

*Medical Benefits of*  
***Comprehensive Meditation  
and Easy-Gentle Yoga***

**Physiology and Anatomy  
of AMI's Easy-Gentle Yoga Postures**

By Lee Gabrilovitch BA, RN, LMT



**Results of Recent Clinical Studies  
of Meditation and Yoga**

*Compiled By  
The AMI Medical Education Committee*



**AMERICAN MEDITATION INSTITUTE**  
*Self-Care for Healthy Living*

## **The American Meditation Institute**

The American Meditation Institute is a 501(c)3 non-profit educational organization devoted to providing comprehensive training in mind/body medicine. In its holistic approach to wellness, AMI combines the best of ancient Eastern wisdom and the practicality of modern Western science. AMI offers weekly meditation instruction and easy-gentle yoga classes, in addition to courses and retreats on Ayurveda (an Indian system of natural medicine and self-care), the chakra system and human anatomy, Yoga psychology of the Bhagavad Gita, food as medicine, advaita vedanta and more.

Under the guidance of its founders, Leonard (Ram Lev) and Jenness Perlmutter, the American Meditation Institute provides practical, step-by-step instruction on how to control, conserve and transform our greatest natural resource—the power of thoughts, desires and emotions. These mind/body skills empower individuals to make conscious, discriminating and reliable choices—choices that enhance their physical, mental, emotional and spiritual well-being.

By practicing the scientific techniques taught at AMI, students learn how to construct a practical bridge between their own inner, intuitive quantum wisdom and their actions in the world. This bridge between the inner and outer worlds coordinates all our assets to enable us to experience healthy, creative, loving, nurturing and rewarding relationships.

The curriculum presented at The American Meditation Institute is an educational body of knowledge that neither interferes nor conflicts with any religious or cultural belief. On the contrary, the teachings at AMI helps students of all backgrounds increase their understanding of, and appreciation for every religion and culture, including their own.



## **Physiological Effects of AMI’s Easy-Gentle Yoga**

by Lee Gabrilovitch BA, RN, LMT

### **Much more than stretching: The Neuroendocrine and Psychosocial Benefits**

Dramatic physiological shifts can occur when an individual regularly practices Easy-Gentle Yoga in a quiet space. Regardless of whether these exercises are done as a stand-alone practice or as an integral part of a systematic procedure for meditation, tranquility of the space for practice can stimulate the parasympathetic nervous system, resulting in decreased heart rate and blood pressure, decreased blood levels of cortisol, anti-diuretic hormone, epinephrine and norepinephrine. The tonicity of skeletal muscle decreases; even the laryngeal adductors relax, allowing increased gas exchange. Blood is shunted from skeletal muscle to the digestive, urinary and reproductive tracts. Rates of nutrient absorption and urine filtration increase. Stimulated immune system activities facilitate tissue regeneration. The pituitary gland releases oxytocin, facilitating comfortable interactions with other individuals—thus contributing to a rewarding sense of community.

The principle of non-injury is paramount in the practice of AMI’s Easy-Gentle Yoga. Pushing beyond one’s comfortable capacity may result in cellular damage, increased fibrosis, fascial restrictions and eventual loss of range of motion. Employing the principle of non-injury (*ahimsa*) requires awareness of and respect for sensations of discomfort and pain, and leads to a physical practice that is pain-free, doable and even enjoyable. The mindful practice of Easy-Gentle Yoga can empower participants with regard to their health maintenance.

These psychosocial benefits (neuroendocrine shifts, increased mind/body connection, empowerment with regard to one’s health maintenance) contribute to the dramatic physiological changes that often result from the practice of Easy-Gentle Yoga. Although participants might have felt the aches, pains, lethargy and hopelessness of physical decline prior to beginning these exercises, most individuals feel better after only a few days. They tend to move in a less restricted manner and gain physical confidence as they learn how to enhance the flexibility and health of their own body.

