conditions are a major cause of disability in the United States, costing the U.S. economy more than \$124 billion per year in medical care and indirect expenses such as lost wages and production - and costing millions of individuals their health, their physical abilities and, in many cases, their independence. And unless something changes, the picture is going to get worse. As the population ages, the number of people with arthritis is growing. (*The Arthritis Foundation's Guide to Good Living with Rheumatoid Arthritis*)

Types of Arthritis

More than 100 forms of arthritis and related diseases exist affecting approximately 46 million Americans today. A complete listing follows:

Achilles tendinitis	Granulomatous arteritis	Polymyalgia rheumatica
Achondroplasia	Hemarthrosis	Polymyositis
Acromegalic arthropathy	Hemochromatosis	Popliteal cysts
Adhesive capsulitis	Henoch-Schonlein purpura	Posterior tibial tendinitis
Adult onset Still's disease	Hepatitis B surface antigen disease	Pott's disease
Ankylosing spondylitis	Hip dysplasia	Prepatellar bursitis
Anserine bursitis	Hurler syndrome	Prosthetic joint infectio
Avascular necrosis	Hypermobility syndrome	Pseudoxanthoma elasticum
Behcet's syndrome	Hypersensitivity vasculitis	Psoriatic arthritis
Bicipital tendinitis	Hypertrophic osteoarthropathy	Raynaud's phenomenon
Blount's disease		

Brucellar spondylitis	Immune complex disease	Reactive arthritis/Reiter's syndrome
Bursitis	Impingement syndrome	Reflex sympathetic dystrophy syndrome
Calcaneal bursitis	Jaccoud's arthropathy	Relapsing polychondritis
Calcium pyrophosphate dihydrate (CPPD)	Juvenile ankylosing spondylitis	Retrocalcaneal bursitis
Crystal deposition disease	Juvenile dermatomyositis	Rheumatic fever
Caplan's syndrome	Juvenile rheumatoid arthritis	Rheumatoid arthritis
Carpal tunnel syndrome	Kawasaki disease	Rheumatoid vasculitis
Chondrocalcinosis	Kienbock's disease	Rotator cuff tendinitis
Chondromalacia patellae	Legg-Calve-Perthes disease	Sacroiliitis
Chronic synovitis	Lesch-Nyhan syndrome	Salmonella osteomyelitis
Chronic recurrent multifocal osteomyelitis	Linear scleroderma	Sarcoidosis
Churg-Strauss syndrome	Lipoid dermatoarthritis	Saturnine gout
Cogan's syndrome	Lofgren's syndrome	Scheuermann's osteochondritis
Corticosteroid-induced osteoporosis	Lyme disease	Scleroderma
Costosternal syndrome	Malignant synovioma	Septic arthritis
CREST syndrome	Marfan's syndrome	Seronegative arthritis
Cryoglobulinemia	Medial plica syndrome	Shigella arthritis
Degenerative joint disease	Metastatic carcinomatous arthritis	Shoulder-hand syndrome
Dermatomyositis	Mixed connective tissue disease (MCTD)	Sickle cell arthropathy
Diabetic finger sclerosis	Mixed cryoglobulinemia	Sjogren's syndrome
Diffuse idiopathic skeletal hyperostosis (DISH)	Mucopolysaccharidosis	Slipped capital femoral epiphysis
Discitis	Multicentric reticulohistiocytosis	Spinal stenosis
Discoid lupus erythematosus	Multiple epiphyseal dysplasia	Spondylolysis
Drug-induced lupus	Mycoplasmal arthritis	Staphylococcus arthritis
Duchenne's muscular dystrophy	Myofascial pain syndrome	Stickler syndrome
Dupuytren's contracture	Neonatal lupus	Subacute cutaneous lupus
Ehlers-Danlos syndrome	Neuropathic arthropathy	Sweet's syndrome
Enteropathic arthritis	Nodular panniculitis	Sydenham's chorea
Epicondylitis	Ochronosis	Syphilitic arthritis
Erosive inflammatory osteoarthritis	Olecranon bursitis	Systemic lupus erythematosus (SLE)
Exercise-induced compartment syndrome	Osgood-Schlatter's disease	Takayasu's arteritis
	Osteoarthritis	Tarsal tunnel syndrome
	Osteochondromatosis	Tennis elbow

Fabry's disease	Osteogenesis imperfecta	
Familial Mediterranean fever	Osteomalacia	Tietze's syndrome
Farber's lipogranulomatosis	Osteomyelitis	Transient osteoporosis
Felty's syndrome	Osteonecrosis	Traumatic arthritis
Fibromyalgia	Osteoporosis	Trochanteric bursitis
Fifth's disease	Overlap syndrome	Tuberculosis arthritis
Flat feet	Pachydermoperiostosis	Arthritis of Ulcerative colitis
Foreign body synovitis	Paget's disease of bone	Undifferentiated connective tissue syndrome (UCTS)
Freiberg's disease	Palindromic rheumatism	Urticarial vasculitis
Fungal arthritis	Patellofemoral pain syndrome	Viral arthritis
Gaucher's disease	Pellegrini-Stieda syndrome	Wegener's granulomatosis
Giant cell arteritis	Pigmented villonodular synovitis	Whipple's disease
Gonococcal arthritis	Piriformis syndrome	Wilson's disease
Goodpasture's syndrome	Plantar fasciitis	Yersinia arthritis
Gout	Polyarteritis nodos	

Osteoarthritis, the most common form of arthritis, is also known as degenerative joint disease and occurs following trauma to the joint, following an infection of the joint or simply as a result of aging. There is emerging evidence that abnormal anatomy may contribute to early development of osteoarthritis. The most disheartening aspect of the disease is that it does not get easily cured through medicine when it is in chronic stages. Research at various institutes of therapeutic yoga in India shows, that with the regular practice of some selected yoga *asana* cures this disease within two months when it is of moderate type. In chronic cases it takes four to five months or more to cure and restore normal health. (The Holistic Care – <http://www.theholisticcare.com/>)

After living with pain and trying to ignore it for a number of months, in March of 2002, I was diagnosed with an autoimmune disease called Mixed Connective Tissue Disease (MCTD). I will experience flare-ups that manifest in different forms, sometimes overlapping, e.g., painful areas of osteoarthritis along with symptoms of Sjogren's Disease, (dryness in eyes and mouth). The Sjogren's may subside for a while and something else will show up. There are days when I feel exhausted and will run a low-grade fever. Some days I have flu-like symptoms. Occasionally a butterfly-shaped rash will form on the bridge of my nose and cheeks. Fortunately, for me, rheumatoid arthritis was ruled out.

As a result of my own autoimmune issues, and the myriad of emotions surrounding it, I've developed a certain sensitivity to people who suffer from diseases that can, and often times do lead to limited mobility. From the time I was a small child, I have always been a very healthy, extremely active and social being. As a child growing up, and into my adulthood, I enjoyed playing sports and loved to dance. Since 1983, I've taught various styles of exercise classes ranging from high-impact aerobics classes; low-impact aerobics classes; step classes; kickboxing classes; water aerobics classes; tai-chi classes; hatha yoga classes; chair yoga for people with arthritis; breathing classes; stress-reduction classes; and meditation workshops. When I have flare-ups, I am reminded that I have this "diagnosis" and my biggest fear is the possibility of losing freedom of movement, and living with constant and chronic pain. It has

become a regular practice of mine to thank God every morning when I wake up, for the ability to sustain my freedom of movement.

Osteoarthritis and Rheumatoid Arthritis

This paper will offer a comparative overview of osteoarthritis and rheumatoid arthritis, two of the more common forms of arthritis. See Appendix A for a detailed comparison of the two forms and their treatment.

Osteoarthritis (OA) is one of the oldest and most common forms of arthritis. Known as the “wear-and-tear” kind of arthritis, OA is a chronic condition characterized by the breakdown of the joint’s cartilage. Cartilage is the part of the joint that cushions the ends of the bones and allows easy movement of joints. The breakdown of cartilage causes the bones to rub against each other, causing stiffness, pain and loss of movement in the joint.

Osteoarthritis is known by many different names, including degenerative joint disease, osteoarthrosis, hypertrophic arthritis and degenerative arthritis. Your doctor might choose to use one of these terms to better describe what is happening in your body, but for our purposes, we will refer to all of these as osteoarthritis.

It is thought that osteoarthritis dates back to ancient humans. Evidence of osteoarthritis has been found in ice-aged skeletons. Today, an estimated 27 million Americans live with OA. Despite the longevity and frequency of the disease, the cause is still not completely known and there is no cure. In fact, many different factors may play a role in whether or not you get OA, including age, obesity, injury or overuse and genetics. Your OA could be caused by any one or by a combination of any of these factors.

There are several stages of osteoarthritis:

- Cartilage loses elasticity and is more easily damaged by injury or use.
- Wear of cartilage causes changes to underlying bone. The bone thickens and cysts may occur under the cartilage. Bony growths, called spurs or osteophytes, develop near the end of the bone at the affected joint.
- Bits of bone or cartilage float loosely in the joint space.
- The joint lining, or the synovium, becomes inflamed due to cartilage breakdown causing cytokines (inflammation proteins) and enzymes that damage cartilage further.

Changes in the cartilage and bones of the joint can lead to pain, stiffness and use limitations. Deterioration of cartilage can:

- Affect the shape and makeup of the joint so it doesn’t function smoothly. This can mean that you limp when you walk or have trouble going up and down stairs.
- Cause fragments of bone and cartilage to float in joint fluid causing irritation and pain.
- Cause bony spurs, called osteophytes, to develop near the ends of bones.
- Mean the joint fluid doesn’t have enough hyaluronan, which affects the joint’s ability to absorb shock.

Rheumatoid Arthritis (RA), affects approximately 2.1 million people in the United States, or 1 percent of the population. It can affect anyone, including children, but 70 percent of people with RA are women. Onset usually occurs between 30 and 50 years of age. It can lead to long-term joint damage, resulting in chronic pain, loss of function and disability.

RA is a chronic autoimmune disease, characterized by inflammation of the lining, or synovium, of the joints accompanied by reduction or loss of joint function, muscle wasting and chronic pain. RA is a systemic disease, which means it can affect other organs in the body. (Arthritis Foundation “Disease Center:Rheumatoid Arthritis”).

There are three stages of progression in rheumatoid arthritis (RA):

- The first stage is swelling of the synovial lining causing pain, warmth, stiffness, redness and swelling around the joint.
- Second is the rapid division and growth of cells, which causes the synovium to thicken. It is in the third stage that the inflamed cells release enzymes that may be responsible for digesting bone and cartilage.
- The third stage is what often causes the involved joint to lose its shape and alignment, more pain, and loss of movement.

RA has features different from other kinds of arthritis. For example, rheumatoid arthritis generally occurs in a symmetrical pattern, meaning that if one knee or hand is involved, the other one also is. The disease often affects the wrist joints and the finger joints closest to the hand. It can also affect other parts of the body besides the joints. There can be a general sense of not feeling well, tired all the time, and occasional low-grade fever.

II. Brief Description of Condition (Pathophysiology and causes from both the western model and, if different, the yogic model):

Known as the “wear-and-tear” kind of arthritis, OA is a chronic condition characterized by the breakdown of the joint’s cartilage. Cartilage is the part of the joint that cushions the ends of the bones and allows easy movement of joints. The breakdown of cartilage causes the bones to rub against each other, causing stiffness, pain and loss of movement in the joint.

What causes osteoarthritis?

Like other chronic conditions, OA has no single, specific cause. Instead, there are several factors involved in the disease, including heredity and lifestyle. It may take a combination of the following factors and possibly others to cause osteoarthritis:

Genes: One possibility is that certain people may have a defect in the gene responsible for the body’s production of collagen, the protein that makes up cartilage. This somewhat rare genetic defect might lead to abnormally weak cartilage that wears down after just a few decades of normal activity, causing osteoarthritis as early as age 20.

Other genetically based traits may result in slight defects in the way the bones and joints fit together so that cartilage wears away faster than usual. The inherited trait known as joint laxity, or double-jointedness, in which the joints bend farther than the usual angles, may also increase the risk for osteoarthritis. Simply inheriting a gene that makes you more susceptible to OA doesn’t mean you will get the disease, however. Your lifestyle – that is, the way you eat, exercise, sleep and whether you have bad habits such as smoking – has a tremendous impact on whether you will develop OA.

Body weight: Your major joints such as hips and knees already bear the brunt of your body’s weight. Being overweight puts even more pressure on these joints. For every pound of body weight you gain, your knees gain three pounds of added stress; for your hips, each additional

pound translates into six times the pressure on these joints. After many years of carrying extra pounds, the cartilage that cushions your joints tends to break down more quickly than usual. Obesity may lead to osteoarthritis on its own, or it may combine with other factors such as your genetic susceptibility to produce the disease and worsen its symptoms.

Some research has shown a connection between being overweight and having an increased risk of osteoarthritis in the hands, but the reason for that connection is unclear. One theory is that excess fat tissue itself produces inflammatory chemicals that travel throughout the body and are capable of causing damage in places other than weight-bearing joints. This theory helps explain the connection between being overweight or obese and joint damage in the hands.

Injury and overuse: Sometimes repetitive movements or serious injuries to joints (such as a fracture or surgery) can lead to osteoarthritis down the road. Some full-time athletes, for example, injure the same joints repeatedly, damaging the joints, tendons and ligaments, which speeds cartilage breakdown.

The constant knee bending required by some types of work, such as landscaping, can make cartilage wear away more quickly than moderate use of those joints.

Others: Several other factors may contribute to osteoarthritis. These factors include other bone and joint disorders like rheumatoid arthritis and certain metabolic disorders such as hemochromatosis, which causes the body to absorb too much iron, or acromegaly, which causes the body to make too much growth hormone. (Arthritis Today: Frequently Asked Questions about Osteoarthritis)

What causes rheumatoid arthritis?

Scientists still do not know exactly what causes the immune system to turn against itself in rheumatoid arthritis, but research over the last few years has begun to piece together the factors involved:

Genetic (inherited) factors: Scientists have discovered that certain genes known to play a role in the immune system are associated with a tendency to develop rheumatoid arthritis. Some people with rheumatoid arthritis do not have these particular genes; still others have these genes but never develop the disease. These somewhat contradictory data suggest that a person's genetic makeup plays an important role in determining if he or she will develop rheumatoid arthritis, but it is not the only factor. What is clear, however, is that more than one gene is involved in determining whether a person develops rheumatoid arthritis and how severe the disease will become.

Environmental factors: Many scientists think that something must occur to trigger the disease process in people whose genetic makeup makes them susceptible to rheumatoid arthritis. A viral or bacterial infection appears likely, but the exact agent is not yet known. This does not mean that rheumatoid arthritis is contagious: a person cannot catch it from someone else.

Other factors: Some scientists also think that a variety of hormonal factors may be involved. Women are more likely to develop rheumatoid arthritis than men, pregnancy may improve the disease, and the disease may flare after a pregnancy. Breastfeeding may also aggravate the disease. Contraceptive use may alter a person's likelihood of developing rheumatoid arthritis. Scientists think that levels of the immune system molecules interleukin 12 (IL-12) and tumor necrosis factor-alpha (TNF- α) may change along with the changing hormone levels seen in pregnant women. This change may contribute to the swelling and tissue destruction seen in rheumatoid arthritis. These hormones, or possibly deficiencies or changes in certain hormones,

may promote the development of rheumatoid arthritis in a genetically susceptible person who has been exposed to a triggering agent from the environment.

Even though all the answers are not known, one thing is certain: rheumatoid arthritis develops as a result of an interaction of many factors. Researchers are trying to understand these factors and how they work together. (National Institute of Health, "Handout on Health: Rheumatoid Arthritis")

"Women get rheumatoid arthritis two to three times more often than men and their RA typically goes into remission when they get pregnant. Women develop RA more often than expected in the year after pregnancy and symptoms can increase after a baby is born. These facts lead researchers to believe that gender might play a role in the development and progression of RA. Many are trying to understand the effects female hormones might have in the development of RA" (Arthritis Foundation "Disease Center:Rheumatoid Arthritis")

III. Signs and Symptoms:

Symptoms of osteoarthritis vary by person, depending on which joints are affected and how severely they are affected. However, the most common symptoms are stiffness, particularly first thing in the morning] or after you have been resting a while, and pain. The most commonly affected joints are the lower back, hips, knees and feet. When those joints are affected you may have difficulty with such activities as walking, climbing stairs and lifting objects.

Osteoarthritis is the most common form of arthritis among older people. (NIH Senior Health, "Arthritis", **first published:** 23 October 2003)

One of the main differences between osteoarthritis and rheumatoid arthritis is that osteoarthritis affects only joints, not internal organs.

Other commonly affected joints are the neck and fingers, including the thumb base. When finger and hand joints are affected, osteoarthritis can make it difficult to grasp and hold objects, such as a pencil, or to do delicate tasks, such as needlework.

Common physical symptoms of rheumatoid arthritis include:

- Fatigue
- Stiffness, particularly in the morning and when sitting for long periods of time. Typically, the longer the morning stiffness lasts, the more active your disease is.
- Weakness
- Flu-like symptoms, including a low-grade fever
- Pain associated with prolonged sitting
- The occurrence of flares of disease activity followed by remission or disease inactivity
- Rheumatoid nodules, or lumps of tissue under the skin, appear in about one-fifth of people with RA. Typically found on the elbows, they can indicate more severe disease activity.
- Muscle pain
- Loss of appetite, depression, weight loss, anemia, cold and/or sweaty hands and feet

- Involvement of the glands around the eyes and mouth, causing decreased production of tears and saliva (Sjögren's syndrome)

IV. Chakra Focal Point:

There can be more than one chakra involved when a person is dealing with a chronic condition. Chakras form a team, and if one member in the team is out of balance, then individual work must be done with that member. Working exclusively with one chakra over too long a period could create fresh team imbalances. This hazard can be avoided by working with one or other of its natural pairs. The solar plexus (third chakra) pairs with the brow (sixth chakra), and the crown (seventh chakra). Each chakra may also be paired with the one directly below or above itself. This is a particularly useful way of working when dealing with emotional issues. (Adapted from Ruth White, Working with your Chakras)

Solar Plexus Chakra

The Solar Plexus Chakra is associated with the color yellow. This is the area which defines our "self-esteem". The personality that develops during puberty is housed in this chakra...otherwise known as the "EGO". Anyone experiencing dysfunction of the third chakra is having difficulty obtaining or maintaining his/her own "personal power". This intuitive chakra is where we get our "gut instincts" that signal us to do or not to do something. Strong self-esteem is a required for developing intuitive skills.

- Associations
 - Color - yellow
 - Physical Location - solar plexus
 - Purposes - mental understanding of emotional life
 - Spiritual Lesson - acceptance of your place in the life stream. (self-love)
 - Physical Dysfunctions- stomach ulcers, intestinal tumors, diabetes, pancreatitis, indigestion, anorexia/bulimia, hepatitis, cirrhosis, adrenal imbalances, **arthritis**, colon diseases
 - Mental and Emotional Issues - self esteem, fear of rejection, oversensitivity to criticism, self-image fears, fears of our secrets being found out, indecisiveness
 - Information Stored Inside Sacral Chakra - personal power, personality, consciousness of self within the universe (sense of belonging), knowing
 - Area of Body Governed - upper abdomen, umbilicus to rib cage, liver, gallbladder, middle spine, spleen, kidney, adrenals, small intestines, stomach
 - Chakracise for Solar Plexus Chakra - Chakracise your solar plexus chakra by dancing (do the Twist, hoola hooping, and belly dancing).
Source: www.chakracises.com
- Feeding Your Solar Plexus Chakra - *Boosting Self-Esteem and Encouraging Self-Love*
 - Granola and Grains: pastas, breads, cereal, rices, flax seed, sunflower seeds, etc.
 - Dairy: milk, cheeses, yogurt
 - Spices: ginger, mints (peppermint, spearmint, etc.), melissa, chamomile, turmeric, cumin, fennel

When you think about your chakra system you probably aren't considering the types of foods that you consume. Because our chakras are energy vortexes and invisible to most of us one might well imagine that chakras would thrive on energy, prayer, or other such spiritual stuff... you know, those things that we can't see with the human eye. However, the chakras cannot sustain our human body without our help. It is important to feed and nourish the flesh in order to help support and fuel our chakras. Whenever one or more of your chakras is misaligned you might do well to look and see if you are not eating or possibly overeating the foods that fuel that

particular chakra. ([Phylameana lila Desy](#), About.com)

Guided Visual Meditation for the Solar Plexus Chakra:

Begin by ensuring that you will be undisturbed, and then find a comfortable position in which to sit or lie ... arrange your body symmetrically and let it relax ... close your eyes and visualize the solar plexus colours ... bright, clear yellow, soft golden yellow, and a gentle rosy pink.... As the colours surround you, they also warm you and your whole body feels more vital ... imagine that you are sitting on a hill top near the sea ... pine trees go right down almost to the water's edge ... there is a bay, with a wide, sandy beach.... The sun is warm and golden and the sea is many colours of blue and bluey green.... It is clear and the waves are gentle.... A little way out to sea is a small island ... covered with pine trees, it seems to be almost perfectly circular.... You make your way down to the beach ... taking in the sounds, the smells and the beauty which surround you.... Take off your shoes and explore the firm sand at the water's edge, letting the gentle ebb and flow of the tide wash over your feet and ankles You look again at the island ... the sun shining on the sea is making a pathway of light over the water towards the island ... and you decide to follow it.... In the way which is possible in dreams and meditations the pathway of light literally becomes a bridge which you can walk over, to reach the island When you arrive there, you follow a path through the pine trees.... It seems to lead towards the centre of the island.... You are wrapped in a deep sense of inner peace ... the ground you are treading seems to be hallowed ground ... as you come to the central point you see that there is a clearing which is perfectly circular in shape.... At the centre of the clearing there is an indentation which has been carefully and beautifully lined with yellow, gold and pink crystals In this crystalline basin burns a strong and steady flame ... as you come nearer you know that you are approaching the very centre of your being.... You find somewhere to sit so that you can watch the reflection of the flame in the crystal hollow ... you feel centred and at peace, in touch with your basic identity ... totally accepted in every way.... You know that this flame is your flame and that it has the power to strengthen and validate your identity, your energy and your sense of purpose in life.... Stay here in silent contemplation for a while.... Then return to the edge of the island ... back across the sunlit causeway ... to the beach ... back into an awareness of your breath in your body, your contact with the ground, your presence in your everyday world.... Remember that you can always return to the place of the flame, when you need inner strength and self-confirmation Put a cross of light in a circle of light over your solar plexus chakra and draw a cloak of white light with a hood around you ... so taking the light into your life with you without being too vulnerable as you resume your normal tasks....

(Working with your Chakras, Ruth White, 2002, Barnes & Noble Books, pp. 70 – 72)

V. Common Medical Treatments

Doctors use a variety of approaches to treat rheumatoid arthritis. These are used in different combinations and at different times during the course of the disease and are chosen according to the patient's individual situation. No matter what treatment the doctor and patient choose, however, the goals are the same: to relieve pain, reduce inflammation, slow down or stop joint damage, and improve the person's sense of well-being and ability to function.

Good communication between the patient and doctor is necessary for effective treatment. Talking to the doctor can help ensure that exercise and pain management programs are provided as needed, and that drugs are prescribed appropriately. Talking to the doctor can also help people who are making decisions about surgery.

Goals of Treatment

- Relieve pain
- Reduce inflammation
- Slow down or stop joint damage
- Improve a person's sense of well-being and ability to function

Current Treatment Approaches

- Lifestyle
- Medications
- Surgery
- Routine monitoring and ongoing care

Health behavior changes: Certain activities can help improve a person's ability to function independently and maintain a positive outlook.

Rest and exercise: People with rheumatoid arthritis need a good balance between rest and exercise, with more rest when the disease is active and more exercise when it is not. Rest helps to reduce active joint inflammation and pain and to fight fatigue. The length of time for rest will vary from person to person, but in general, shorter rest breaks every now and then are more helpful than long times spent in bed.

Exercise is important for maintaining healthy and strong muscles, preserving joint mobility, and maintaining flexibility. Exercise can also help people sleep well, reduce pain, maintain a positive attitude, and lose weight. Exercise programs should take into account the person's physical abilities, limitations, and changing needs.

Joint care: Some people find using a splint for a short time around a painful joint reduces pain and swelling by supporting the joint and letting it rest. Splints are used mostly on wrists and hands, but also on ankles and feet. A doctor or a physical or occupational therapist can help a person choose a splint and make sure it fits properly. Other ways to reduce stress on joints include self-help devices (for example, zipper pullers, long-handled shoe horns); devices to help with getting on and off chairs, toilet seats, and beds; and changes in the ways that a person carries out daily activities.

Stress reduction: People with rheumatoid arthritis face emotional challenges as well as physical ones. The emotions they feel because of the disease—fear, anger, and frustration—combined with any pain and physical limitations can increase their stress level. Although there is no evidence that stress plays a role in causing rheumatoid arthritis, it can make living with the disease difficult at times. Stress also may affect the amount of pain a person feels. There are a number of successful techniques for coping with stress. Regular rest periods can help, as can relaxation, distraction, or visualization exercises. Exercise programs, participation in support groups, and good communication with the health care team are other ways to reduce stress.

Healthful diet: With the exception of several specific types of oils (see [“Current Research”](#)), there is no scientific evidence that any specific food or nutrient helps or harms people with rheumatoid arthritis. However, an overall nutritious diet with enough—but not an excess of—calories, protein, and calcium is important. Some people may need to be careful about drinking alcoholic beverages because of the medications they take for rheumatoid arthritis. Those taking

methotrexate may need to avoid alcohol altogether because one of the most serious long-term side effects of methotrexate is liver damage.

Climate: Some people notice that their arthritis gets worse when there is a sudden change in the weather. However, there is no evidence that a specific climate can prevent or reduce the effects of rheumatoid arthritis. Moving to a new place with a different climate usually does not make a long-term difference in a person's rheumatoid arthritis.

Surgery: Several types of surgery are available to patients with severe joint damage. The primary purpose of these procedures is to reduce pain, improve the affected joint's function, and improve the patient's ability to perform daily activities. Surgery is not for everyone, however, and the decision should be made only after careful consideration by patient and doctor. Together they should discuss the patient's overall health, the condition of the joint or tendon that will be operated on, and the reason for, as well as the risks and benefits of, the surgical procedure. Cost may be another factor. Commonly performed surgical procedures include joint replacement, tendon reconstruction, and synovectomy.

Joint replacement: This is the most frequently performed surgery for rheumatoid arthritis, and it is done primarily to relieve pain and improve or preserve joint function. Artificial joints are not always permanent and may eventually have to be replaced. This may be an important consideration for young people.

Tendon reconstruction: Rheumatoid arthritis can damage and even rupture tendons, the tissues that attach muscle to bone. This surgery, which is used most frequently on the hands, reconstructs the damaged tendon by attaching an intact tendon to it. This procedure can help to restore hand function, especially if the tendon is completely ruptured.

Synovectomy: In this surgery, the doctor actually removes the inflamed synovial tissue. Synovectomy by itself is seldom performed now because not all of the tissue can be removed, and it eventually grows back. Synovectomy is done as part of reconstructive surgery, especially tendon reconstruction.

Routine Monitoring and Ongoing Care: Regular medical care is important to monitor the course of the disease, determine the effectiveness and any negative effects of medications, and change therapies as needed. Monitoring typically includes regular visits to the doctor. It also may include blood, urine, and other laboratory tests and x rays.

People with rheumatoid arthritis may want to discuss preventing osteoporosis with their doctors as part of their long-term, ongoing care. Osteoporosis is a condition in which bones become weakened and fragile. Having rheumatoid arthritis increases the risk of developing osteoporosis for both men and women, particularly if a person takes corticosteroids. Such patients may want to discuss with their doctors the potential benefits of calcium and vitamin D supplements, hormone therapy, or other treatments for osteoporosis.

Medications: Most people who have rheumatoid arthritis take medications. Some medications are used only for pain relief; others are used to reduce inflammation. Still others, often called disease-modifying antirheumatic drugs (DMARDs), are used to try to slow the course of the disease. The person's general condition, the current and predicted severity of the illness, the length of time he or she will take the drug, and the drug's effectiveness and potential side effects are important considerations in prescribing drugs for rheumatoid arthritis. Appendix B shows currently used rheumatoid arthritis medications, along with their uses and effects, side effects, and monitoring requirements.

Biologic response modifiers are new drugs used for the treatment of rheumatoid arthritis. They can help reduce inflammation and structural damage to the joints by blocking the action of cytokines, proteins of the body's immune system that trigger inflammation during normal immune responses. Three of these drugs, etanercept (Enbrel*), infliximab (Remicade), and adalimumab (Humira), reduce inflammation by blocking the reaction of TNF- α molecules. Another drug, called anakinra (Kineret), works by blocking a protein called interleukin 1 (IL-1) that is seen in excess in patients with rheumatoid arthritis.

For many years, doctors initially prescribed aspirin or other pain-relieving drugs for rheumatoid arthritis, as well as rest and physical therapy. They usually prescribed more powerful drugs later only if the disease worsened.

Today, however, many doctors have changed their approach, especially for patients with severe, rapidly progressing rheumatoid arthritis. Studies show that early treatment with more powerful drugs, and the use of drug combinations instead of one medication alone, may be more effective in reducing or preventing joint damage. Once the disease improves or is in remission, the doctor may gradually reduce the dosage or prescribe a milder medication.

(Taken from NIH, "Handout on Health: Rheumatoid Arthritis", Publication Date: January 1998, Revised November 1999, May 2004)

The following review of the comparison of treatments for RA and OA adapted from the Arthritis Foundation. For a more complete comparison of rheumatoid arthritis and osteoarthritis causes, conditions, and treatments see Appendix A below.

Overview	Rheumatoid Arthritis	Osteoarthritis
<p>Treatment options</p>	<p>Because rheumatoid arthritis presents itself on many different fronts and in many different ways, treatment must be tailored to the individual, taking into account the severity of your arthritis, other medical conditions you may have and your individual lifestyle. Current treatment methods focus on relieving pain, reducing inflammation, stopping or slowing joint damage and improving your functioning and sense of well-being.</p> <p>Rheumatoid arthritis is a serious disease. It is crucial that you get an early diagnosis and work with your doctor to find the best treatment for you so that you can live well with it. Just a few years ago, your doctor might have only prescribed an over-the-counter pain reliever, like an analgesic or non-steroidal, anti-inflammatory drug (NSAID), until you experienced increased disease progression. Now, with the improvement of available medications, doctors know that they have to be more aggressive early on in order to prevent severe deformity and joint erosion.</p> <p>Health-Care Professionals In order to get the proper treatment for RA, you need to make sure you have the proper health-care team. Your primary doctor for treating RA should be a rheumatologist (ROO-ma-tall-o-jist), a physician with special training in arthritis and other disease involving diseases of</p>	<p>It is important that you get your osteoarthritis (OA) diagnosed and treated as early as possible. Early diagnosis and treatment is the first step in successful management of osteoarthritis. Your doctor may start you on a drug therapy regime, but ultimately you are the key factor in living successfully with OA. In addition to, and maybe more important than, medications you may take, making healthy lifestyle changes, managing stress and depression, avoiding joint damage, and balancing rest and activity will play a key role in battling the pain and limitations that can come with OA.</p> <p>The goals of any treatment plan for OA include:</p> <ul style="list-style-type: none"> ▪ Controlling pain and other symptoms ▪ Improving your ability to function in daily activities ▪ Slow the disease's progress <p>Most treatment plans will include a combination of the following elements:</p> <ul style="list-style-type: none"> ▪ Exercise ▪ Weight control ▪ Joint protection ▪ Physical and occupational therapy

the bone, muscles and joints. Your rheumatologist will coordinate with your primary care physician. Other team members may include a physical therapist, an occupational therapist, a nurse, a psychologist, an orthopaedic surgeon, a physiatrist, and a social worker. Learn more about these specialists in the Glossary of Health Professionals.

Medications

The proper medication regimen is important in controlling your RA. You must help your doctor determine the best combination for you. The main categories of drugs used to treat RA are:

- **Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)** – These drugs are used to reduce inflammation and relieve pain. These are medications such as aspirin, ibuprofen, indomethacin and COX-2 inhibitors such as valdecoxib and celecoxib.
- **Analgesic Drugs** – These drugs relieve pain, but don't necessarily have an effect on inflammation. Examples of these medications are acetaminophen, propoxyphene, meperidine and morphine.
- **Glucocorticoids or Prednisone** – These are prescribed in low maintenance doses to slow joint damage caused by inflammation.
- **Disease Modifying Antirheumatic Drugs (DMARDs)** – These are used with NSAIDs and/or prednisone to slow joint destruction caused by RA over time. Examples of these drugs are methotrexate, injectable gold, penicillamine, azathioprine, chloroquine, hydroxychloroquine, sulfasalazine and oral gold.
- **Biologic Response Modifiers** – These drugs directly modify the immune system by inhibiting proteins called cytokines, which contribute to inflammation. Examples of these are etanercept, infliximab, adalimumab and anakinra.
- **Protein-A Immoadsorption Therapy** – This is not a drug, but a therapy that filters your blood to remove antibodies and immune complexes that promote inflammation.

DMARDs, particularly methotrexate, have been the standard for aggressively treating RA. Recently, studies have shown

Medications

In severe cases, when the therapies above don't work, surgery may be considered.

Medications

- Most people with osteoarthritis will use drug therapy to ease the symptoms of the disease. Most drugs focus mainly on relieving pain, but some are targeted at other symptoms and slowing disease progression. You and your doctor should work together to find the combination of medications that works best for you. Following are examples of medications your doctor might consider.
- **Analgesics** - Analgesics relieve pain without relieving inflammation or swelling. If you are only interested in pain relief, these drugs tend to have fewer side effects. They are recommended for people with mild-to-moderate pain. Examples of analgesics include acetaminophen, propoxyphene hydrochloride, and tramadol.
- **Topical Analgesics** - Topical analgesics include creams or rubs that are applied directly over the painful area. These are available over-the-counter and often can be used in combination with oral medications to relieve pain. Never use topical analgesics with heat treatments; the combination can cause serious burns. Active ingredients include counterirritants (wintergreen oil, camphor, eucalyptus), which stimulate nerve endings to distract the brain from joint pain; salicylates, which hamper the activity of prostaglandins, which are chemicals in the body involved in pain and inflammation; and capsaicin, which uses the natural ingredient found in cayenne peppers to relieve pain by depleting a neurotransmitter that sends pain messages to the brain.
- **Nonsteroidal anti-inflammatory drugs (NSAIDs)** - NSAIDs reduce inflammation and swelling as well as aid in pain relief and are recommended for people who have moderate-to-severe pain and signs of inflammation associated with OA. Examples of NSAIDs include aspirin, ibuprofen, ketoprofen, naproxen, naproxen sodium and meloxicam.
- **Cox-2 Drugs** - Cox-2 drugs are targeted NSAIDs that don't cause the stomach irritation associated with traditional NSAIDs. Examples of cox-2 drugs are celecoxib and valdecoxib.
Injectable glucocorticoids - Injectable

that the most aggressive treatment for controlling RA may be the combination of methotrexate and another drug, particularly biologic response modifiers. The dual drug treatment seems to create a more effective treatment, especially for people who may not have success with or who have built up a resistance to, methotrexate or another drug alone. Doctors now are prescribing combination drug therapy more often and studies continue. It appears that these combination drug therapies might become the new road to follow in treating RA. Here are some medications your doctor may suggest you combine with methotrexate: leflunomide (Arava), etanercept (Enbrel), adalimumab (Humira) and infliximab (Remicade).

Surgery

Many people with rheumatoid arthritis might consider surgery as part of their treatment plan. The surgical options available today can contribute greatly to improving your quality of life with RA. The following are different surgical options available to people with RA. For more in-depth information, visit the Surgery Center.

Synovectomy – When one or two joints are affected more severely than others, this procedure is used to reduce the amount of inflammatory tissue by removing the diseased synovium or lining of the joint. It may result in less swelling and pain and the slowing or prevention of further joint damage.

Arthroscopic Surgery – In this procedure, the surgeon inserts a very thin tube with a light at the end into the joint through a small incision. It is connected to a closed-circuit television and allows the surgeon to see the extent of the damage in the joint. Once there, the doctor can take tissue samples, remove loose cartilage, repair tears, smooth a rough surface or remove diseased synovial tissue. It is most commonly performed on the knee and shoulder.

Osteotomy – Literally meaning, “to cut bone,” this procedure is used to increase stability by redistributing the weight on the joint. Osteotomy isn’t often used with RA because there are other options available besides cutting the bones.

Joint Replacement Surgery or Arthroplasty - This is the surgical reconstruction or replacement of a joint. Successfully used to help people who otherwise might be in a wheelchair, joint replacement surgery involves the removal of the joint, resurfacing and relining of the

glucocorticoids are steroids that are injected into the joint for fast, targeted pain relief. They are recommended as an alternative initial therapy for people with moderate-to-severe knee pain and signs of inflammation who do not get relief from acetaminophen. You may only have these injections in the same joint three or four times a year.

- **Viscosupplements** - Viscosupplementation is used specifically for knee osteoarthritis and must be administered by an orthopaedic surgeon. It involves a series of injections over a period of weeks into the joint of hyaluronic acid, a substance found in the body that gives joint fluid its viscosity. Examples are Synvisc and Hyalgan.

Surgery

While most people with osteoarthritis won’t need surgery, it might be an option for you if you experience severe joint damage, extreme pain or very limited motion as a result of your OA. The benefits of surgery include improved movement, pain relief and improve joint alignment. Of course, there are always risks to surgery, especially if you have other health problems or you are overweight, which can add stress to the heart and lungs during surgery. There also is the risk of forming blood clots in your legs. You can help prevent this by taking blood-thinning medications and doing leg exercises to increase circulation before surgery.

There are several different types of joint surgery. Below are the ones most commonly done on people with osteoarthritis.

Arthroscopic Surgery - In this procedure, the surgeon inserts a very thin tube with a light at the end into the joint through a small incision. It is connected to a closed-circuit television and allows the surgeon to see the extent of the damage in the joint. Once there, the doctor can take tissue samples, remove loose cartilage, repair tears, smooth a rough surface or remove diseased synovial tissue. It is most commonly performed on the knee and shoulder.