### **Neuromuscular Relearning: Body-Awareness and Sensorimotor Reeducation**

We learn to support and move our bodies using our kinesthetic sense of our somatic tissues. Sensations of the body’s position in space, and movement through space, stream into the central nervous system continuously. This sensorimotor process results in a sense of “normalcy”; proprioceptors establish a resting tension in the muscle, and these tension levels are then mediated involuntarily by the brain stem. Unfortunately, one’s inherited or

learned stance or movement is not necessarily the ideal, and eventually these established patterns may result in pain, fascial restrictions, tissue damage, and limited range of motion. Physical and emotional stressors also cause increased muscle tension, and may result in fatigue, pain, and dysfunction. Chronically increased overall muscular tension leaves us feeling weak, fatigued, and unwell. Easy-Gentle Yoga exercises and stretches increase awareness of muscular and postural habits, offering the kinesthetic sense of where our bodies move freely without pain and where movements are restricted. Kinesthetic awareness allows a conscious, voluntary change in tone levels and postural habits. Awareness of one's body and postural habits is the first step in reeducating the body and developing new postural habits.

### **The Fascial Body: Beneficial Changes in Connective Tissue**

“Fascia”, or combinations of dense regular, dense irregular, areolar and adipose connective tissues, is found most superficially in the dermis of the skin, then penetrates deeper into the subcutaneous tissue layer, and still deeper to bind, wrap, protect and anchor nearly every cell and structure of the body. Fascia varies in consistency throughout the body (tough and fibrous tendons, ligaments, aponeuroses, more pliable myofasciums of muscle, and loose packing material of the dermis, hypodermis, and abdominal fascia), but runs continuously from the top of the head to the soles of the feet.

Fibroblasts, the primary cells of fascia, produce the protein fibers found in the matrix of connective tissue. These protein fibers (mostly collagen) bond tightly to one another, providing the tensile (binding) strength and elasticity of the body's tissues. In the case of injury, trauma, chronic tension, pressure, or immobility, fibroblasts manufacture excessive proteins to protect the area, resulting in “knots”, or “adhesions”, which can be felt as thick, lumpy, banding, ropey or bumpy. Fibrotic areas can become painful fascial restrictions, affecting the circulation of blood, lymph, cerebrospinal fluid, inhibiting neural activity, and restricting range of motion. Structures which were originally functionally separate (muscles lying side by side, tendons within tendon sheaths) lose the ability to glide freely past one another.

Fascial fluid, “ground substance”, surrounds all cells of the body; it is the medium through which all nutrients, gases and metabolic byproducts must travel to and from each cell. The chemical makeup of ground substance is dependent on good nutrition and hydration. Ground substance is highly thixotropic: it softens with heat and movement; thickens with cold and lack of movement. Sedentary habits, chronic muscular tension, poor nutrition and hydration result in thicker ground substance, inhibiting the diffusion of chemicals to and from the cells and negatively impacting the cells' metabolic functions.

Fascial restrictions inhibiting circulation of fluids, both blood and lymph, as well as neural impulses, may result in pain, tingling, numbness, and muscular spasm. These symptoms result in guarding of the area, which leads to further restrictions, and further circulatory and neural inhibition. The answer is movement. Warming, stretching, squeezing, contorting of fascia massages internal organs and facilitates diffusion of gases, nutrients and wastes between capillary beds and cells. It also loosens and releases restrictions around nerves, blood and lymphatic vessels facilitating optimal blood and lymph circulation and neural activity.

## **The Goodness of Breathing: More than Just Gas Exchange**

Awareness of one's breathing calms and focuses. Focus on the breath stimulates the parasympathetic nervous system, increasing the regenerative and healing activity of the body and redirecting blood flow for the purposes of blood filtration and absorption of nutrients. An enhanced sense of wellbeing results from neurochemical and neuroendocrine shifts, which may alleviate anxiety, depression, everyday stress, post-traumatic stress, and stress-related illness.

### **INCREASED INFLOW OF OXYGEN:**

**Promotes digestion due to increased oxygenation of digestive organs**

**Improves function of nervous system**

**Promotes myocardial function**

**Releases tension, reduces stress, induces calm**

Exhalation reflexively inhibits tonic contractions within skeletal muscle. Peripheral nervous system structures are surrounded by skeletal muscle. The trigeminal nerve of the face, the brachial plexus and resulting nerves, and the lumbosacral plexus and resulting nerves are literally in the grip of skeletal muscle fibers. Chronically high muscular tension, caused by stress, injury, trauma, or postural habits, may impinge nerves, resulting in pain, numbness, tingling, and loss of function. Decreased tonicity in chronically hypertonic muscle not only facilitates blood and lymph flow, but also eases neural impingement.