Osteotomy - Literally meaning, “to cut bone,” this procedure is used to increase stability by redistributing the weight on the joint. Osteotomy is useful in people with unilateral hip or knee osteoarthritis (involvement in only one joint), who are too young for a total joint replacement.

Joint Replacement Surgery or Arthroplasty - This is the surgical reconstruction or replacement of a joint. Successfully used to help people who otherwise might be in a wheelchair, joint replacement surgery involves the removal of the joint, resurfacing and relining of the ends of bones and replacing the joint with a man-made component. This procedure is usually

ends of bones and replacing the joint with a man-made ankles, wrists, fingers, toes and spine.component. This procedure is usually recommended for people over 50 or who have severe disease progression. Typically a new joint will last between 20 and 30 years.

Arthrodesis or fusion – This procedure fuses two bones together. While it limits movement, it does decrease pain and increase stability of the joints in the

recommended for people over 50 or who have severe disease progression. Typically a new joint will last between 20 and 30 years.

Bracing

Bracing is a treatment option mostly used in combination with other solutions. Bracing can help stabilize your affect joint, allowing it time to heal after surgery or redistributing weight and limiting motion so you can better function in your daily life. Learn more about bracing and arthritis.

Physical and Occupational Therapy

Your osteoarthritis (OA) may be treated by your primary care physician or you may be referred to a rheumatologist (an arthritis specialist) or an orthopaedic surgeon.

Sometimes OA can affect your ability to do everyday tasks such as bathing, dressing and walking. If you are having trouble with these types of tasks, your doctor may prescribe physical or occupational therapy. A physical or occupational therapist can give you more good recommendations on protecting your joints. Ask your doctor to refer you to one if you feel you need additional assistance.

Physical therapy works on strengthening your muscles and improvng your flexibility and your joint mobility. Your physical therapist will work with you on a specific exercise program and other pain management techniques.

Occupational therapy focuses on helping you manage your daily activities. Your occupational therapist will show you ways to perform tasks without putting damaging stress on your joints. They also may show you how to use splints and braces to stabilize your joints and reduce pain. They also know which products can help you complete tasks more comfortably.

Alternatives

Osteoarthritis (OA) may respond to some alternative or complementary therapies. Following are some that are commonly used with osteoarthritis.

Glucosamine and Chondroitin Sulfate.

Glucosamine is an amino sugar that appears to play a role in the formation and repair of cartilage. Chondroitin sulfate is part of a protein that gives cartilage elasticity. These two dietary supplements have been used for years to treat osteoarthritis in dogs and horses and in Europe to treat osteoarthritis in people. Studies show that people with mild-to-moderate OA who took these supplements reported pain relief similar to those achieved with NSAIDs, although the supplements may take longer to begin working.

Common side effects include increased intestinal gas and softened stools. Other cautions include:

- Women who are pregnant or who may become pregnant should not take glucosamine and chondroitin sulfate because the effects on unborn children have not been studied.
- If you have diabetes, get your blood sugar levels checked frequently because glucosamine is an amino sugar.
- If you take blood-thinning medications or daily aspirin therapy, have your blood clotting checked more frequently. Chondroitin sulfate is similar in structure to the blood thinner heparin, and the combination may cause bleeding in some people.
- If you are allergic to shellfish, consult your doctor before taking glucosamine because it is extracted from crab, lobster or shrimp shells. In most cases, however, the allergies are triggered by the proteins in shellfish, and glucosamine is extracted from a carbohydrate called chitin.
- Don't give up your other medications without talking to your doctor.
- Try the supplements along with your regular medications for six to eight weeks. If you don't experience any change in your symptoms, then they probably won't work for you.

Vitamins. Some research has shown that antioxidants in certain vitamins may help ease certain symptoms of osteoarthritis. In general, vitamins from whole foods are believed to be better absorbed by the body than supplements. Vitamin C has been shown to counteract the wearing away of cartilage in animals with OA. In humans, it is associated with decreased OA progression and pain. Vitamin E provides some pain relief to people with OA, however one study showed it was not as effective in easing OA pain in African-American men. Vitamin D may have preventative qualities when it comes to OA. One study found that disease progression was faster in people who had a low intake of the vitamin.

Chiropractic. Chiropractic care involves the manipulation and manual adjustment of the spine. Manipulation of some joints may help relieve osteoarthritis pain, but joint manipulation of weak or damaged joints could cause problems. Be sure to tell your chiropractor that you have osteoarthritis and select one that has experience working with people with arthritis.

For additional information on supplements for osteoarthritis, visit the Supplement Guide. For more information about alternative and complementary treatments for arthritis, visit the

Alternative Therapies section.

Self-Management Techniques

Nondrug therapies are an important part of the treatment of osteoarthritis. Like your medication therapy, you will need to work with your healthcare team to develop a plan that works for you. Following are several elements you will need to consider when creating your plan.

Exercise

Exercise is the most effective nondrug treatment for reducing pain and improving movement in osteoarthritis. Don't worry that you might do more damage to your joints by exercising them. Research has shown that people with osteoarthritis can exercise safely. In fact, moderate physical activity on a regular basis help decrease fatigue, strengthen muscles and bones, increase flexibility and stamina, and improve your general sense of well-being. Joint flexibility is especially important when you have OA because stiff joints means inability to do daily tasks, such as buttoning a shirt or starting the car. Learn more about three exercises you should do.

Weight Control

Weight control is particularly important for people with OA. Excess weight directly contributes to the development of osteoarthritis. Weight control not only helps prevent OA, it is an important element in your treatment of the disease as well.

Maintaining your recommended weight or losing weight if you are overweight can lessen your pain by reducing stress on your affected joints. Weight loss specifically helps ease pressure on weight-bearing joints such as the hips, knees, back and feet.

If you are overweight, work with your doctor to devise a weight-loss plan that includes eating fewer calories and increasing physical exercise. Make sure you are getting enough nutrients to keep your body healthy and that the activities you choose don't harm your joints. See the Exercise and Arthritis and Diet and Nutrition sections for more information.

Avoiding Joint Pain and Damage

You can take steps to protect your joints and manage joint pain and damage before it is severe. Doing this is as easy as reducing daily stresses and listening to your body.

Listening to your body is the most important thing you can do to take care of yourself. This is where balancing rest and activity really comes into play, because if you plan rest breaks in your day, you may avoid times of acute pain.

Both work and leisure activities are important. The trick is in balancing them. Moderations should be your motto, especially when your arthritis is more active.

	<p>Pace yourself. Take short breaks and alternate heavy and light activities during the day.</p> <p>Don't set unrealistic goals. Take some time to plan out your daily activities. Make a "to do" list that leaves you plenty of time to achieve all your tasks - and don't add to it.</p> <p>Keep active. Too much rest isn't good for your joints either. Even on days when you are tired and stiff, try to do some exercise. By increasing your level of fitness, you will actually have more energy and less pain.</p> <p>Know when to take breaks. Don't wait for the physical signals of pain before you rest. Take a 15-minute break each hour to give your body a break from the computer, from standing or sitting too long or from concentrating too long on one task.</p> <p>Use good body mechanics. Use your palms instead of your fingers when lifting or carry things. Use your larger muscles, rather than smaller ones, to carry things. For example, carry a backpack instead of a purse. Lift with your legs instead of your back. Use good posture, which takes stress off your joints.</p> <p>Use assistive device when you need them. Devices that help you open jars, reach for items, sit down and get up from a chair or toilet seat, can help you manage your day and pain. Don't hesitate to use them if you need to.</p> <p>Work to organize and simplify your life. Rotate cleaning and don't do it all in one day. Keep tools that help you out close by so you don't have to search for them when you need them. Plan ahead for cooking and errand running so you minimize extra trips and rushing around for something you forgot.</p> <p>Don't forget that regular exercise will also help by making your muscles and joints stronger.</p>
--	---

(Source: The Arthritis Foundation. 2008. <http://www.arthritis.org/>)

VI. Yogic Remedies:

1. Meditations or Visualizations

Mindfulness and Vipassana meditation practices have been shown to be one of the most effective methods of dealing with pain experience with arthritis.

Vipassana meditation is the experience of direct insight into the nature of reality, including all internal and external phenomena. Mindfulness is the capacity to remain in a non-distracted state of awareness of the present moment. In contrast to yogic meditation practices aimed at sensory withdrawal, concentration and absorption, mindfulness and Vipassana practices direct the meditator to enter into, rather than attempt to transcend or cut off, sensory perceptions, thoughts, emotions and beliefs, with the aim of clearly

seeing the true nature of all phenomena. This intimacy with experience begins to dissolve the apparent solidity of physical sensations, including those associated with pain, and of disturbing mental states like fear and anger. They are seen through direct experience to be impermanent and to exist only in dependency on an ever changing confluence of causes and conditions - and so to lack inherent existence. This realization is a core aspect of the “insight” to which the term “vipassana” refers.

The fundamental realization at the heart of Vipassana is insight into the three seals, or marks, of existence: impermanency, unsatisfactoriness (sometimes translated less accurately as “suffering”) and not-self. All major Buddhist traditions practice some form of Vipassana (“Vipashyana” in Tibetan Buddhism), taking various aspects of experience and ultimate reality as the object of insight. These practices build the capacity to relate to all experience with a sense of greater spaciousness. They aim at clearing away the ignorance and delusory states which obscure our understanding of the true nature of reality.

Practices for stabilizing the mind are used to create a foundation for Vipassana. Mindfulness is cultivated through close observation of internal and external phenomena as they arise, persist and dissipate. As mindfulness becomes more steady and effortless the practitioner develops the capacity to maintain a state of undistracted awareness. In this state of undistracted awareness, called “calm abiding,” “tranquility” or “shamatha” meditation, the mind remains stable and is not caught by sensation, thoughts or emotions when they arise. A specific object, often the breath, is used as the object of awareness to aid in establishing calm abiding. Awareness also may be opened to take whatever arises in the mind – the flow of sensory perceptions, thought and emotion – as the anchor for the mind.

When the mind is settled in a state of tranquility, the meditator is able to experience insight into experience without being swept away by disturbing emotions or conceptual proliferations – or she is able to recognize when she has been swept away and then return to a undistracted state. The process of insight itself is one of uncovering direct, intuitive understanding, rather than engaging in abstract analysis or intellectual explanation. The mind is used to see into the nature of reality, including the nature of the mind itself, by peeling away discursive thought and concept to lay bare the underlying reality. In Buddhist understanding “mind” refers to consciousness - the capacity for awareness – and encompasses what is referred to as heart in Western understanding, not merely the intellect or the brain. It is not a kind of psychic substance, however: mind is itself empty of inherent existence. What the West and several other spiritual traditions understand by “mind” is referred to in Buddhism as “deluded mind.”

Vipassana builds the capacity to relate to life off the meditation cushion with more freedom. We do not try to make our experience anything other than what it is. In the context of meditation we thus practice relinquishing any preference for peace or other pleasant experiences and remaining present to unpleasant as well as pleasant sensations, thoughts and emotions. By returning again and again to this practice of acceptance, the sense of constriction that often characterizes our relationship to unpleasant experience is loosened. And by remaining steadfastly present we come into contact with the reality that internal and external phenomena are impermanent and lack solidity. Working in this way during meditation softens the mind so that it becomes more supple in daily life. As poet and Zen practitioner Gary Snyder explains: “[m]editation is not just a rest or retreat from the turmoil of the stream or the impurity of the world. It is a way of *being* the stream, so that one can be at home in both the white water and the eddies.”

Noting or labeling is an accessible and effective tool for maintaining mindfulness of whatever is arising while discouraging distraction and conceptual proliferation. It helps the meditator to remain with the simplicity of direct experience.

Labeling is done at the level of broad categories -- for example, by noting "thinking" when thoughts arise, or more specifically "judging mind" when critical thoughts arise, or "hearing" when sound arises. Like other tools it is to be used skillfully; this means not engaging in thinking about the labeling and allowing it to fall away as mindfulness and awareness become more steady.

The basic instructions:

- allow the mind to settle toward a state of undistracted awareness, in which she notices when the mind has become distracted by discursive thought or caught in sleepiness or agitation and returns to the object used to stabilize the mind;
- notice whatever arises, without attempting to change it or create a particular experience, and use the technique of noting to support active awareness;
- notice what happens to the object of awareness as she observes it, including whether it persists, changes or dissipates;
- notice how she is relating to whatever is arising, including reactions like aversion, attraction, or judgments about her experience;
- when sensations, thoughts or emotions persist, turn toward them rather than pushing them away or substituting other thoughts or emotions, and to inquire closely into the specific nature of the experience, recognizing conceptual categories and habitual reactions and beliefs and then looking into the underlying layers of experience; and
- rest her awareness on the breath if the sensations, thoughts or emotions are too overwhelming for her to remain within them.

This approach is based in several sources: widely-used Buddhist methods for working with the Four Foundations of Mindfulness; specific instructions for working with pain from Zen teacher Darlene Cohen and Insight Meditation teacher Joseph Goldstein; and teachings and instructions from Jeff Collins which draw on Theravadin Vipassana practices, Soto Zen teachings and practice and other Mahayana teachings, and Diamond Heart practice. It is influenced by the particular combination of clear seeing and compassion in relating with others that is embodied by Jeff and by Traleg Kyabgon Rinpoche - a way of relating that encourages students to be both rigorous and generous with themselves.

A form of mindfulness-based meditation pioneered by Dr. Jon Kabat-Zinn is widely taught in the U.S. for stress reduction and has been shown in multiple studies to be effective for both stress reduction and dealing with chronic pain. Kabat-Zinn and his colleagues chose mindfulness meditation as a technique for pain management because: "[i]n the case of pain perception, the cultivation of detached observation of the pain experience may be achieved by paying careful attention and distinguishing as separate events the actual primary sensations as they occur from moment to moment and any accompanying thoughts about pain." The overall experience of pain is altered by observing the separation between physical sensation and psychological elaboration: the sensory experience of pain "may be undiminished, but the emotional and cognitive components of the pain experience, the hurt, the suffering, are reduced."³⁴ This approach is centered primarily on mindfulness and awareness, with less emphasis on classical Buddhist teachings. *Rheumatoid Arthritis, Structural Yoga Therapy Research Paper, Satchidananda Ashram, V.A., 2006 by Donna J. Sullivan*

Also see example for Guided Visual Meditation, *Guided Visual Meditation for Solar Plexus Chakra in Section IV above.*

2. Asanas, Mudras, Bhandas, Relaxation

Asanas for Arthritis

According to Mukunda Stiles, “Pavanmuktasana-“joint freeing”, is a dynamic series for the purpose of limbering the joints, evaluating for normal range of motion, learning musculo-skeletal anatomy, and, with regular practice, freeing subtle energy flows called nadi (literally “tubes”) to permit access to the experience of meditation

“The practice of the Joint-Freeing Series will teach you how to move steadily and rhythmically, in harmony with breath without forcing toward a goal. This will improve the circulation of blood and eventually of prana to enable muscles to be better prepared for change. It will also bring an increased energy level. The joint-freeing series also improves the flow of lymph fluids through the thoracic duct, located anterior to the lumbar spinal column. Strengthens the immune system and improves the practice of asanas that focus upon the spinal column. It will develop your capacity to isolate muscles, thus bringing definition to the Joint-Freeing Series. Through this practice, the Shoulderstand, Bridge, and Spinal Twist, become more effective-their benefits can be more readily perceived”.

“Ideally, before beginning your daily yoga asana practice, you will check in with your body. This series accomplishes this goal and systematically loosens all joint movements. The Pavanmuktasana series moves each joint gently and systematically through its full and natural range of motion. The series starts with the feet and ankles, moves up to the knees, hips, torso, and spine, and finishes with the neck. The motions described in this series represent all the basic motions of the body.

Kinesiology, the science of the analysis of motion, defines 45 specific directions of possible body movements. To determine the average range of motion for each joint, experts in physical medicine analyzed each movement. These are the normal minimal ranges of mobility for each joint. If you follow these standards for joint mobility during yoga practices, you will be less likely to strain or injure muscles and joints. Students with injuries or chronic pain benefit immensely from adjusting their practices to these standards.

Performing this series for the first time, should be considered an evaluation of your joint suppleness. Keep a record of how your mobility and range of motion improve with time. This series can also be performed to serve several other purposes:

1. To heighten awareness and distinction between stretching and contracting muscles. Many people do not know the difference between the feeling sensations of stretching and those of strengthening a muscle. This training can, with the help of a trained teacher, be used to clarify the exchange between body sensations and mental understanding. It can "ground" your awareness into your physical body.
2. To move each joint through specific anatomical directional ranges of motion, which can enhance joint mobility and often relieve joint pain and stiffness. If a joint is stiff, it lacks full mobility. The feelings will tell you that the muscles involved in creating the motion are weak and/or that the contrasting antagonist muscles are tight. By practicing with an awareness of the specific imbalance you have, you can apply more force to develop muscle strength and joint mobility.
3. To observe and diagnose areas for comparative freedom. By maintaining mindfulness as you do the series you can discover, for instance, that when you flex your right wrist, the joint moves smoothly, while the left wrist creates a rotation with flexion. This comparison may reveal an underlying chronic tension in the rotator muscles, which may be a factor in the early phases of carpal tunnel syndrome due to excessive keyboarding.
4. To isolate muscles and test for comparative strength and stamina. This is dealt with more specifically in chapter 17 on isolating muscle strength, but a mild comparison is possible with

this series.

5. To alleviate conditions associated with poor circulation. By focusing on making the complete motions of each joint systematically, the joint-freeing series moves synovial fluid within the joint capsule and enhances vascular circulation.

6. To allow you and your teacher to see what basic movements are at the root of difficulties that may arise in asana practice. As yogasanas are composed of combinations of individual joint motions, your instructor can more accurately predict which postures will need the most attention.

7. To be able to follow the guidelines of Patanjali's Classical Yoga, as stated in his *Yoga Sutras* (II, 46), that yoga poses should be "comfortable and steady." This series often removes the causes of "discomfort and instability." I have repeatedly had students tell me that this series alleviated their pain.

8. To provide a series that is especially beneficial for those with limited mobility due to injuries or arthritis. Students with arthritis often report that this series is all they need to be relieved of their worst symptoms. While not necessarily a cure for arthritis, it can be of major help when combined with Ayurvedic dietary counseling.

9. To uncover motions that are boring. Often, these motions indicate a movement in which the student "spaces out." This may reveal a site of unconscious chronic tension or weakness. The specific posture at the point of trauma or injury often holds a chronic trigger for the mind to go unconscious. By bringing to consciousness the feelings held in the body posture, the subconscious patterns can be released.

This last perspective comes from another translation for the term Pavanmuktasana-as "energy-freeing practices." This comes about through persistent conscientious practice of this series with coordinated breathing. This frees prana (the energy hidden within the breath) to flow into the region being exercised. The series enhances awareness of a subtlebody physiology that is the memory storehouse for all events. The subtle body is called the pranamaya kosha, literally the "sheath veiling prana." It is composed of energy flowing from a central wand of light, called the sushumna, in the subtle body superimposed on the physical spinal cord. From this wand of light emanate luminous vortices (chakras) that spread through subtle nerve-like channels called nadis. Awareness of the subtle body comes with a variety of experiences, ranging from heat, light, visions, recalling lost memories, feelings of a spiritual presence, or intuitive flashes of guidance. (For more about this, see chapter 6, "Remembering the Big Picture." For an overview of the Joint-Freeing Series, see figure 19, pages 132-133.) When performing the Joint-Freeing Series, repeat each motion six times. Go at your own rate. Adjust your level of effort so that you can sustain the sequence rhythmically, in harmony with your natural breath rate.

(Structural Yoga Therapy by Mukunda Stiles, pp.17, 121 – 123)

STRUCTURAL YOGA THERAPY



1. Stick Pose-Dandasana
Exhale, feet toward head, toes spread
Dorsiflexion 20°



Inhale, point foot, curling the toes
Plantar Flexion 50°



2. Inhale, soles face out, keep feet upright
Dorsiflexion with Ankle Eversion 20°



Exhale, soles face in
Dorsiflexion with Ankle Inversion 45°



3. Inhale, circling out
Exhale, circling in
Ankle Rotation



4. Inhale, with mild arm effort, straighten knee
Knee Extension 0°



Exhale, hold lower shin, pull heel to thigh
Knee Flexion 1.50°



5. Inhale, turn leg out and swing it wide open
Hip External Rotation 45°



Exhale, turn leg in and swing it back
Hip Internal Rotation 35°



6. Inhale, head up, spine down
Spine Extension



Exhale, backup, abdomen in
Spine Flexion



7. Inhale, stretch leg back and up, spine level
Hip Extension 30°



Exhale, bring knee toward chest, spine lifted
Hip Flexion 135°



8. Inhale, center pose, squeeze thighs



Exhale, hips to side, feet opposite, toes forward
Hip Adduction (right) 30°
Hip Abduction (left) 45°



The Ujjaye breath pattern used in all yoga asana practices is easily learned through regular practice of the joint-freeing series. The pattern is to inhale when extending or straightening the joint, and exhale when flexing or contracting. For motions of the torso, this means to exhale whenever the abdomen is contracted, and to inhale when the chest is expanded. The regular practice of harmonizing the breath with motion increases self-awareness. This in turn can be reflected in all activities of life.

With Yoga, these aspects of a person's physique and life can be greatly enhanced. Yoga Poses can help strengthen your joints which is crucial in preventing and dealing with arthritis. It makes your joints function normally, thus reducing the risk of stiffness. With its virtue of balance, Yoga practice helps regulate the levels of uric acid in the body. Obesity may also be avoided through the practice. More importantly, Yoga can lead to an overall healthier lifestyle that can enhance your resistance not only from arthritis but to other sicknesses as well". (Structural Yoga Therapy by Mukunda Stiles, pp 121-123)

Mudra for Arthritis

The Surabhi Mudra is used to support the healing or relief due to the physical complaints due to arthritis. Combined with visualizations and affirmations, they also influence the mind and emotional responses to life.

Meditation used with Surabhi Mudra (Cow Mudra)

At first, mainly concentrate on your exhalation and imagine how a dark cloud leaves your body each time you *exhale*. This cloud contains your spent energy, all the waste substances, and every pain. Most importantly, it also contains all your negative thoughts and feelings. After about 20 breaths, also pay attention to your *inhalation*, and imagine each time that you are absorbing

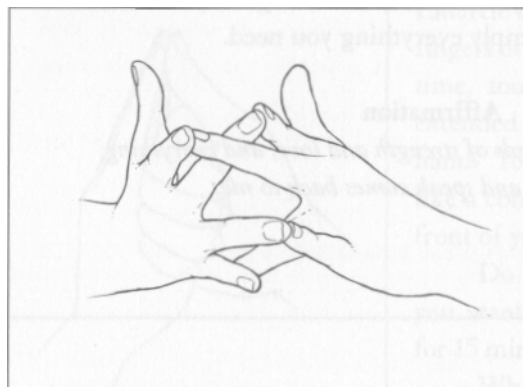
light, which makes your entire body shine. Gradually let the cloud that you exhale become lighter and lighter. In conclusion, let yourself be filled with the brightest light and surrounded by a cloak of light that radiates far out into your environment.

The little finger of your left hand touches the ring finger of your right hand. The little finger of your right hand touches the ring finger of your left hand. At the same time, the middle fingers of both hands touch the index fingers of the other. The thumbs remain extended.

Do three times a day for 15 minutes.

The Surabhi Mudra is very effective against rheumatism and arthrosis. Since these diseases are usually chronic, or at least have

existed within the person long before any outbreak or pain is perceived, this mudra must also be practiced for a longer period of time.



Affirmation

Purifying light fills me and burns away everything that oppresses and hurts me. From the bottom of my heart, I seek cleanliness in my body, clarity in my mind, and purity in my soul.

MUDRAS – Yoga in your Hands by Gertrud Hirschi
WeiserBooks pp 78 – 79
copyright 2000

3. Optimal Yogic Diet Recommendations:

Arthritis is a blanket term used to embrace a huge group of related conditions including Rheumatoid arthritis and Osteoarthritis. While arthritis causes severe pain in the joints, relief comes from many directions like exercises, diet, massages, yoga, drugs etc. While the advancement in medical field still soars, it does good to bear in mind that the easiest and quickest cure for many an ailment and pain comes from natural foods and healthy eating habits. The case is no different for arthritis. It has been known for centuries that certain herbs, spices and oils heal inflammation, thus providing relief to joint pain associated with arthritis. Let us learn a bit more on these foods.

Turmeric: This yellow herb, famed in India had been found to have numerous healing properties. Now lab work by University of Arizona researchers, in Arthritis & Rheumatism, shows just how the spice's curcuminoid extracts have a therapeutic effect. Earlier work by the University of Arizona team showed turmeric could prevent joint inflammation in rats,

Ginger: Ginger contains chemicals that work similarly to some anti-inflammatory medications. It warms painful joints by helping increase blood flow. Ginger can be incorporated into your diet by drinking a cup of ginger tea daily. Ginger essential oil can also be diluted with almond oil and rubbed into the painful joints. However, ginger can also act as a blood thinner, so anyone taking a blood-thinning medication should collaborate with their personal physician when adding foods and beverages seasoned with ginger.

Saffron: Saffron essential oil, like ginger essential oil may be mixed with almond oil and rubbed directly into the joints. Saffron can also be incorporated into your diet as a tea.

Olive oil: Olive oil contains the “good” monounsaturated fat, which protects the body against inflammation because it contains antioxidants called polyphenols. You could consider using olive oil instead of vegetable oil for cooking.

Omega-3 fatty acids: The healthiest of fats for people with arthritis or other inflammatory disorders are omega-3 fatty acids, one of the polyunsaturated fats. Omega-3s actually work to decrease inflammation by suppressing the production of cytokines and enzymes that erode cartilage. More than a dozen studies have demonstrated that omega-3 fish oils can reduce symptoms of rheumatoid arthritis. (*Natural Foods and Spices that Reduce Arthritis- Posted on June 27, 2008 in Latest News*)

Foods to avoid

- Citrus, grapes, dried fruit
- Corn, eggplant, white potatoes, peppers, creamed vegetables
- Wheat corn, barley, spelt, kamut, rye, all-gluten containing products
- Peanuts, peanut butter, pinenuts, pistachios
- Beef, shellfish, pork, frankfurters, sausage, canned meats, eggs
- Dairy products, including yogurt
- Margarine, butter, shortening, processed and hydrogenated oils, mayonnaise
- Sodas and soft drinks, alcoholic beverages, caffeinated beverages
- Chocolate, ketchup, mustard, chutney, soy sauce, barbeque sauce or other condiments
- White or brown refined sugar, honey, maple syrup, corn syrup, or desserts made with these sweeteners

Nutritional supplements and herbs

- Glucosamine
- Chondroitin
- MSM
- Cats claw
- UltraInflamix anti-inflammatory herbal compound (Ingredients: Tu-Huo, Cinnamon twig, Siler, Cnidium, Chin-chin, Clematis, Morus Twig, Red Atractylodes, Coix, Acanthopanax, Chiang Huo, Stephania, Dried Ginger, Aconite (Chuan Wu), Tumeric

“Devi” diet:

This diet recommended by Indra Devi can eliminate arthritis pain.

Indra Devi gave this rice & squash diet during the Unity in Yoga’s Peace Conference in Jerusalem January 1996. Mataji Indra Devi is called the “Mother of Yoga” as she was the first European woman Yoga teacher.

Mataji claimed that 90% of those people who followed this diet get relief from their symptoms within ten days. For ten days eat a diet consisting only of 90% whole grain (brown or basmati) rice and 10% of any type of cooked squash. Add no flavorings to the diet. Every spoonful of rice is to be chewed at least 50 times until only a watery gruel remains in the mouth. Every two hours between meals have a relaxing noncaffeine tea. During the diet consume no other foods, no coffee, sugar or condiments. Drink half your body weight in ounces of water each day. For those with hypoglycemia who need more protein, you can add soybeans or tofu to this diet to maintain your energy level. Be prepared for your body’s release of toxins that are the cause of the arthritis. This may take the form of headaches, body pains, constipation, moodiness, irritability, etc. Practice being present to yourself and do not medicate yourself to avoid your feelings with addictive substances – sugar, caffeine, food cravings – nor avoid your true feelings by watching excessive TV or seeking other sensory stimulation. If you become constipated take an enema or one tablespoon of castor oil just prior to bed.

If there is pain from the arthritis symptoms, take a raw potato and slice it to the size of the

painful area. Lay the flesh of the potato against the painful site and tie it there with gauze. Let it stay until the potato becomes hard then replace it with another. This can be done during the day though it is especially good for overnight use. If there is inflammation, apply a milk compress (a small towel soaked in milk) at room temperature. For fever, apply a vinegar and water compress on the shin and calf area down to the foot. Wrap your lower legs fully to retain the moisture then lay in a warm bed and within four hours the fever will be gone.

Indra Devi made the following recommendations for an ongoing arthritis diet in her classic Yoga book, Forever Young, Forever Healthy, pg. 98-99. The regular diet should be composed of fresh fruit, salad, vegetables, greens, nuts except peanut, whole grains, soy, dried fruit and honey. It should eliminate all meats, fish, eggs, salt, peas, beans, lentils, asparagus, mushrooms, processed flour, sugar, coffee, tea (other than decaffeinated herbal), cocoa, and chocolate. Eliminate all nightshades (potato, tomato, eggplant, bell pepper, and tobacco) and spicy foods. The best drink for arthritis is distilled water with fresh lemon juice taken as often as possible (1/2 to three lemons per glass of distilled water). An equally effective way for those who do not want to fast or go on the ten-day cleanse is the sixty day lemon juice plan. On the first day one takes the juice of one lemon before breakfast; on the second day it is taken before breakfast and before lunch, on the third day before breakfast, lunch and dinner. You continue to increase this quantity until you reach thirty. That is 10 lemons before breakfast, ten before lunch and ten before dinner. The next day you should start decreasing the number by one every day until you are back to where you started.

Lemon juice is a most potent solvent for breaking up the calcified formations existing in the body. One has only to be careful to protect one's teeth by rinsing them thoroughly after drinking the lemon juice, or by sipping it through a straw. For those badly crippled with arthritis and unable to exercise, the lemon juice plan, together with lemon leaf tea will give satisfactory results. The tea is prepared in the following way: boil 4 lemon leaves and 4 orange leaves in 3 cups of water until the liquid is reduced to one cup. Add raw, unheated honey and the juice of half a lemon. First squeeze out the juice then put into the cup the halflemon itself as well. Drink at night before retiring to bed

4. Lifestyle and other tools:

Spirituality and Arthritis Outcomes

Studies show that 90 percent of Americans believe in God, and many consider faith and spirituality an important aspect of well-being. Indeed, many people trust in their spiritual beliefs to cope with health challenges. A few studies have even shown that faith is associated with better health outcomes.

A team of scientists from Johns Hopkins School of Medicine in Baltimore, MD – including Arthritis Foundation-funded researcher [Steffany Haaz, MFA](#) – and Vanderbilt University Medical Center in Nashville, TN, set out to discover the frequency of spiritual experiences in older adults with chronic health conditions. Furthermore, they sought to determine the relationships between spirituality and social factors, demographic factors, pain, health and mood. The research team hypothesized that women, African Americans and people with arthritis would report more frequent spiritual experiences and improved health perceptions, less pain and less depression.

A total of 99 people completed the survey; 62 percent were women, half were African American and 54 percent had arthritis. The most common types of spiritual experiences reported were thankfulness, being touched by beauty, a desire to be closer to God and accepting others. African American women reported the most frequent DSEs and white men reported the fewest. Higher numbers of coexisting medical conditions were associated with more frequent spiritual experiences.

When relating spiritual experiences to health, the research team found that higher pain scores were modestly associated with more frequent DSEs and that frequent DSEs related to lower depression scores. Due to the design of the study, no cause-and-effect relationship could be inferred from the data. The research team couldn't tell, for example, whether less depressed people prayed more or if people who prayed more were less depressed.

Participants with arthritis reported significantly more frequent DSEs than participants without arthritis. Compared to those without arthritis, participants with arthritis were more likely to find strength and comfort in their religion, trust or rely on God or another spiritual source, accept help from a higher power and feel close to God.

The study authors conclude, "This study and others have found that spirituality is an important and effective approach that many patients may use to cope with their pain." They urge patients and clinicians to embark on discussions of spirituality and to explore, when appropriate for the individuals, the potential therapeutic benefit of using spirituality based strategies to help with day-to-day coping of health challenges.

(McCauley J, Tarpley MJ, Haaz S, Bartlett SJ. Daily spiritual experiences of older adults with and without arthritis and the relationship to health outcomes. Arthritis Care Res 2008;59:122-8.)

Appendix D is included which explores the cause and treatment of arthritis from an Ayurvedic perspective. Arthritis appears to be a disorder of (decreased) Asthi Dhatu, or bone tissue. This decreased Asthi Dhatu is referred to as Asthi Kshaya. When asthi dhatu is decreased, it is called asthi kshaya. One of the causes of decreased asthi dhatu is increased asthi agni. The increased metabolism burns the calcium, magnesium, and other mineral salts. White spots develop on the fingernails, the fingernails become brittle and they get ridges and creases. Brittle nails indicate asthi dhatu deficiency. These people may also have many cavities in the teeth. Teeth become brittle and fractures of the crowns may occur. If there is a deep pocket of infection within the gums, the teeth become sensitive to cold because of vata. But when pitta is present and creates inflammation, the teeth become sensitive to hot drinks, indicating the nerve is involved.

During menopause, asthi agni becomes hyperactive because the body produces less estrogen. When less estrogen is present, asthi agni becomes overactive in an effort to compensate for that lack of estrogen and the agni it contains. The result can be osteoporosis. Eating a vata provoking diet will worsen osteoporotic changes. According to Ayurveda, a woman should take natural herbal estrogen that is present in shatavari and other herbal remedies. Shatavari is effective in preventing osteoporosis during menopausal age. However, if you give a woman synthetic estrogen, her menstruation can return, or she may develop pitta symptoms, because estrogen is pitta provoking. In addition, there is the possibility of cancer. It is more balancing to use natural herbal estrogen, which is present in shatavari, guduchi, and aloe vera, as these all decrease pitta.

Decreased asthi dhatu can also create degenerative arthritis, as well as receding gums. Some people brush their teeth as if they were brushing the toilet. That is hurtful to the gums and may result in receding gums and bone loss in the jaw. On an emotional level, when asthi dhatu is depleted, a person is insecure, lonely, nervous, and ungrounded. (*Textbook of Ayurveda Fundamental Principles of Ayurveda, Volume I*)

In addition, the following was taken from www.kerayaayurvedics.com,

Natural Ayurvedic Remedy for Arthritis

Arthritis or joint pains is caused mainly due to suppression of agni or digestive fire. This results in poor digestion, which leads to accumulation of undigested wastes in the body resulting in buildup of ama (waste matter).

Ayurveda classify arthritis into three – vata, pitta and kapha type joint pains.

Vata type arthritis is characterized by dryness of the joints.

Pitta type arthritis is characterized by swollen joints. Pain increases when you move your limbs. Joints feel hot.

Kapha type arthritis is characterized by stiff swollen joints. Joints feel cold. Move the limbs a bit and you feel relieved from pain.

Certain yoga postures are found to offer relief from arthritis pain. Choose the yoga postures that may be beneficial to you with the help of a trained yoga practitioner.

Detoxification processes including enemas and panchakarma are beneficial in treating arthritis. It removes much of the accumulated toxic wastes and gives relief to pain.

Ayurvedic Massage Oils Used in the Treatment of Arthritis

Narayana oil and Sahacharadi oil are beneficial massage oils that have the power to bring down arthritis pain. The effect of the oils depends primarily on your body type.

Narayana oil removes stiffness and improves mobility at limbs and is especially beneficial in reducing backache, sprains and joint pains.

If Sahacharadi oil doesn't reduce the pain considerably in 24 hours of first massage, discontinue the application. If your body responds favorably to the massage oil, it will start showing results in less than 12 hours. This oil comes in rose in color and has special effects on Vata and Kapha type bodies.

Abhyanga

This Ayurvedic massage technique uses medicated oils specific to one's Ayurvedic constitution to assist in preventing and eliminating the accumulation of physiological imbalances. Abhyanga promotes lubrication and flexibility in the tissues, joints and muscles, it will also give the skin a soft, youthful luster. This massage is deeply relaxing and beneficial to anyone with muscular skeletal restrictions.

Aromatherapy

The use of scents as therapy has been around since the beginning of time. Aroma therapy is one of the subtlest therapies known, it uses therapeutic grade, organically processed essential oils to elicit a specific response in the body. Aromatherapy is used singularly or in conjunction with other modalities, and is known for treating such things as; depression, PMS, indigestion, insomnia, headaches, achy joints and muscles, insect bites and insect repellent, hair and skin care. These are just a few of the numerous things that can be treated with aromatherapy, there are even oils that are safe and extremely effective for children and animals.

Bindu Chikitsa

This is an integrative, hands-on technique developed by Gerald Pollack through years of clinical therapy. It combines some of the most powerful aspects of Shiatsu, Ayurvedic marma therapy and Polarity techniques to achieve a full systematic reorganization of the bodies tissues and systems. This type of bodywork can be adapted to suit anyone's specific needs. Clients will enjoy and value this technique because it reaches deep to the core of the problem and allows the body to gradually unwind releasing old patterns of dysfunction.

Iridology

This is an individual consultation that will address the clients state of health through analyzing the specific markings of the iris and the sclera of the eye. A photograph and magnified optic lens are used to identify areas of weakness within the body. To address the areas of concern one will be recommended dietary and lifestyle changes, specific herbal supplements, essential oils,

yoga and other therapies. By implementing these recommendations one will feel an improvement of overall self-awareness and health.

Shirodhara

This unique Ayurvedic therapy utilizes a warm oil flow on the forehead to synchronize the brain and integrate the mind, body and spirit. *Shiro* means head and *dhara* means flow, this therapy will calm the nervous system and help to dissipate excess doshas. Herbal medicated oils or liquids will be used specifically for each client. Shirodhara has been called one of the most divine and relaxing therapies known. Plan to take it easy the rest of the day following this treatment.