## **EASY-GENTLE YOGA—PART I**

### **Localized Effects of Exercises/Poses**

#### **Positions 1-20:**

Exercises involving the tissues of the face, ears, scalp, eyes, neck and shoulders may relieve: headache, migraine, eye strain/dry eyes, sinus congestion, puffiness, allergy symptoms, TMJ, inner ear congestion, pain and other symptoms of chronic neck and upper back tension and spasm.

#### **THESE EXERCISES CAN PROMOTE:**

- relaxation of frowning and jaw clenching muscles;**
- neuromuscular reeducation of muscles of face, head, neck and shoulders;**
- improved lymphatic drainage and bloodflow;**
- improved movement of lymph through post-auricular and cervical nodes;**
- integration of right and left cerebral hemisphere activity;**
- maintenance of mobility of head and neck;**
- maintenance of appropriate cervical curvature;**
- decompression of cervical discs/maintenance of disc integrity;**

**Positions 19-25:** These exercises address the neck, shoulder girdle, upper extremities and may relieve neck and upper back muscle spasm, pain, headaches/migraines, decreased mobility of head and shoulders, “frozen shoulder”, thoracic outlet syndrome, inflammations of the shoulder joint, respiratory restrictions, and carpal tunnel.

The shoulder girdle supports the two arms, and also provides attachments for several muscles involved in movements of the head. Good mobility and coordination of the joints and muscles of the shoulder, elbow, wrist, and hand are essential for many daily activities of daily living (hygiene, dressing, driving, reaching).

The shoulder joint is particularly vulnerable to inflammations (capsulitis, peri-arthritis,

retractile capsulitis, bursitis, “frozen shoulder”) which greatly limit some or all arm movements. Integrity of the shoulder joint depends mainly on the surrounding muscles. **Shoulder joint restrictions are often due to stiffening of shoulder muscles or related neck muscles, and can be prevented or addressed with appropriate physical activity/therapy.**

“Computer/driving syndrome” results from chronic flexion of the shoulder girdle (medial rotation of the humerus and protraction of the scapulae), hyperflexion of the head, shortened pectoralis muscles and fascia, lengthening and deprogramming of the stabilizers of the scapulae (middle traps, serratus anterior, rhomboids), and elevation (upward movement) of the scapulae. These postural patterns are often movements of protection or guarding as well. The rotator cuff muscles (SITS muscles) surround the joint, and remain partially contracted in order to support the joint and the arm. In the case of debilitating postural patterns (computer, driving, guarding), tendonitis, painful trigger points, and joint immobility can result. Muscles of the upper back (middle traps and serratus anterior) stabilize the scapula; they hold the scapula in place to serve as a stable anchoring point for the arm movers. Upper traps will compensate if middle traps are lengthened or deprogrammed, putting strain on the cervical spine.

The wrist is spanned by tendons of numerous muscles whose bodies are located in the forearm. These are the wrist flexors, extensors, abductors and adductors, and the finger flexors and extensors. Overuse or misuse of the wrists, hands, or fingers may result in inflammation of the tissues in these areas, causing pain, swelling, and decreased range of motion. Musicians, massage therapists, and individuals who work at computers, are examples of those who might develop these issues. **Gentle stretching and range of motion exercises are ideal for relief of inflammation of the joints and fascia of the wrists and hands.**

Consistent practice of these exercises promotes the neuromuscular reeducation of the cervical and thoracic spine stabilizers, as well as the stabilizers of the shoulder joints.

### **THESE EXERCISES CAN:**

- maintain range of motion of neck, shoulders, elbows, wrists, and hands;**
- open intercostal spaces;**
- release fascial restrictions of shoulder, forearm, wrist, ribcage and diaphragm;**
- promote lymphatic drainage of head, neck, upper extremities (particularly cervical and axillary nodes);**
- promote circulation of tissues of head, neck, and upper extremities;**
- loosen joints and fascia of lumbosacral region;**
- increase lymphatic return through thoracic duct;**
- increase venous return through inferior vena cava.**

**Positions: 26-31** These exercises involve the trunk, hip and lower extremities. Stiffness at the hip joints will have adverse effects on the spine, the knee and the foot, all quite common in adults. These exercises maintain ease of movement in the hip joint, preventing or alleviating stiffness. Also, the stability of the knee is dependent on the muscular strength of the thigh and leg.