Shiatsu

Shiatsu means “finger pressure” it is a holistic full body therapy related to acupuncture and acupressure. Instead of using needles, Shiatsu stimulates energetic points and pathways with the fingers, elbows, knees and feet .Full body stretching is also incorporated to achieve a harmonizing effect on the bodies vital energy. Clients will feel abundant energy with increased joy towards there surroundings and life in general.

Herbs useful in Arthritis Cure

Ginger (*Zingiber officinale*) is useful in controlling pain and inflammation. Dried and powdered ginger taken internally is beneficial in reducing joint pains and inflammation. No side effects recorded.

Turmeric (*Curcuma longa*) also has anti-inflammatory properties. Turmeric is a regular condiment for a variety of Indian culinary items.

Ashwagandha (*Withania somnifera*) has several benefits. Its roots are used in treating arthritis related pain.

Arthritis has its roots on digestive problems. Keeping body fit by leading an active life, practicing yoga, daily aerobics, taking only easy-to-digest food and occasional use of triphala as a mild laxative, etc are preventive steps against arthritis.

Attitude, lifestyle, mind and body have a tremendous impact on the ability to live well with arthritis.

In conclusion, below are some more suggestions that may be useful in helping a person suffering from arthritis, to move forward with their lives:

- Positive Attitude
- Empower yourself with gaining as much knowledge about your condition as possible.
- Join a support group such as American Autoimmune Related Diseases Association (AARDA).
- Exercise
- Get enough Sleep
- Laugh
- Manage Stress
- Find a Healing/Mind-Body/Relaxation Approach you're comfortable with
- Meditate
- Guided Imagery
- Self-Hypnosis
- Journaling

- Deal with Depression
- Manage Family Relationships
- Spirituality
- Energy Work/Reiki
- Acupuncture
- Massage

Yoga and other alternative therapies are difficult to evaluate. These investigations should not simply assess symptomatic relief but must take advantage of modern research techniques and look at objective effects on cells and organs. Creating a research study to determine whether a yoga-based regimen is preventative may be difficult to assess, yet well-structured trials would be valuable. The ancient tradition of yoga, properly used and evaluated, may be proven to have some mental and physical value.

To realize the value of complementary therapy, studies of alternative therapy evaluated in clinically controlled trials may provide evidence to support the use of complementary therapy in treatment and prevention of diseases and medical conditions. Fontanarosa and Lundberg wrote that "some advocates of alternative medicine argue that many alternative therapies cannot be subjected to the standard scientific method and thus, instead must rely on anecdotes, beliefs, theories, testimonials, and opinions to support effectiveness and justify continued use." Most alternative therapies have not been evaluated using clinically controlled trials. As a result, a National Institutes of Health expert panel concluded that current evidence is inadequate for the development of high quality trials. The lack of complete studies and the lack of evidence on safety and outcomes are unacceptable. Additional research should be completed. Physicians' inquiry into complementary medicine should coincide with these studies. Physicians can become conversant with alternative medicine and understand its benefits and limitations. The focus of treatment should be on the patient, not on the classification of treatment as complementary or traditional medicine. Whatever the therapy, the clinical application must be based on the strength of the scientific evidence with statistical significance.

The future is promising for the scientific study of alternative therapies; however, it is essential to preserve the components of alternative medicine treatment, such as customizing the subjective aspects of alternative therapy. The creation of the National Center for Complementary and Alternative Medicine at the National Institutes of Health^[27] will hopefully allow alternative therapies the opportunity to contribute to the future of medical research.

(Marian Garfinkel, EdD, "Yoga as a Complementary Therapy," *Geriatrics & Aging*, M2006.)

APPENDICES

APPENDIX A

Comparison of Rheumatoid Arthritis and Osteoarthritis Causes, Conditions, and Treatments

Overview	Rheumatoid Arthritis	Osteoarthritis
<p>What is it?</p>	<p>Rheumatoid arthritis (rue-ma-TOYD arth-write-tis) is a chronic disease, mainly characterized by inflammation of the lining, or synovium, of the joints. It can lead to long-term joint damage, resulting in chronic pain, loss of function and disability.</p> <p>Rheumatoid arthritis (RA) progresses in three stages. The first stage is the swelling of the synovial lining, causing pain, warmth, stiffness, redness and swelling around the joint. Second is the rapid division and growth of cells, or pannus, which causes the synovium to thicken. In the third stage, the inflamed cells release enzymes that may digest bone and cartilage, often causing the involved joint to lose its shape and alignment, more pain, and loss of movement.</p> <p>Because it is a chronic disease, RA continues indefinitely and may not go away. Frequent flares in disease activity can occur. RA is a systemic disease, which means it can affect other organs in the body. Early diagnosis and treatment of RA is critical if you want to continue living a productive lifestyle. Studies have shown that early aggressive treatment of RA can limit joint damage, which in turn limits loss of movement, decreased ability to work, higher medical costs and potential surgery.</p> <p>RA affects 1.3 million Americans. Currently, the cause of RA is unknown, although there are several theories. And while there is no cure, it is easier than ever to control RA through the use of new drugs, exercise, joint protection techniques and self-management techniques. While there is no good time to have rheumatoid arthritis, advancements in research and drug development mean that more people with RA are living happier, healthier and more fulfilling lives.</p>	<p>Osteoarthritis (OS-tee-oh-are-THRY-tis) (OA) is one of the oldest and most common forms of arthritis. Known as the “wear-and-tear” kind of arthritis, OA is a chronic condition characterized by the breakdown of the joint’s cartilage. Cartilage is the part of the joint that cushions the ends of the bones and allows easy movement of joints. The breakdown of cartilage causes the bones to rub against each other, causing stiffness, pain and loss of movement in the joint.</p> <p>Osteoarthritis is known by many different names, including degenerative joint disease, ostoarthrosis, hypertrophic arthritis and degenerative arthritis. Your doctor might choose to use one of these terms to better describe what is happening in your body, but for our purposes, we will refer to all of these as osteoarthritis.</p> <p>It is thought that osteoarthritis dates back to ancient humans. Evidence of osteoarthritis has been found in ice-aged skeletons. Today, an estimated 27 million Americans live with OA. Despite the longevity and frequency of the disease, the cause is still not completely known and there is no cure. In fact, many different factors may play a role in whether or not you get OA, including age, obesity, injury or overuse and genetics. Your OA could be caused by any one or by a combination of any of these factors.</p> <p>There are several stages of osteoarthritis:</p> <ul style="list-style-type: none"> ▪ Cartilage loses elasticity and is more easily damaged by injury or use. ▪ Wear of cartilage causes changes to underlying bone. The bone thickens and cysts may occur under the cartilage. Bony growths, called spurs or osteophytes, develop near the end of the bone at the affected joint. ▪ Bits of bone or cartilage float loosely in the joint space. ▪ The joint lining, or the synovium, becomes inflamed due to cartilage breakdown causing cytokines (inflammation proteins) and enzymes

		<p>that damage cartilage further.</p> <p>Changes in the cartilage and bones of the joint can lead to pain, stiffness and use limitations. Deterioration of cartilage can:</p> <ul style="list-style-type: none"> ▪ Affect the shape and makeup of the joint so it doesn't function smoothly. This can mean that you limp when you walk or have trouble going up and down stairs. ▪ Cause fragments of bone and cartilage to float in joint fluid causing irritation and pain. ▪ Cause bony spurs, called osteophytes, to develop near the ends of bones ▪ Mean the joint fluid doesn't have enough hyaluronan, which affects the joint's ability to absorb shock.
<p><u>What causes it?</u></p>	<p>The exact cause of rheumatoid arthritis (RA) currently is unknown. In fact, there probably isn't an exact cause for RA. Researchers now are debating whether RA is one disease or several different diseases with common features.</p> <p>Immune System We do know that the body's immune system plays an important role in rheumatoid arthritis. In fact, RA is referred to as an autoimmune disease because people with RA have an abnormal immune system response.</p> <p>In a healthy immune system, white blood cells produce antibodies that protect the body against foreign substances. People who have RA have an immune system that mistakes the body's healthy tissue for a foreign invader and attacks it.</p> <p>One example of this miscommunication in the body is known as rheumatoid factor. Rheumatoid factor is an antibody that is directed to regulate normal antibodies made by the body. It works well in people with small quantities of rheumatoid factor. People with high levels of rheumatoid factor, however, may have a malfunctioning immune system. This is why your doctor often will request a test measuring rheumatoid factor when trying to diagnose RA. In general, the higher the level of rheumatoid factor present in the body, the more severe the disease activity is.</p> <p>It is important to note that not all people with RA have an elevated rheumatoid factor and not all people with an elevated rheumatoid factor have RA. The test also can come out negative if it is done too early in the course of the disease. Approximately 20 percent of people with</p>	<p>While there isn't any single known cause of osteoarthritis (OA), there are several risk factors that should be considered. Knowing and controlling these risk factors can help you minimize your risk or even help you prevent getting OA altogether. Keep in mind that having risk factors for OA doesn't mean you will definitely get it. No single risk factor is enough to cause OA; it is more likely that a combination of risk factors works together to cause the disease.</p> <p>There are two distinct types of osteoarthritis – primary and secondary. Primary osteoarthritis is the type associated with aging and is thought of as “wear and tear” osteoarthritis. The older you are, the more likely it is that you will have some degree of primary arthritis. In fact, if we live long enough, most of us will experience primary osteoarthritis, even if it is just a touch. There is no apparent cause for this type of osteoarthritis.</p> <p>In contrast, when someone is diagnosed with secondary osteoarthritis, it is because there is an apparent cause for the disease. In other words, the breakdown of cartilage can be associated to injury, heredity, obesity or something else.</p> <p>Listed below are the risk factors for osteoarthritis.</p> <ul style="list-style-type: none"> ▪ Age. Incidences of OA increase as you age. Since “wear and tear” does play a part in the development of OA, the older you are, the more you have used your joints. Although age is an important risk factor, it doesn't mean that OA is inevitable. ▪ Obesity. Obesity is a nationwide epidemic and you hear about the danger from it every day on the news. Increased body weight is a serious factor in the development of OA, particularly in your knees, which carry the brunt of your weight day in and day out. For every pound you gain, you add 3 pounds of pressure on your knees and six times the pressure on your hips. Since weight gain gradually increases the stress on joints, the weight you gain the decade before

	<p>RA will have a negative rheumatoid factor test and some people who don't have RA will test positive.</p> <p>Learn more about the immune system.</p> <p>Gender Women get rheumatoid arthritis two to three times more often than men and their RA typically goes into remission when they get pregnant. Women develop RA more often than expected in the year after pregnancy and symptoms can increase after a baby is born. These facts lead researchers to believe that gender might play a role in the development and progression of RA. Many are trying to understand the effects female hormones might have in the development of RA. Currently, there are limited answers to these questions. For more information on pregnancy and arthritis, see Pregnancy Prognosis.</p> <p>Genetics Most researchers believe there are genes involved in the cause of RA. The specific genetic marker associated with RA, HLA-DR4, is found in more than two-thirds of Caucasians with RA while it is only found in 20 percent of the general population. While people with this marker have an increased risk of developing RA, it is not a diagnostic tool. Many people who have the marker either don't have or will never get RA. While this marker can be passed from parent to child, it is not definite that if you have RA, your child will too. Learn more about genetics and RA.</p> <p>Infection Some physicians and scientists believe that RA is triggered by a kind of infection. There is currently no proof of this. Rheumatoid arthritis is not contagious, although it is possible that a germ to which almost everyone is exposed may cause an abnormal reaction from the immune system in people who already carry a susceptibility for RA.</p>	<p>you have OA symptoms, particularly in middle age, plays a big role in determining if you will have OA.</p> <ul style="list-style-type: none"> ▪ Injury or Overuse. Athletes and people who have jobs that require doing repetitive motion, such as landscaping, typing or machine operating, have a higher risk of developing OA due to injury and increase stress on certain joints. OA also develops in later years in joints where bones have been fractured or surgery has occurred. It is important for athletes to learn to take precautions to avoid injury and for people in repetitive jobs to modify their movements to lessen this stress. Note: Avoiding repetitive movement shouldn't be interpreted as not exercising. Regular moderate exercise strengthens the joint causing it to be more stable, thereby, reducing the risk of OA in that joint. ▪ Genetics or Heredity. It is becoming more and more clear that genetics plays a role in the development of OA, particularly in the hands. This shows itself in many ways. Inherited abnormalities of the bones that affect the shape or stability of the joints can lead to OA. It is also more common in joints that don't fit together smoothly. For example, a bowlegged person is more likely to develop OA. Increased laxity or being double jointed also increases the risk of OA. Recently, researchers have been looking at a defect in the gene responsible for manufacturing cartilage as a risk factor. Just because you have one of these inherited traits, doesn't mean that you are going to develop OA. It just means that your doctor should check you more closely and more frequently for signs and symptoms of the disease. ▪ Muscle Weakness. Studies of the knee muscles not only show that weakness of the muscles surrounding the knee can lead to OA, but that strengthening exercises for thigh muscles are important in reducing the risk. ▪ Other Diseases and Types of Arthritis. People with rheumatoid arthritis tend to have a greater chance of developing OA. Also, hemochromatosis, or having too much iron, can damage cartilage to the point of chronic deterioration. Acromegaly, or excess growth hormone, also has adverse effects on the bones and joints and can lead to OA.
<p>What are the effects?</p>	<p>Rheumatoid arthritis can start in any joint, but it most commonly begins in the smaller joints of the fingers, hands and wrists. Joint involvement is usually symmetrical, meaning that if a joint hurts on the left hand, the same joint will hurt on the right hand. In general, more joint erosion indicates more severe disease activity.</p> <p>Other common physical symptoms</p>	<p>While each person is an individual and may be affected differently by osteoarthritis, we will discuss the general symptoms you want to look for if you suspect you have arthritis. Remember, it is crucial that you go to your doctor for a diagnosis before you treat your OA. Several other conditions seem similar to OA, but are treated in different ways.</p> <p>While many people think of OA as the inevitable result of aging and wear on the joints, this isn't true. The knees, hips, fingers, neck and lower back are</p>

include:

- Fatigue
- Stiffness, particularly in the morning and when sitting for long periods of time. Typically, the longer the morning stiffness lasts, the more active your disease is.
- Weakness
- Flu-like symptoms, including a low-grade fever
- Pain associated with prolonged sitting
- The occurrence of flares of disease activity followed by remission or disease inactivity
- Rheumatoid nodules, or lumps of tissue under the skin, appear in about one-fifth of people with RA. Typically found on the elbows, they can indicate more severe disease activity.
- Muscle pain
- Loss of appetite, depression, weight loss, anemia, cold and/or sweaty hands and feet
- Involvement of the glands around the eyes and mouth, causing decreased production of tears and saliva (Sjögren's syndrome)

Advanced changes to look out for include damage to cartilage, tendons, ligaments and bone, which causes deformity and instability in the joints. The damage can lead to limited range of motion, resulting in daily tasks (grasping a fork, combing hair, buttoning a shirt) becoming more difficult. You also may see skin ulcers and a general decline in health. People with severe RA are more susceptible to infection.

The effects of rheumatoid arthritis can vary from person to person. In fact, there is some growing belief that RA isn't one disease, but it may be several different diseases that share commonalities.

most commonly affected by OA, while the knuckles, wrists elbows, shoulders and ankles are rarely affected except in usually cases of overuse or injury. "If OA was caused by simple wear and tear, you would expect these body parts to be affected more often," notes David S. Pisetsky, MD, in his book *The Duke University Medical Center Book of Arthritis*.

Most often, OA develops gradually. It may start as soreness or stiffness that seems more a nuisance than a medical concern. Pain may be moderate, intermittent and not interfere with your day-to-day existence. Some people's OA will never progress past this early stage. Others will have their OA progress to a point where it interferes with daily activities and pain and stiffness make it difficult to walk, climb stairs or sleep. Rarely, a person with OA will experience sudden signs of inflammation such as redness, pain and swelling, known as inflammatory or erosive osteoarthritis.

The most common signs and symptoms of osteoarthritis are:

- Joint soreness after periods of overuse or inactivity.
- Stiffness after periods of rest that goes away quickly when activity resumes.
- Morning stiffness, which usually lasts no more than 30 minutes.
- Pain caused by the weakening of muscles surrounding the joint due to inactivity.
- Joint pain is usually less in the morning and worse in the evening after a day's activity.
- Deterioration of coordination, posture and walking due to pain and stiffness.

If OA is in the hips, you may experience:

- Pain in groin, inner thigh and buttock
- Referred pain in knee and side of thigh
- Limping when walking

If OA is in the knees, you may experience:

- Pain when moving the knee
- Grating or catching when moving the knee
- Pain when walking up and down stairs or getting up from a chair
- Pain that prevents you from exercising your leg
- Weakened large thigh muscles

If OA is in the fingers, you may experience:

- Pain and swelling of the finger joints

		<ul style="list-style-type: none"> ▪ Bony growth spurs at the joint at the end of the finger, called Heberden’s nodes, or at the middle joint, called Bouchard’s nodes. ▪ Redness, tenderness and swelling in the affected joints, especially early on when the nodes are forming ▪ Enlarged joints ▪ Difficulty with pinching movements, such as picking an item up from a table or grasping a pencil or pen. <p>If OA is in the feet, you may experience:</p> <ul style="list-style-type: none"> ▪ Pain and tenderness in the large joint at the base of the big toe ▪ Pain when wearing tight shoes or high heels <p>If OA is in the spine, you may experience:</p> <ul style="list-style-type: none"> ▪ A breakdown of the spinal discs resulting in bony overgrowth ▪ Stiffness and pain in the neck and lower back ▪ Pressure on the nerves in the spinal cord (pinched nerves) ▪ Pain in the neck, shoulder, arm, lower back and legs ▪ Weakness or numbness in arms and legs due to pinched nerves result in inflammation. <p>Osteoarthritis most commonly occurs in the weight-bearing joints of the hips, knees and lower back. It also affects the neck, small finger joints, the base of the thumb and the big toe. OA rarely affects other joints except when injury or stress is involved.</p> <p>It is important that you take an active role in the treatment of your OA and in prevention of additional joint damage. There are even steps you can take to lower your risk for developing OA at all.</p> <p>The most important thing you can do if you suspect you have any form of arthritis is to get a proper diagnosis and begin early, aggressive treatment. There are several other conditions that are similar to OA, including rheumatoid arthritis, that have different treatment plans. It is important that you are being treated properly for your arthritis. You should also know that treatment may change as the disease progresses or improves.</p>
<p><u>How is it diagnosed?</u></p>	<p>Diagnosing rheumatoid arthritis is a process. There isn’t a sure-fire test that can tell you positively that you have RA. Instead your doctor relies on a number of tools to help him determine the best treatment for your symptoms.</p> <p>A diagnosis will be made from a medical history, a physical exam, lab tests and X-</p>	<p>Early diagnosis and treatment is the key to controlling osteoarthritis. Your doctor will take a medical history and perform a physical exam to assess your disease activity. He or she may use X-rays to confirm or strengthen a diagnosis, although most people over 60 reflect OA on X-ray while only 1/3 have actual symptoms.</p> <p>If you have osteoarthritis, you may be treated by</p>

rays.

Medical History

Medical history probably is your doctor's best tool for diagnosing rheumatoid arthritis. The more your doctor knows about you, the faster and better he will be able to diagnose your condition and determine the best treatment for you. Taking a medical history is the first line to finding out if you have rheumatoid arthritis. What you tell him will allow him to determine if RA should be considered a possible diagnosis or if he should look in another direction.

Following is a list of questions your doctor might ask in a medical history:

- Do you have joint pain in many joints?
- Does the pain occur symmetrically – that is, do the same joints on both sides of your body hurt at the same time? Or is the pain one-sided?
- Do you have stiffness in the morning?
- When is the pain most severe?
- Do you have pain in your hands, wrists and/or feet?
- If you have pain in your hands, which joints hurt the most?
- Have you had periods of feeling weak and uncomfortable all over? Do you feel fatigued?

You may have to answer these questions at every office visit so your doctor can best evaluate your pain and functionality status. You also might find yourself taking a self-report questionnaire. These are developed to help the doctor assess the impact of RA on your daily life. Two of the most common are the Health Assessment Questionnaire (HAQ) and the Arthritis Impact Measurement Scales (AIMS).

Physical Exam

Your doctor also will perform a physical exam to determine diagnosis and at most following office visits. He will be looking for common features reported in RA, including:

- Joint swelling
- Joint tenderness
- Loss of motion in your joints
- Joint malalignment

many different health professionals, but more than likely, it will be your primary care physician who diagnoses you. Depending on the severity of the disease and how it reacts to initial treatment, you may be referred to an arthritis specialist called a rheumatologist. Other health professionals you may encounter along the way may include orthopaedic surgeons, physical therapists and occupational therapists. See A Glossary of Health Professionals for a full list of health care professionals you may have on your arthritis team.

Your doctor will use four main tools to determine your diagnosis: your medical history, a physical exam, X-rays, and joint aspiration. The medical history and physical exam will be what he or she bases the diagnosis on, using tests such as X-rays and joint aspirations to confirm the diagnosis.

Medical History

Medical history probably is your doctor's best tool for diagnosing osteoarthritis. The more your doctor knows about you, the faster and better he will be able to diagnose your condition and determine the best treatment for you. Taking a medical history is the first line to finding out if you have osteoarthritis. What you tell him will allow him to determine if OA should be considered a possible diagnosis or if he should look in another direction.

Your doctor will want to know about your health background, including any diseases or conditions you currently have, any allergies you have to medications or other substances, and surgeries and other medical procedures you've been through. Following is a list of questions your doctor might ask in a medical history:

- What is the main symptom or problem you are having that made you seek medical attention?
- Are there any other symptoms you have been experiencing?
- How long have you been experiencing symptoms? When and how did they begin?
- Do your symptoms affect your ability to work or perform other daily activities?
- Do you have any other medical conditions?
- Have your parents, siblings or other blood relatives been diagnosed with a form of arthritis?

During your medical history, your doctor will want you to describe any pain you are experiencing. Since pain is the number one complaint of people with OA, it is important for you to have a vocabulary that describes your pain accurately. Think about words you can use to describe your pain; is it burning, grinding, sharp or achy? When do you normally notice your pain and other symptoms? Are they tied to an activity or lack of activity? Are your symptoms, including pain, constant, or do they come

- Signs of rheumatoid arthritis in other organs, including your skin, lungs and eyes.

Lab Tests

While there is no one test to confirm whether or not you have rheumatoid arthritis, your doctor may use several different tests and imaging studies to help make a diagnosis. The most commonly used tests are listed below, but not all doctors will use every test and some may use tests not described. You should feel free to fully question your doctor for any tests he or she orders so you understand what it is measuring and why. Most tests ordered to help with diagnosis will only have to be taken once. Tests designed to measure improvement or to check for drug side effects may need to be repeated regularly. For additional information about lab tests, visit Guide to Lab Tests.

Complete Blood Count

There are three types of cells in your blood: red blood cells, which carry oxygen to tissues; white blood cells, which help fight infections; and platelets, which help the blood clot. Each may be tested to check for abnormalities that might exist or to monitor side effects of drugs and check progress.

People with rheumatoid arthritis often have a low red blood count, signally anemia, a common problem for people with RA. Anemia can contribute to feelings of fatigue. People with more aggressive disease tend to have more severe anemia.

White blood cells may be high, signaling that infection is present in your body. A low white blood cell count could suggest Felty's syndrome, a complication of RA, or may be caused by some medications.

Your platelet count is elevated when you have inflammation present in the body. It can also be lowered by certain drugs.

If you take nonsteroidal anti-inflammatory drugs (NSAIDs), your platelet and white blood cell count will be monitored every six months. People taking disease-modifying antirheumatic drugs (DMARDs), will be checked every two to 12 weeks.

Erythrocyte Sedimentation Rate (ESR or sed rate)

The erythrocyte sedimentation rate (ESR) measures the speed at which red blood cells fall to the bottom of a test tube. The more rapidly your red blood cells drop, the more inflammation is present in the body. A high sed rate indicates inflammation and the higher it is, the more severe the RA is.

and go? Have they gotten better, worse or stayed the same throughout time. If your pain increases during the day or becomes worse in the evening, you may have OA.

This is a lot of information to remember. It is a good idea to write down some answers to these questions before you visit the doctor.

Physical Exam

Your doctor also will perform a physical exam to determine diagnosis. He will be looking for common features reported in OA, including:

- Joint swelling
- Joint tenderness
- Loss of motion in your joints
- Joint damage caused by bony growths in or around the joint
- Pattern of affected joints (OA typically affects the thumb base or the top two finger joints in an uneven pattern in the hands and doesn't usually affect the wrists.)

You may be asked to stand so your doctor can determine how your range-of-motion and mobility have been affected.

Lab Tests

Your doctor will probably use lab tests to confirm a diagnosis of osteoarthritis (OA).

- Joint aspiration (or arthrocentesis). This involves draining fluid from the joint for examination. It can help rule out other medical conditions. After applying a local anesthetic, your doctor will insert a needle into the joint and withdraw fluid. The fluid will be examined for evidence of crystals or joint deterioration.
- X-rays. X-rays are used to highlight damage or other changes to cartilage and bone that indicate OA.
- MRI or magnetic resonance imaging. This is essentially a more sophisticated way than X-rays of taking a picture of the abnormalities that can occur due to OA. You lie on a table that slides inside a tunnel-like area that creates a magnetic field around you. It shows more detail than X-rays, without the radiation risk, but it is more expensive as well.

Because there is no sure-fire test that diagnosis osteoarthritis, your doctor will use your medical history, physical exam and lab test results to look for indicators of OA, including:

- Pain, stiffness and limited movement in affected joints.

Your sed rate will be checked frequently to see if treatment is working successfully.

You should note that only about 60 percent people with RA have an elevated sed rate. Because your treatment is based primarily on clinical symptoms, a normal sed rate doesn't mean that you are cured and no longer need treatment for RA.

C-Reactive Protein

C-reactive protein (CRP) is found in the body and is elevated when inflammation is found in the body. The higher the level of CRP the more disease activity is involved. Although ESR and CRP reflect similar degrees of inflammation, sometimes one will be raised when the other isn't. This test may be repeated regularly to monitor your inflammation and your response to medication.

Rheumatoid Factor

Approximately 70 to 80 percent of people with rheumatoid factor (RF) also have rheumatoid arthritis. It is tested by measuring the amount of RF in your body. The higher the amount of RH present in the body, the more active and severe your disease is.

Some people with RA do not have RF in their blood. They are called "seronegative." People with RF in there blood are called "seropositive."

Antinuclear Antibodies (ANA)

This test detects a group of autoantibodies (antibodies against self), which is seen in about 30 to 40 percent of people with RA. Although it commonly is used as a screening tool, ANA testing isn't used as a diagnostic tool because many people without RA or with other diseases can have ANAs.

Imaging Studies

Radiographs (X-rays)

Your doctor may take X-rays of your bones and joints upon diagnosis with RA to provide a valuable baseline for comparison with later X-rays. They show the swelling of the soft tissues and the loss of bone density around the joints – the result of your reduced activity and inflammation. As your disease progresses, your X-rays can show small holes or erosions near the ends of bone s and narrowing of the joint space due to loss of cartilage. Doctors used to wait until the appearance of erosion before beginning aggressive treatment of RA. Now it is widely believed that it is better to treat aggressively before the development of erosion.

- Bony enlargement of the affected joints
- X-rays that might show formation of bone spurs
- Narrowing of the joint space from cartilage loss shown on an X-ray.

Make sure you get the proper information about your diagnosis from your doctor before you leave the office. This includes basic information about your condition and its management. Make sure you ask the following:

- The results of your tests and what these results indicate
- Your treatment options and how they work
- When you should expect results from a prescribed treatment
- Possible side effects of any medications and what to do if you experience side effects
- Which changes in symptoms you should report to your doctor
- Appropriate types of exercise and any lifestyle changes you should make
- Resources for additional information
- When to make your next appointment and what to do between now and then

	<p>Magnetic Resonance Imaging (MRI) A MRI can detect early inflammation before it is visible on an X-ray, and are particularly good at pinpointing synovitis (inflammation of the lining of the joint)</p> <p>Joint Ultrasound Joint ultrasound is a much less expensive way to look for joint inflammation before X-rays show damage. Although not currently used often, this procedure may gain wider use over the next few years as doctors increase their efforts to document early evidence of the disease.</p> <p>Bone Densitometry (DEXA) Bone densitometry is an important imaging study for measuring bone density, used primarily to detect osteoporosis. Osteoporosis may be especially severe in people with RA due to joint immobilization, the inflammatory response itself and the use of certain therapies (such as glucocorticoids) that may hasten bone loss. Some doctors suggest that a bone density test should be part of the evaluation and monitoring of all people with RA, particularly for women after menopause.</p>	
<p><u>Treatment options</u></p>	<p><i>Covered in main body of report above</i></p>	<p><i>Covered in main body of report above</i></p>
<p><u>Who is at risk?</u></p>	<p>Approximately 1.3 million people in the United States have rheumatoid arthritis (RA). It can affect anyone, including children (see Juvenile Rheumatoid Arthritis), but 70 percent of people with RA are women. Onset usually occurs between 30 and 50 years of age.</p> <p>RA often goes into remission in pregnant women, although symptoms tend to increase in intensity after the baby is born. RA develops more often than expected the year after giving birth. (See Pregnancy Prognosis.)</p> <p>While women are two to three times more likely to get RA than men, men tend to be more severely affected when they get it.</p> <p>People with the genetic marker HLA-DR4 may have an increased risk of developing RA. This marker is found in white blood cells and plays a role in helping your body distinguish between its own cells and foreign invaders. (See Causes.)</p>	<p>Osteoarthritis (OA) is the most common type of arthritis in the United States, with nearly 27 million people affected by it. OA of the knee and hips is the most common cause of arthritis-related disability in the U.S. OA is common in all races and backgrounds.</p> <p>It most commonly affects middle-aged and older people, with most people getting it after age 45. Men under age 55 are more likely to have OA than women under 55. After age 55, women are more commonly affected; and, overall, more women have OA than men. It is thought that this is because the broader female hips put more long-term stress on the knees. However, age increases your risk for OA.</p>
<p><u>Resources & We also suggest</u></p>	<p>Self-Management Techniques</p> <p>Having the appropriate diagnosis and medical treatment from your doctor is important in the success of your life with rheumatoid arthritis. Equally important are the things you can do yourself to limit the impact of RA on your life. These include</p>	<p>Depression</p> <p>It is not uncommon for someone with a chronic illness like arthritis to become depressed or feel helpless. It isn't unusual for someone who is living with pain, fatigue and loss of function to feel overwhelmed and anxious about the future. If you do, it is important to recognize these feelings and</p>

staying healthy and fit by balancing exercise, activity and rest, managing stress, depression and fatigue, avoiding joint pain and injury, and using complementary treatments along with your medications.

Exercise

Exercise is an important component in staying healthy when you have RA. Moderate physical activity on a regular basis help decrease fatigue, strengthen muscles and bones, increase flexibility and stamina, and improve your general sense of well-being. Joint flexibility is especially important when you have RA because stiff joints means inability to do daily tasks, such as buttoning a shirt or starting the car. Learn more about the types of exercise that can help you.

Balancing Activity and Rest

It is important to stay active when you have rheumatoid arthritis because you want to keep your joints flexible and healthy. "Use it or lose it," as the saying goes. However, you don't want to push yourself too hard and end up in bed with a flare or doing damage to your joints. So the how do you know how much is too much and find balance in your life? When you are dealing with a disease that causes depression, pain, fatigue and joint damage, how do you manage your life outside of that disease?

The best answer is to listen to your body. "If you feel fatigued, and if an activity causes you pain for more than two hours after you stop, then you need to slow down," advises rheumatologist David S. Pisetsky, MD, PhD, in his book *The Duke University Medical Center Book of Arthritis*. He advises his patients to incorporate several rest periods into their days. This is especially critical if you are experiencing a flare because of the risk of potential joint damage during this time.

Rest is part of the story. The other part is good, healthy activity – not just exercise. Staying active helps you manage your stress and depression as well as helping to improve your sleep and making it less painful to move your joints. Here's some advice on how to manage these issues.

Stress

We all have stress in our lives – both good and bad. Unfortunately, good stress and bad stress can bring on a flare of your RA, which suggests a strong mind-body connection at work. While the typical "fight or flight" response to stressful situations is beneficial most of the time, especially in emergencies, overtime stress can wear

get help working through them.

Mild depression can be helped through social interaction, journaling, posting messages on online discussion boards, exercise or doing something you find fun, such as shopping, taking a walk or seeing a funny movie.

If your depression is something more than just the "blues," it is not something to suffer through silently. Speak to your doctor about finding a qualified professional to work with you to help you feel better and in more control of your life.

Relaxation and Sleep

Learning to relax is an important part of dealing with stress. Here are some techniques you can use to relax.

- **Deep Breathing.** This is as simple as it sounds. Breathing deeply can help you calm down and unwind. And it feels great! Find a quiet place and find five to 15 minutes to practice this every day.
- **Progressive Relaxation.** Progressive relaxation involves lying on your back and, starting with your feet and moving up your body to your face, consciously tensing and relaxing the muscles in your body. Combine with deep breathing for extra relaxation.
- **Creative or Guided Imagery.** Use this with deep breathing and progressive relaxation. Either use a tape of someone speaking or just use your imagination to take your mind on a mini-vacation. Choose a place that you feel you can relax and go there mentally. See every detail and see yourself there refreshed and relaxed.

Other methods of relaxation, such as biofeedback or self-hypnosis, require instruction from a physician or psychologist.

The relaxation techniques above can also help you get to sleep and sleep better. There are other techniques to use to help you get a good night's sleep

- Establish a nightly routine that includes things that relax you, such as reading, drinking hot milk or herbal tea or listening to soothing music.
- Be conscious of your sleep environment. Use your bedroom only for sleep and sex. Don't keep work-related items in the bedroom.
- Take a warm bath before bed to relax your muscles. Keep it quiet. Eliminate noise or cover unwanted noise with a neutral sound from a fan, air-conditioner or "white-noise" machine. Use earplugs and a mask if you need them.
- Choose a good comfortable mattress, good

you down because your body isn't designed to be running on high alert all the time.

It may sound trite to say it helps to put on a happy face, but there is evidence that people with optimistic outlooks and feelings of being in control tend to do better over the long-term than people with less positive feelings about their RA. It is important to learn how to face stressful situations with increased confidence that you can get through them. This will help you take the steps you need to help you to remain healthy through stressful times.

You can take steps to improve your stress-management skills. Here are three steps you can take right now to begin to manage your stress.

- **Identify your stressors.** These are things that add to the stress in your life. They can be good things, like planning a birthday celebration or more frustrating, like being stuck in traffic. One way to discover your stressors is to keep a stress diary, that notes times when you are stressed and your physical and emotional response to that stress. Review your diary at the end of a week and see if you notice a pattern.
- **Eliminate the negative.** This can be a real challenge. We all have things we feel like we have to do that may cause some negative stress. Maybe it's a family reunion or a big presentation at work. You will never be able to eliminate all the negative stress from your life, but, using your stress diary, you may be able to recognize some stressful patterns, times of day, or regular situations. It is here you can make some real changes. Look for ways to ease these stressful situations from doing something differently to using the word "no" when people ask you to do something you don't want to do. This step can be difficult because many times it is the first time you and other people in your life realize you can't do everything. But after a while you will notice the feeling of freedom, which isn't stressful.
- **Develop effective coping mechanisms.** Come up with some positive ways to deal with stressful situations. The ability to be flexible and to deal with change can help you become more capable of managing problems effectively without them stressing you into an arthritis flare. Following are suggestions for

quality sheets and blankets.

- Exercise throughout the day.
- Avoid stress.
- Avoid beverages and foods that contain caffeine, alcohol and tobacco and big meals close to bedtime.

If you still can't sleep, try taking over-the-counter sleep aids or talk to your doctor about getting a prescription to help you sleep.

Don't forget that regular exercise will also help by making your muscles and joints stronger.

- **Massage.** Massage therapy can be a great way to ease the pain and stiffness associated with arthritis, and many doctors recommend massage to their patients with arthritis. Research has shown that massage can decrease stress hormones and depression, ease muscle pain and spasms, increase the body's production of natural pain-killing endorphins and improve sleep and immune function. Make sure you find a massage therapist who is experienced and comfortable working with people with arthritis as some elements of massage may not be appropriate for you.
- **Acupuncture and Acupressure.** Acupuncture and acupressure are ancient Chinese pain relief treatments that are gaining popularity in the United States. In acupuncture, needles are used to stimulate specific points throughout the body. In acupressure, practitioners use their fingers instead of needles. Studies suggest that these methods release endorphins and may have anti-inflammatory properties. Make sure your practitioner is licensed and certified.

handling stressful situations:

- Instead of dwelling on problems, refocus your attention on solving them.
- Develop and use support systems.
- Develop a “safety valve” to use when you need to let off steam, like writing in a journal, exercising or having some quiet time.
- Take good care of your body by eating healthy

Depression

It is not uncommon for someone with a chronic illness like arthritis to become depressed or feel helpless. It isn't unusual for someone who is living with pain, fatigue and loss of function to feel overwhelmed and anxious about the future. If you do, it is important to recognize these feelings and get help working through them.

Mild depression can be helped through social interaction, journaling, posting messages on online discussion boards, exercise or doing something you find fun, such as shopping, taking a walk or seeing a funny movie.

If your depression is something more than just the “blues,” it is not something to suffer through silently. Speak to your doctor about finding a qualified professional to work with you to help you feel better and in more control of your life.

Relaxation & Sleep

Learning to relax is an important part of dealing with stress. Here are some techniques you can use to relax.

Deep Breathing. This is as simple as it sounds. Breathing deeply can help you calm down and unwind. And it feels great! Find a quiet place and find five to 15 minutes to practice this every day.

- **Progressive Relaxation.** Progressive relaxation involves lying on your back and, starting with your feet and moving up your body to your face, consciously tensing and relaxing the muscles in your body. Combine with deep breathing for extra relaxation.
- **Creative or Guided Imagery.** Use this with deep breathing and progressive relaxation. Either use a

tape of someone speaking or just use your imagination to take your mind on a mini-vacation. Choose a place that you feel you can relax and go there mentally. See every detail and see yourself there refreshed and relaxed.