Deep spinal (postural) muscles become “deprogrammed” after years of slouching in chairs, couches, and car seats. Postural responsibility is transferred to superficial phasic muscles, which results in muscles spasm or diffuse pain. **Neuromuscular reeducation of postural muscles may address a variety of physical ailments, and prevent the aches and pains often attributed to “aging”.**

## **Balancing exercises can strengthen core muscles and realign the body's center of gravity**

### **THESE EXERCISES CAN:**

**release fascial restrictions of ribcage and diaphragm;  
accomplish neuromuscular reeducation of deep spine stabilizers;  
increase mobility and tone of the muscles  
supporting the vertebral column (deep and superficial);  
strengthen hamstrings, quads, gastrocs (knee stabilizers);  
increase lymph flow through popliteal nodes;  
increase venous and lymphatic return of lower extremities;  
redistribute synovial fluid;  
increase range of motion in spine, hip, knee, ankle, foot joints;  
decrease edema of feet and ankles related to cardiac insufficiency,  
inactivity and chronic knee/hip flexion (sitting);  
realign center of gravity;  
maintain disc integrity;  
strengthen toe flexors, which are essential for the stability of the  
ankle and foot (wearing shoes prevents this strengthening of toe flexors).**

Repeated gentle flexion, extension and rotation of the trunk cause the thoracic and abdominal fasciae to massage internal organs, facilitating blood and lymph flow through these organs, as well as releasing restrictions of all thoracoabdominal organs and structures. These are excellent coordination exercises, requiring agonist and antagonist muscles to stabilize and balance the body, resulting in neuromuscular reeducation of postural muscles. The repeated lift of the head (“that gentle lift, lift, lift” after each stretch) results in cervical lengthening, allowing for decompression of cervical discs, as well as cervical realignment.

These exercises counteract the effects of computer/driving syndrome by opening the chest and shoulder muscles, and related fasciae. They may address carpal tunnel, thoracic outlet syndrome, upper back and neck spasms, and provide neuromuscular reeducation to postural muscles of cervical and thoracic spine, and shoulder and scapula stabilizers.

These exercises may also address low back issues through fascial release and increased mobility of the trunk.

The grabbing postures change each day, promoting balance of the right and left sides of the body, and maintaining range of motion of the less dominant side of the body.

### **THESE EXERCISES CAN:**

**stretch the aponeuroses and flexor muscles of the upper extremities;  
strengthen scapula retractors;  
increase lymph and blood flow of upper extremities and axillary regions;  
redistribute synovial fluid in joints of upper extremities;  
release the psoas muscle (often shortened due to extended sitting);  
open intercostal spaces;  
release fascial restrictions of cervical, thoracic, abdominal, and lumbar regions;  
promote neuromuscular reeducation with regard to right and left body balance.**

## Potential Physiological Changes by System

**Respiratory System:** increased gas exchange, decreased mm tension, released fascial restrictions of ribcage and diaphragm; may relieve symptoms of asthma, emphysema, COPD and anxiety

**Nervous System:** increased focus, increased awareness of body, stimulated parasympathetic response, inhibited sympathetic response, homeostasis of pituitary-adrenal axis, neuromuscular reeducation vis-à-vis postural habits, mood benefits, improved craniosacral fluid circulation; may address anxiety, depression, hormonal imbalances, may release neural fascial restrictions, potential for psychosomatic releases

**Muscular System:** decreased systemic muscle tension, strengthened stabilizers (postural mm's, especially deep trunk muscles), released fascial restrictions, facilitated blood and lymph flow; may address somatic pain (fibromyalgia, trigger points, adhesions)

**Skeletal System:** realignment of spine, strengthened bones and joints, released fascial restrictions, increased range of motion/flexibility; may address somatic joint pain

**Endocrine System:** decreased cortisol, epinephrine, norepinephrine levels, decreased ADH/aldosterone levels, increased oxytocin, somatotrophin, increased T3/T4 levels, increased fat metabolism, decreased blood glucose levels and Na<sup>+</sup> levels