Other methods of relaxation, such as biofeedback or self-hypnosis, require instruction from a physician or psychologist.

The relaxation techniques above can also help you get to sleep and sleep better. There are other techniques to use to help you get a good night's sleep

- Establish a nightly routine that includes things that relax you, such as reading, drinking hot milk or herbal tea or listening to soothing music.
- Be conscious of your sleep environment. Use your bedroom only for sleep and sex. Don't keep work-related items in the bedroom.
- Take a warm bath before bed to relax your muscles. Keep it quiet. Eliminate noise or cover unwanted noise with a neutral sound from a fan, air-conditioner or "white-noise" machine. Use earplugs and a mask if you need them.
- Choose a good comfortable mattress, good quality sheets and blankets.
- Exercise throughout the day.
- Avoid stress.
- Avoid beverages and foods that contain caffeine, alcohol and tobacco and big meals close to bedtime.
- If you still can't sleep, try taking over-the-counter sleep aids or talk to your doctor about getting a prescription to help you sleep.

Don't forget that regular exercise will also help by making muscles and joints stronger.

© Copyright 2008, Arthritis Foundation.

<http://www.arthritis.org/>

APPENDIX B

Handout on Rheumatoid Arthritis Medications

This tablet is for people who have rheumatoid arthritis, as well as for their family members, friends, and others who want to find out more about the medications for treating or managing this disease..

Medications	Uses/Effects	Side Effects	Monitoring
Analgesics and Nonsteroidal Anti-inflammatory Drugs (NSAIDs)	<p>Analgesics relieve pain; NSAIDs are a large class of medications useful against pain and inflammation. A number of NSAIDs are available over the counter. More than a dozen others—including a subclass called COX-2 inhibitors—are available only with a prescription.</p>	<p>NSAIDs can cause stomach irritation or, less often, can affect kidney function. The longer a person uses NSAIDs, the more likely he or she is to have side effects, ranging from mild to serious. Many other drugs cannot be taken when a patient is being treated with NSAIDs because they alter the way the body uses or eliminates these other drugs. NSAIDs sometimes are associated with serious gastrointestinal problems, including ulcers, bleeding, and perforation of the stomach or intestine. People over age 65 and those with any history of ulcers or gastrointestinal bleeding should use NSAIDs with caution.</p>	<p>Check with your health care provider or pharmacist before you take NSAIDs. Before taking traditional NSAIDs, let your provider know if you drink alcohol or use blood thinners or if you have any of the following: sensitivity or allergy to aspirin or similar drugs, kidney or liver disease, heart disease, high blood pressure, asthma, or peptic ulcers.</p>
Acetaminophen	<p>Nonprescription medications used to relieve pain. Examples are aspirin-free Anacin*, Excedrin caplets, Panadol, Tylenol, and Tylenol Arthritis.</p>	<p>Usually no side effects when taken as directed.</p>	<p>Not to be taken with alcohol or with other products containing acetaminophen. Not to be used for more than 10 days unless directed by a physician.</p>
Aspirin <i>Buffered Plain</i>	<p>Aspirin is used to reduce pain, swelling, and inflammation, allowing patients to move more easily and carry out normal activities. It is generally part of early and ongoing therapy.</p>	<p>Upset stomach; tendency to bruise easily; ulcers, pain, or discomfort; diarrhea; headache; heartburn or indigestion; nausea or vomiting.</p>	<p>Doctor monitoring is needed.</p>
Traditional NSAIDs <i>Ibuprofen Ketoprofen Naproxen</i>	<p>NSAIDs help relieve pain within hours of administration in dosages available over-the-counter (available for all three medications). They relieve pain and inflammation in dosages available in prescription form (ibuprofen and ketoprofen). It may take several days to reduce inflammation.</p>	<p>For all traditional NSAIDs: Abdominal or stomach cramps, pain, or discomfort; diarrhea; dizziness; drowsiness or lightheadedness; headache; heartburn or indigestion; peptic ulcers; nausea or vomiting; possible kidney and liver damage (rare).</p>	<p>For all traditional NSAIDs: Before taking these drugs, let your doctor know if you drink alcohol or use blood thinners or if you have or have had any of the following: sensitivity or allergy to aspirin or similar drugs, kidney or liver disease, heart disease, high blood pressure, asthma, or peptic ulcers.</p>
Corticosteroids	<p>These are steroids given by mouth or injection. They are used</p>	<p>Increased appetite, indigestion, nervousness, or restlessness.</p>	<p>For all corticosteroids, let your doctor know if you have one of the following: fungal infection,</p>

	to relieve inflammation and reduce swelling, redness, itching, and allergic reactions.		history of tuberculosis, underactive thyroid, herpes simplex of the eye, high blood pressure, osteoporosis, or stomach ulcer.
<i>Methylprednisolone</i> <i>Prednisone</i>	These steroids are available in pill form or as an injection into a joint. Improvements are seen in several hours up to 24 hours after administration. There is potential for serious side effects, especially at high doses. They are used for severe flares and when the disease does not respond to NSAIDs and DMARDs.	Osteoporosis, mood changes, fragile skin, easy bruising, fluid retention, weight gain, muscle weakness, onset or worsening of diabetes, cataracts, increased risk of infection, hyper-tension (high blood pressure).	Doctor monitoring for continued effectiveness of medication and for side effects is needed.
Disease-modifying antirheumatic drugs (DMARDs)	These are common arthritis medications. They relieve painful, swollen joints and slow joint damage, and several DMARDs may be used over the disease course. They take a few weeks or months to have an effect, and may produce significant improvements for many patients. Exactly how they work is still unknown.	Side effects vary with each medicine. DMARDs may increase risk of infection, hair loss, and kidney or liver damage.	Doctor monitoring allows the risk of toxicities to be weighed against the potential benefits of individual medications.
<i>Azathioprine</i>	This drug was first used in higher doses in cancer chemotherapy and organ transplantation. It is used in patients who have not responded to other drugs, and in combination therapy.	Cough or hoarseness, fever or chills, loss of appetite, lower back or side pain, nausea or vomiting, painful or difficult urination, unusual tiredness or weakness.	Before taking this drug, tell your doctor if you use allopurinol or have kidney or liver disease. This drug can reduce your ability to fight infection, so call your doctor immediately if you develop chills, fever, or a cough. Regular blood and liver function tests are needed.
<i>Cyclosporine</i>	This medication was first used in organ transplantation to prevent rejection. It is used in patients who have not responded to other drugs.	Bleeding, tender, or enlarged gums; high blood pressure; increase in hair growth; kidney problems; trembling and shaking of hands.	Before taking this drug, tell your doctor if you have one of the following: sensitivity to castor oil (if receiving the drug by injection), liver or kidney disease, active infection, or high blood pressure. Using this drug may make you more susceptible to infection and certain cancers. Do not take live vaccines while on this drug.
<i>Hydroxychloroquine</i>	It may take several months to notice the benefits of this drug, which include reducing the signs and symptoms of	Diarrhea, eye problems (rare), headache, loss of appetite, nausea or vomiting, stomach cramps or pain.	Doctor monitoring is important, particularly if you have an allergy to any antimalarial drug or a retinal abnormality.

	rheumatoid arthritis.		
<i>Gold sodium thiomalate</i>	This was one of the first DMARDs used to treat rheumatoid arthritis.	Redness or soreness of tongue; swelling or bleeding gums; skin rash or itching; ulcers or sores on lips, mouth, or throat; irritation on tongue. Joint pain may occur for one or two days after injection.	Before taking this drug, tell your doctor if you have any of the following: lupus, skin rash, kidney disease, or colitis. Periodic urine and blood tests are needed to check for side effects.
<i>Leflunomide</i>	This drug reduces signs and symptoms and slows structural damage to joints caused by arthritis.	Bloody or cloudy urine; congestion in chest; cough; diarrhea; difficult, burning, or painful urination or breathing; fever; hair loss; headache; heartburn; loss of appetite; nausea and/or vomiting; skin rash; stomach pain; sneezing; and sore throat.	Before taking this medication, let your doctor know if you have one of the following: active infection, liver disease, known immune deficiency, renal insufficiency, or underlying malignancy. You will need regular blood tests, including liver function tests. Leflunomide must not be taken during pregnancy because it may cause birth defects in humans.
<i>Methotrexate</i>	This drug can be taken by mouth or by injection and results in rapid improvement (it usually takes 3-6 weeks to begin working). It appears to be very effective, especially in combination with infliximab or etanercept. In general, it produces more favorable long-term responses compared with other DMARDs such as sulfasalazine, gold sodium thiomalate, and hydroxychloroquine.	Abdominal discomfort, chest pain, chills, nausea, mouth sores, painful urination, sore throat, unusual tiredness or weakness.	Doctor monitoring is important, particularly if you have an abnormal blood count, liver or lung disease, alcoholism, immune-system deficiency, or active infection. Methotrexate must not be taken during pregnancy because it may cause birth defects in humans.
<i>Sulfasalazine</i>	This drug works to reduce the signs and symptoms of rheumatoid arthritis by suppressing the immune system.	Abdominal pain, aching joints, diarrhea, headache, sensitivity to sunlight, loss of appetite, nausea or vomiting, skin rash.	Doctor monitoring is important, particularly if you are allergic to sulfa drugs or aspirin, or if you have a kidney, liver, or blood disease.
Biologic Response Modifiers	These drugs selectively block parts of the immune system called cytokines. Cytokines play a role in inflammation. Long-term efficacy and safety are uncertain.	Increased risk of infection, especially tuberculosis. Increased risk of pneumonia, and listeriosis (a foodborne illness caused by the bacterium <i>Listeria monocytogenes</i>).	It is important to avoid eating undercooked foods (including unpasteurized cheeses, cold cuts, and hot dogs) because undercooked food can cause listeriosis for patients taking biologic response modifiers.
Tumor Necrosis Factor Inhibitors <i>Etanercept</i> <i>Infliximab</i> <i>Adalimumab</i>	These medications are highly effective for treating patients with an inadequate response to DMARDs. They may be prescribed in combination with some DMARDs, particularly	<i>Etanercept</i> : Pain or burning in throat; redness, itching, pain, and/or swelling at injection site; runny or stuffy nose. <i>Infliximab</i> : Abdominal pain, cough, dizziness, fainting, headache, muscle pain,	Long-term efficacy and safety are uncertain. Doctor monitoring is important, particularly if you have an active infection, exposure to tuberculosis, or a central nervous system disorder. Evaluation for tuberculosis is necessary before treatment

	<p>methotrexate. Etanercept requires subcutaneous (beneath the skin) injections two times per week. Infliximab is taken intravenously (IV) during a 2-hour procedure. It is administered with methotrexate. Adalimumab requires injections every 2 weeks. Long-term efficacy and safety are uncertain.</p>	<p>runny nose, shortness of breath, sore throat, vomiting, wheezing. <i>Adalimumab</i>: Redness, rash, swelling, itching, bruising, sinus infection, headache, nausea.</p>	<p>begins.</p>
<p>Interleukin1 Inhibitor <i>Anakinra</i></p>	<p>This medication requires daily injections. Long-term efficacy and safety are uncertain.</p>	<p>Redness, swelling, bruising, or pain at the site of injection; head-ache; upset stomach; diarrhea; runny nose; and stomach pain.</p>	<p>Doctor monitoring is required.</p>

* Brand names included are provided as examples only, and their inclusion does not mean that these products are endorsed by the National Institutes of Health or any other Government agency. Also, if a particular brand name is not mentioned, this does not mean or imply that the product is unsatisfactory.

Source:

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Information Clearinghouse
National Institutes of Health
1 AMS Circle
Bethesda, MD 20892-3675

APPENDIX C

Another source offers the following list of alternate asanas which, in my opinion, may prove to be more challenging, depending on the severity of the arthritic condition. It is also my opinion that they should be performed under the guidance of an experienced yoga teacher/therapist.

Here are the basic Asanas which can help you in dealing with Arthritis:



Easy Pose (Sukhasana)

This is one of the classic Meditative Poses and is usually performed after doing the Corpse Pose. The Easy Pose helps in straightening the spine, slowing down metabolism, promoting inner tranquility, and keeping your mind still.



Single Leg Raises

This Yoga Pose is performed in order to prepare the body for other exercises. It benefits the legs, lower back muscles, and abdominal area. In practicing the Single Leg Raise, one leg is raised while the other one stays on the floor.



Shoulder Stretches

Shoulder Stretches are great in relieving stress and tension on your shoulders, as well as your entire upper back. Practice them daily for several weeks and notice the changes. Learn some basic stretches for the shoulders in this section.



Neck Exercises

Many people hold tension in their necks and shoulders, leading to stiffness, bad posture, and tension headaches. Yoga practice can ease tension, increase flexibility, and tone the muscles. Learn some Neck Exercises in this section.



Standing Side Stretch Pose

The Standing Side Stretch is another Yoga Pose with two lines of energy radiating outward from your center. This is a simple Yoga Posture with a wonderful stretch in which one line of energy reaches upward from your belly and outward through the arm, and one line travels downward through the legs.



Hand Clenching

Hands and wrists are common body parts which are affected by Arthritis, especially Osteoarthritis. Take good care of your hands and joints and always keep them in 'good working condition' by performing the Hand Clenching Exercise.



Wrist Bending

Your wrists can also be affected by arthritis, specifically Osteoarthritis and Rheumatoid Arthritis. Take good care of your wrists through stretching and bending. Learn how to improve the range of motion of your wrists by doing the Wrist Bending Exercise.



Yoga Exercise - Final Corpse

For you to appreciate the benefits of relaxation, you should first be familiar on how it is to be tense. This is what happens when you do the Final Corpse. Everything related to that position including suggestions on how to do it is discussed in further detail in this article.



Ankle Bending

repeated strain or sprain in the ankles can contribute to the occurrence of Ankle Arthritis. Manage stress and keep your ankles in good condition through therapy,

APPENDIX D

Asthi Dhatu: the Bone Tissue

The next dhatu is asthi, the bone tissue, which is the densest tissue in the body. According to Ayurveda, asthi dhatu is predominately made up of Earth, Air, and Water. Earth is about 80 percent, Air about 15 percent, and Water, found in the periosteum, around five percent. Due to the Air molecules, bones are porous. Because asthi dhatu is composed primarily of the Earth element, the intracellular matrix of asthi dhatu is rich in iron, copper, zinc, other minerals, and mineral salts.

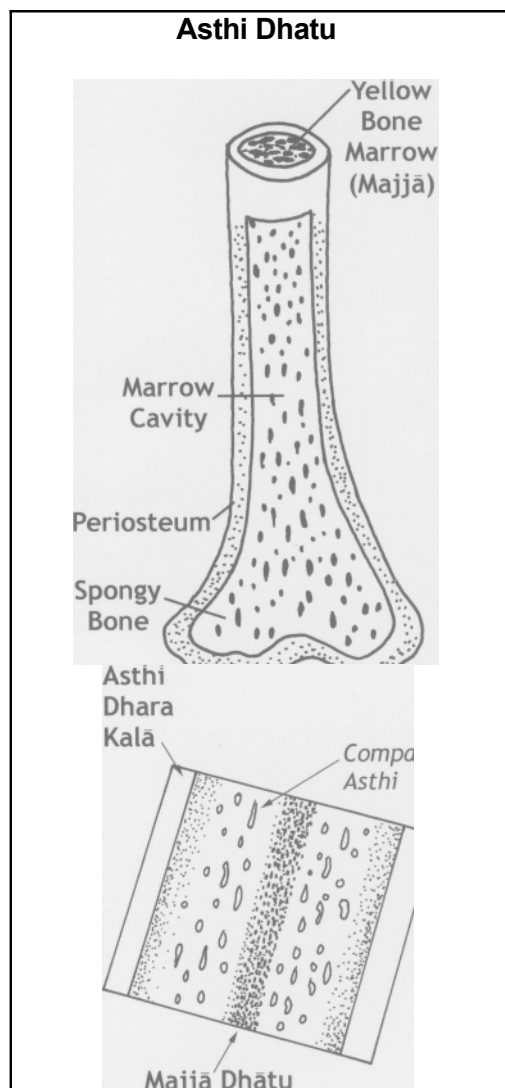
Asthi dhatu provides internal support. It gives shape to the head, face, thorax, limbs, and nose. It protects delicate vital organs-the brain, eyes, ears, tongue, heart, and lungs. The pelvic bones protect the ovaries, fallopian tubes, uterus, colon and prostate gland.

Asthi dhatu creates cranial, thoracic, and pelvic cavities and one of the functions of this dhatu is to confine the cavities, like a wall. If there is no wall, there is no room. The walls of a house create confined space. In the same way, the walls of the skull create the confined space of the cranial cavity, the rib cage creates the thoracic cavity, and the pelvic bones create the pelvic cavity. Bones serve as attachments for the muscles. The muscles need support and for that reason all muscles are attached to the bones by ligaments.

Asthi dhatu also acts as an excretory tissue. The unwanted molecules of toxic heavy metals, such as arsenic, mercury, and lead are retained in asthi dhatu, and the body tries to eliminate them in the nails and hair. In hair analysis, some people show excessive amounts of these metals, which come from the bone. Indirectly, asthi dhatu maintains water electrolyte balance through the molecules of calcium, magnesium, sodium, and potassium.

This dhatu also conducts sound waves that aid in hearing. We hear through both air conduction and bone conduction. All ambulatory movement, locomotion, is governed by asthi dhatu through the joints. Another important function relating to the bones is the formation of red blood cells through the bone marrow. However bone marrow is majja dhatu, which we will discuss in the next section.

Meda dhatu nourishes asthi dhatu. Immature asthi dhatu, called asthayi asthi dhatu, is formed at the same time as sthayi meda dhatu, and this unprocessed dhatu is transformed into processed asthi dhatu by asthi agni, the fire component of asthi dhatu. This transformation takes place through a fine membrane called the periosteum.



The bone, *asthi dhatu*, is composed of compact cells. Inside is the bone marrow. The outer covering is the periosteum, which is called *asthi dhara kala*. As we discussed earlier, *kala* is a membranous structure. *Purisha dhara kala* in the colon absorbs minerals and directs them to the periosteum (*asthi dhara kala*). *Asthi dhara kala* is rich in lymphoid tissue, specialized plasma. Within the periosteum, there is unprocessed *asthi dhatu* and there is *agni*, which transforms the unprocessed *asthi* into processed *asthi*. Part of the unprocessed *asthi dhatu* is *taruna asthi* (cartilage), a specialized form of *asthayi asthi dhatu*. The full transformation of *asthayi asthi* into *sthayi asthi* requires 25 days. Therefore, if there is a fracture of a bone, it takes a minimum of 25 days to heal.

Byproducts of Asthi Dhatu

In the process of this transformation, some byproducts are These are teeth, nails, and hair, and the immature *majja dhatu* (the next *dhatu*). *Danta* (teeth) is the *upadhatu* (superior byproduct); *kesha* (hair) and *nakha* (nails) are *mala* (inferior byproducts). There are no nerve endings (*majja dhatu*) in the nails and hair, and for that reason they do not have sensation of pain. However, *majja dhatu* is present at the root of the hair and nail; if you pull the nail or hair, it will cause pain. If you cut the hair or clip the nail, there is no pain. Thank God! Otherwise, there would be pain with each hair cut.

The hairs of the secondary sexual characteristics (pubic hair, moustache, and axillary hairs) are the superfine products of *asthi dhatu* in relation to *shukra* and *artava*, the reproductive tissue. They are specialized hairs and are not directly functionally connected to *asthi dhatu*. However, the superfine part of *asthi dhatu* (*asthi sara*) is utilized by processed *shukra* or *artava dhatu* to form these hairs from the time of puberty. In young children, the *shukra/artava dhatu* is not yet mature, so a young girl or boy before puberty has no pubic or axillary hair.

By looking at the nails, we can understand the condition of *asthi dhatu*. If *asthi dhatu* is brittle, the nails are brittle. If *asthi dhatu* is strong, the nails are strong. In certain cultures, the nails are thin and brittle because of diet and certain environmental conditions. Some people get a fungus growth in their nails, which may be due to external or internal causes. For example, fungal infection is common in damp, humid weather.

The teachings of Ayurveda convey that *asthi dhatu* is a crystallization of *rasa*, *rakta*, *mamsa*, and *meda dhatus*. People with a *kapha prakruti* will have better *asthi dhatu*, because the Earth and Water components that mostly comprise *asthi dhatu* are predominately present in the *kapha* person. If you compare the x-ray of a femur of a *kapha* person, a *pitta* person, and a *vata* person, the large femur belongs to the *kapha* person, the medium femur to the *pitta* person and the tiny femur to the *vata* person. I was taught to identify the *prakruti* of a person by looking at an x-ray of his or her femur.

Asthi agni, in conjunction with thyroid and parathyroid, maintains calcium metabolism. The thyroid gland secretes a hormone called calcitonin that controls calcium blood levels. Over activity of the thyroid stimulates more and more calcitonin. That dysfunction reduces blood calcium levels. Calcium is needed for blood formation and for the clotting function of blood. If a person's blood does not clot properly, that person is probably lacking calcium. Natural coagulation needs adequate calcium in the blood.

Exactly the opposite happens when the thyroid gland is underactive. Then there is a low level of calcitonin, which raises calcium levels in the blood. Calcium is *needed* for the conduction of impulses to the muscles and for maintaining muscle tone and relaxation. There are many forms of calcium. Calcium citrate is highly absorbable and quick acting. Calcium carbonate has slow, sustained action. Calcium gluconate is good for helping the muscles relax. Ayurveda says to treat the thyroid gland. *Shilajit*, a mineral resin, particularly helps to bring its function back to normal.

Excess vata or pitta can lead to hyperthyroidism, with increased metabolism and loss of weight. When kapha is aggravated, kapha molecules can diminish the agni of the thyroid, leading to hypothyroidism. A person with kapha prakruti has large bones. But in kapha vikruti (disorder) when kapha inhibits the function of the thyroid gland, calcium metabolism is affected. Hypothyroidism slows metabolism and many obese people have underactive thyroid function.

The parathyroid gland secretes a hormone that stimulates osteoblasts to break down the bone tissue and release calcium salts into the blood. If a person has an overactive parathyroid, that person has increased urination, excess thirst, and may even develop osteoporotic changes. The bones lose calcium and the person can get spontaneous fractures, kidney stones, or gallstones. Underactive parathyroid is extremely rare.

According to Ayurveda, asthi dhatu is a crystallization of consciousness. Within the interstitial cellular matrix of asthi dhatu, we carry seeds of past lives. We have lived before. We came here because we were somewhere else. Coming here from somewhere is what we call birth. We are here and we go somewhere else. Going somewhere, by dropping this mortal frame, is called death. Therefore, death is the cause of birth and birth is the cause of death. There is no birth without death and there is no death without birth. Within our bones, we carry the seeds of the desires of our past lives.

Though bone tissue appears to be a hard, compact, supportive mass, it is a living tissue that is sensitive to emotions and feelings. Little changes can create a shift of consciousness. In craniosacral work, a slight shift in the plates of the skull can release emotions and widen the field of consciousness, which is one of the healing factors in this treatment.

Vedic philosophy says that minerals deposit in the periosteum, which is the mother of bone tissue. The periosteum contains thick concentrated calcium, magnesium, iron and other minerals necessary for bone formation. Bone tissue is a rigid, hard, firm connective tissue and, within that tissue, we carry unresolved, crystallized emotions. Desires, emotions, and unresolved hurts are accumulated within the matrix of asthi dhatu. These emotions can affect the function of the parathyroid and thyroid glands as well as formation of bone tissue. Severe bone disorders can indicate a great deal of unresolved and unexpressed emotions.

An asthi sara person has strong bones, good height, strong teeth and thick, strong nails. This person has great endurance, strength, vitality and stamina. A man is as old as his bones, so an asthi sara person has a long life. Asthi sara people are also forgiving, hardworking, and honest.

Disorders of Asthi Dhatu

What are the causes of asthi dhatu dushti? One cause is lack of minerals-calcium, magnesium, zinc, and certain trace minerals necessary for bone health. Nail biting is caused by a deficiency of zinc and calcium, although anxiety, insecurity, and nervousness can also lead to nail biting. Thyroid and parathyroid dysfunction, as well as physical and psychological trauma, may also cause asthi dhatu dushti.

When asthi dhatu is decreased, it is called asthi kshaya. One of the causes of decreased asthi dhatu is increased asthi agni. The increased metabolism burns the calcium, magnesium, and

Causes of Asthi Disorders

Poor diet - especially excessive vata provoking foods, such as dry foods, beans, and leftovers

Lack of minerals

Insufficient or excess protein consumption

Poor posture

Overly vigorous or excessive exercise (beyond one's capacity)

Irregular intense exercise that provokes vata, such as mountain climbing or running

Physical trauma, such as an accident

other mineral salts. White spots develop on the fingernails, the fingernails become brittle and they get ridges and creases. Brittle nails indicate asthi dhatu deficiency. These people may also have many cavities in the teeth. Teeth become brittle and fractures of the crowns may occur. If there is a deep pocket of infection within the gums, the teeth become sensitive to cold because of vata. But when pitta is present and creates inflammation, the teeth become sensitive to hot drinks, indicating the nerve is involved.

Psychological factors, such as trauma, loneliness, insecurity, lack of support

Thyroid and parathyroid disorders

Menopause

Hormone replacement therapy

According to Ayurveda, delayed teething in children is caused by decreased asthi dhatu. The bones become fragile. The mala (inferior byproduct) of asthi dhatu is hair, so a person with asthi kshaya may begin losing hair, caused by high pitta in asthi, or the hair may become brittle and dry or kinky, due to vata. Hair loss can be related to a deficiency of calcium, magnesium, and zinc, or to excess salt consumption, which can provoke pitta in asthi dhatu. Both these causes can result in decreased asthi dhatu.

It is interesting to note that hair loss can also be connected to pituitary dysfunction. If the agni of shukra dhatu is high, which burns shukra dhatu, a person can start losing facial or pubic hair. This loss is connected to hormonal dysfunction of the pituitary, and is not asthi dushti. In addition, it may be connected to the lack of male or female hormones. When a young woman has hair around the nipple, she has difficulty conceiving. According to Ayurveda, hair around the nipple means the woman's body is rich in testosterone, a male hormone. These women may develop endometriosis.

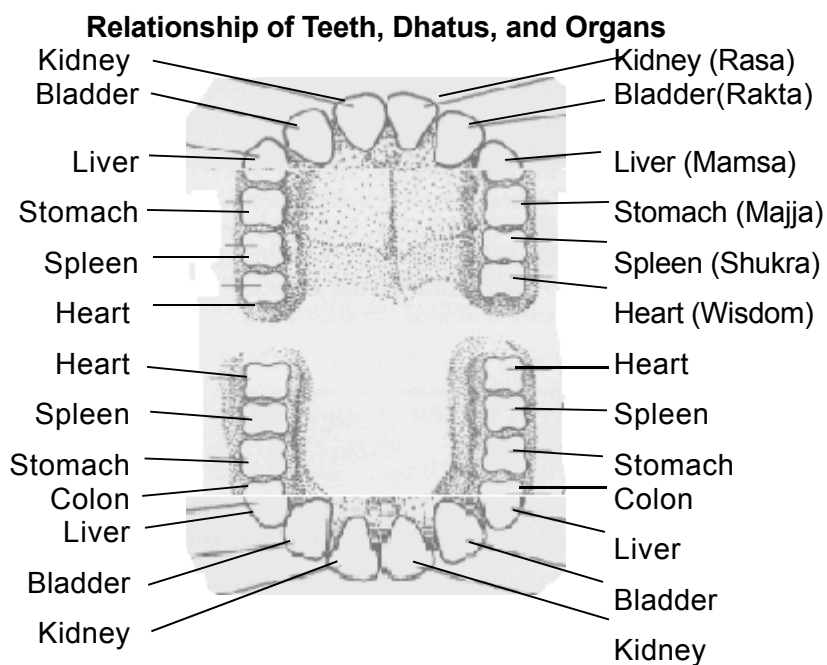
During menopause, asthi agni becomes hyperactive because the body produces less estrogen. When less estrogen is present, asthi agni becomes overactive in an effort to compensate for that lack of estrogen and the agni it contains. The result can be osteoporosis. Eating a vata provoking diet will worsen osteoporotic changes. According to Ayurveda, a woman should take natural herbal estrogen that is present in shatavari and other herbal remedies. Shatavari is effective in preventing osteoporosis during menopausal age. However, if you give a woman synthetic estrogen, her menstruation can return, or she may develop pitta symptoms, because estrogen is pitta provoking. In addition, there is the possibility of cancer. It is more balancing to use natural herbal estrogen, which is present in shatavari, guduchi, and aloe vera, as these all decrease pitta.

Table 18: Signs and Symptoms of Asthi Disorders	
Asthi Vruddhi <i>(Increased Asthi Dhatu)</i>	Asthi Kshaya <i>(Decreased Asthi Dhatu)</i>
Bony protuberances, spurs	Hair loss
Osteomas (bone tumors)	Rough, dry, brittle, crooked nails
Calcification	Osteoporosis (bone loss)
Lordosis (abnormal convex curve of lumbar spine)	Osteo (degenerative) arthritis
Kyphosis (hunchback)	Rheumatoid arthritis
	Arthralgia joint pain)

Bone fusion	Spontaneous fractures
Extra teeth	Shortened height
Excessive hair growth	Scoliosis and spinal misalignment
Scoliosis and spinal misalignment	

Decreased asthi dhatu can also create degenerative arthritis, as well as receding gums. Some people brush their teeth as if they were brushing the toilet. That is hurtful to the gums and may result in receding gums and bone loss in the jaw. On an emotional level, when asthi dhatu is depleted, a person is insecure, lonely, nervous, and ungrounded.

When asthi dhatu is increased (asthi vrudhi), there are often thyroid and parathyroid dysfunctions. There is more deposition of calcium on the bone, creating spurs. There may even be deposition of calcium in the soft tissue, such as the lungs or other organs. A person may get an extra tooth or a wisdom tooth may become twisted. Each tooth is connected to a different organ. For example, the wisdom teeth are connected to the heart and the canines are connected to the liver and eyes.



The teachings of Ayurveda say that toothpaste should be astringent and bitter. If sweet toothpaste is used, the saliva will become thick and will be rich in calcium, leading to the development of tartar on the teeth. Ayurvedic toothpaste is bitter and astringent. It cleans the pockets between the teeth and makes the saliva thin.

After brushing the teeth, before going to bed, place 10 drops of tea tree oil in a small cup of water and swish. Tea tree oil is astringent and bitter. It kills bacteria and is a good antiseptic. It also strengthens the gums. Neem is also a good choice. Brushing the teeth with neem toothpaste will make the saliva thin and the tartar will disappear with no receding gums. Triphala tea is also good for swishing or gargling when brushing the teeth.

Alum, salt, and baking soda are good to remove dead bacteria. Alum is antiseptic and soda is alkaline. They make the teeth shiny. However, sometimes soda erodes the gums and creates inflammation. Once every 15 days, put a little baking soda on your toothbrush

and gently brush the teeth. Salt is strong and will irritate the gums and create gingivitis. Use salt rarely.

Consuming excess kaphagenic food, such as wheat and dairy products, increases asthi. Some people have the habit of taking minerals and vitamins every day. It is usually unnecessary and sometimes difficult to know how much to take. If you take excess vitamin C, it may increase pitta. Excess intake of calcium may create arteriosclerosis and increase the possibility of a heart attack, because calcium is responsible for clotting the blood. A person with varicose veins, caused by clotted blood, should not take too much calcium, because excess calcium may deposit on the clot.

When asthi dhatu is increased, there will be deposition of calcium on the muscle tendons, one of the causes of myofibrosis. In myofibrositis, muscle fibers become inflamed, irritated and the person develops aches and pains. This condition may look like muscular rheumatism. Increased asthi dhatu can also create bony tumors (osteomas) and misalignment of the spine (scoliotic changes). The majority of people have a little misalignment of the spine because of the way they walk. Misalignment of the spine may be present both in increased and decreased asthi dhatu.

Some people grind their teeth, which may indicate deep-seated anger and fear. That action is asthi dhatu dushti. Sometimes children grind due to worms. In adults, worms can create wet dreams, dreams of sex. The female worms hatch eggs around the perineum, which creates a peculiar itching sensation and, in deep sleep, the itching becomes pleasurable. For grinding teeth, chew half a teaspoon of uncooked basmati rice before going to bed. Then brush the teeth and hold a mouthful of warm sesame oil for five minutes and swish. Spit it out and go to bed. Leave a little oil in the mouth. Grinding of the teeth in deep sleep disappears. There are several Ayurvedic herbs will help rid the body of worms.

Textbook of Ayurveda Fundamental Principles of Ayurveda, Volume I,
Vasant Dattatry Lad, M.A.Sc.
Ayurvedic Prss, 2002, pp. 146-155

REFERENCES

Arthritis Foundation, "Disease Center: Rheumatoid Arthritis."

- <http://www.arthritis.org/conditions/DiseaseCenter/RA/default.asp>.
_____, "Exercise and Arthritis: Let's Do Yoga."
<http://www.arthritis.org/conditions/exercise/Yoga/default.asp>.
_____, "Rheumatoid Arthritis: Overview,"
http://www.arthritis.org/conditions/DiseaseCenter/RA/ra_overview.asp.
- Borreo, Marlon, "Yoga for Arthritis - How Can Yoga Help You Deal with Arthritis,"
<http://www.abc-of-yoga.com/yoga-and-health/yoga-for-arthritis.asp>
- Dr. Vishwas Chhabra, Dr. Humeira Badsha Dr.Cathy Leibman, Dr. Ayman Moffi, and Dr. Kok Ooi Kong, "THE BENEFITS OF YOGA FOR RHEUMATOID ARTHRITIS: RESULTS OF A STRUCTURED 8 WEEK PROGRAM," <http://humeirabadsha.blogspot.com/2008/05/yoga-for-arthritis.html>
- Christensen, Alice, *Arthritis: An American Yoga Association Wellness Guide*, New York, Two Streams Books, 2001.
- Devi, Indra, "Arthritis Cleanse Diet," <http://www.hindustanlink.com/yoga/yoga-articles-yoga-arthritis-cleanse-diet.htm>.
- Devi, Nischala Joy, *The Healing Path of Yoga*, New York, Three Rivers Press, 2000.
_____, *The Secret Power of Yoga*, New York, Three Rivers Press, 2007.
- Fishman, Loren and Saltonstall, Ellen, *Yoga for Arthritis: The Complete Guide*, W. W. Norton, March, 2008.
- Garfinkel, Marian, Ed.D., "Yoga as a Complementary Therapy," **Geriatrics & Aging**, March 2006.
- Haslock, I. Monroe, R. Nagarathna, R. Nagandra, H.R. Raghuram, N.V., "Measuring the Effect of Yoga in Rheumatoid Arthritis," South Cleveland Hospital + Yoga Biomedical Trust, Cambridge and Vivekananda Yoga Research Foundation. 21 March, 1994. As reported in <http://www.healthandyoga.com/>
- Hirrschi, Gertrud, *Mudras: Yoga in your Hands*, San Francisco, Weiser Books, 2000.
- Iyengar, B.K.S., *Light on Yoga*, New York, Schocken Books, 1979.
_____, *Yoga: The Path to Holistic Health*, New York, Dorling Kindersley, 2001.
- King, Alicia, "A Yoga Practice and Yoga Therapy Can Ease Arthritis Pain Naturally," Jan 12, 2008, http://yogapilates.suite101.com/article.cfm/yoga_therapy_for_arthritis_pain
- Klaper, Michael. "Nutritional Strategies for Inflamed Joints and Other Conditions."
<http://www.vegsource.com/klaper/nutrition.htm..>
- Kolasinski SL, Garfinkel M, Tsai AG, Matz W, Van Dyke A, Schumacher HR., "Iyengar yoga for treating symptoms of osteoarthritis of the knees: a pilot study," *Journal of Alternative and Complementary Medicine*. (N.Y.) 2005 Aug;11(4):689-93.

Lad, Dr. Vasant, *Ayurveda: The Science of Self-Healing*, Twin Lakes, WI, Lotus Press, 2004.

_____, *Textbook of Ayurveda, Fundamental Principles, Volume I*, Albuquerque, N.M., 2002.

Lasater, Judith, Ph.D., P.T., *Relax and Renew*, Berkeley, CA, Rodmell Press, 1995.

Martin, Sam, "Easing The Pain," *Psychology Today*, 09/01/2001

McCauley J, Tarpley MJ, Haaz S, Bartlett SJ., "Spirituality and Arthritis Outcomes," The Arthritis Foundation, 2008

Meeks, Sara. *Walking Tall: An Exercise and Treatment Program for the Prevention and Treatment of Osteoporosis*. Triad, 1999.

National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases. "Handout on Health: Rheumatoid Arthritis."
<http://www.niams.nih.gov/hi/topics/arthritis/rahandout.htm>.

New South Wales Pranic Healing Centre, www.pranichealing.com.au

The Johns Hopkins Arthritis Center (<http://www.hopkins-arthritis.org/patient-corner/disease-management/index.html>)

- "Yoga for people with Arthritis" (Johns Hopkins) by Steffany Haaz, MFA, RYT
- "Rehabilitation of Older Patients with Arthritis" (Johns Hopkins) by Shari M. Ling, M.D.
- "Complementary & Alternative Therapies For Arthritis" (Johns Hopkins) by Joan Bathon, M.D. and Andrew Bilderback
- "Role of exercise in the Management of Arthritis" (Johns Hopkins) by Susan Bartlett, Ph.D.

Shomon, Mary J., *Living Well with Autoimmune Disease*, New York, HarperCollins, 2002.

Sobel, Dava and Klein, Arthur C., *Arthritis, What Exercises Work: Breakthrough Relief For The Rest Of Your Life, Even After Drugs & Surgery Have Failed*, St. Martin's Griffin, June, 1995

Stiles, Mukunda. *Structural Yoga Therapy: Adapting to the Individual*. Red Wheel/Weiser: Maine, 2000.

_____, Yoga Forums, www.yogaforums.com.

Virya Yoga & Therapies, Discussion of alternative therapies, www.viryayogatherapies.com

White, Ruth, *Working with Your Chakras*, New York, Barnes & Noble Books, 2002.