**Cardiovascular System:** decreased blood pressure and heart rate, vasomotor changes with regard to reproductive, urinary and digestive function, vascular fascial restrictions released

**Lymphatic System:** facilitated lymph return

**Immune System:** stimulated immune system

**Digestive System:** increased digestive activities; may address digestive issues

**Reproductive System:** increased blood flow to reproductive structures; pituitary-adrenal equilibrium

**Urinary System:** increased blood flow to kidneys

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## Clinical Studies (Meditation)

### **M.D. Anderson Receives \$4.5 Million Grant to Study Yoga—2010**

In an ongoing effort to scientifically validate the age-old belief that mind/body interventions have a beneficial impact on the health of patients, The University of Texas M.D. Anderson Cancer Center has been awarded more than \$4.5 million to study the efficacy of incorporating yoga into the treatment program of women with breast cancer. The grant, the largest ever awarded by the National Cancer Institute for the study of yoga in cancer, will allow researchers to conduct a Phase III clinical trial in women with breast cancer to determine the improvement in physical function and quality-of-life during and after radiation treatment. It will also investigate if such stress reduction programs result in economic and/or work productivity benefit. Lorenzo Cohen, Ph.D., professor and director of M.D. Anderson's integrative medicine program, will be the study's principal investigator. "Research has shown that yoga and other types of mind/body practices, when incorporated into the standard of care, can help improve patient outcomes—particularly quality-of-life," said Cohen. "However, none have become standard of care, or are on the clinical care pathway for cancer patients. This funding will allow us to definitively determine the benefit of incorporating yoga into the treatment plan for women with breast cancer." A secondary aim of the trial, but one of great importance, stressed Cohen, is assessing cost efficiency analysis for the hospital, and health care utilization costs in general, as well as examining work productivity of patients. "In this age of health care reform, it's very important to determine the cost savings, not only to the hospital, but also to women's lives and to their ability to engage in their work in a productive fashion, whether that's the work of being a mother and running a household or working outside the home," said Cohen. "By including such data as cost-effectiveness analyses, we may be able to change the standard of care and the way women with breast cancer are treated in this country."

### **Building a Bigger Brain—2009**

Meditation can build a bigger brain. That's the finding from a group of researchers at UCLA who used high-resolution magnetic resonance imaging (MRI) to scan the brains of people who meditate. A study in the *NeuroImage* journal shows that certain regions in the brains of long-term meditators were larger than in a similar control group. Specifically, meditators showed significantly larger volumes of the hippocampus and areas within the orbito-frontal cortex, the thalamus and the inferior temporal gyrus—all regions known for regulating positive emotions.

### **Immune Boost for Athletes—2008**

During intense exercise (like running) the body's immune system can become compromised because the body believes it's in a dangerous "fight or flight" situation. The body gears up for a perceived threat and the mind prepares for potential injuries by releasing stress hormones (such as adrenaline) into the bloodstream. These hormones produce a burst of energy, but also increase the body's immune suppressor T cells in an effort to reduce inflammation. The British *Journal of Sports Medicine* reports that meditation can actually enhance the immune system of athletes by preventing a large increase in suppressor cell activity during exercise.

### **Lowering Blood Pressure—2008**

Meditation lowers blood pressure without the side effects that can come from medication, according to Dr. James Anderson of the University of Kentucky, who reviewed nine separate studies and found meditation lowered blood pressure an average of 4.7 points on the systolic number and 3.2 points on the diastolic. Anderson claims such reductions could significantly reduce the chances of coronary heart disease.

### **Multiple Benefits—2008**

*NaturalNews.com* recently reported on two important new studies. The first, published in *Diabetes Research and Clinical Practice*, found that Yoga postures and meditation improve blood pressure, blood sugar and triglyceride levels and reduced waist circumference. In the second study, University of Karlstad, Sweden researchers concluded that the daily yogic breathing practices of pranayama significantly lowered levels of anxiety, depression and stress in those individuals participating.

### **HIV Therapy—2008**

Writing in the journal *Brain, Behavior and Immunity*, UCLA researchers concluded that meditation as a stress-management technique can have a direct impact on slowing the progression of HIV while boosting the quality of life for people living with an HIV-positive condition. Researchers found that the more often the volunteers meditated, the higher were their CD4 T-cell counts---the standard measure of how well the immune system is combating HIV.

### **Reducing Heart Disease—2008**

Robert Schneider, M.D., of the Institute for Natural Medicine and Prevention, recently announced the results of a new study that claims when patients with high blood pressure meditated regularly, they had a 23% lower death rate from all causes and a 30% lower rate of cardiovascular disease mortality (such as heart attacks and strokes) compared with non-meditating hypertensive patients.

### **Students Lower Stress—2008**

Dr. Yi-Yuan Tang from the University of Oregon reports in the Proceedings of the National Academy of Sciences that regular meditation can improve attention and lower stress. The study of 40 undergraduates found that participation in twenty-minute meditation sessions over five days showed greater improvement in attention and lower levels of anxiety, depression, anger and fatigue, as compared with students in a control group who participated in relaxation training.

### **Meditation Therapy for Emotions**

For years, psychotherapists have worked to relieve suffering by reframing the content of patients' thoughts, directly altering behavior or helping people gain insight into the unconscious sources of their emotional pain. According to Zindel Segal, a psychologist at the Center of Addiction & Mental Health in Toronto, meditation therapies have become useful psychotherapy techniques over the past decade because they help patients successfully catch-and-release their emotions.

### **Help for Arthritis—2008**

Reporting on an article in *Arthritis Care & Research*, CBS News announced that new research indicates meditation may help people cope with rheumatoid arthritis. In a new study, rheumatoid arthritis (RA) patients reported less psychological distress after practicing meditation for six months, compared with RA patients who did not receive meditation training. Meditation didn't cure RA or erase the physical symptoms, but it appeared to help the patients deal with those symptoms.

### **Mayo Clinic Program—2007**

According to Dr. Amit Sood, director of research at the Mayo Clinic College of Medicine, both meditation and yoga are used in their complementary medicine program. Meditation is used to treat anxiety and high blood pressure and to help people quit smoking without medication. Mayo reports their studies have found that meditation helps patients cope with epilepsy, premenstrual syndrome, menopausal symptoms, autoimmune disease and the anxiety experienced during cancer treatment. When Mayo Clinic patients used yoga postures, the postures was found to be effective for stress relief, lower back pain, carpal tunnel syndrome, osteoarthritis, anxiety and depression. Patients with heart disease and diabetes who practiced yoga breathing techniques and postures had significant improvement in total cholesterol and blood sugar levels.

### **Help for Athletes—2007**

Many people know that meditation can strengthen areas of the brain involved in attention and sensory processing, and that it is more energizing than a nap. But now a study published in the British *Journal of Sports Medicine* finds that meditation also significantly lowers blood lactate levels. This is good news for athletes. It means that after a workout, athletes who meditate are less prone to physical soreness and injury.

### **Prenatal Study—2007**

A new study conducted by the Vivekananda Yoga Research Foundation in India indicates that a daily yoga and meditation practice during a woman's pregnancy appears to improve birth weight, reduce prematurity and diminish overall medical complications for newborn babies.

### **Reducing Hot Flashes—2006**

A study in *The Journal of the North American Menopause Society* suggests that a regular meditation practice may ease hot flashes and improve the quality of life among menopausal women. The stress-reduction program included mindful yoga stretching, seated meditation and body scan visualization. At the conclusion of the study, participants reported that the rate of hot flashes was diminished by 39% while the severity of discomfort decreased by 40%. The women also reported a 28% improvement in the over-all quality of life.

### **New Veterans Study Verifies Mantra Benefits—2006**

A San Diego Veterans Affairs study found that a majority of participants using a mantra could cope better with stressful issues including traffic, work, insomnia, and undesirable thoughts. According to project researcher Jill Bormann, PhD, RN, “Mantras are nonsectarian, portable, invisible, always available, inexpensive, non-pharmacological, and nontoxic.”

### **Studying Early Alzheimer's with Meditation—2006**

Researchers at the University of Pennsylvania School of Medicine's Center for Spirituality and the Mind in Philadelphia are examining the effectiveness of meditation on early cognitive impairment. The study, led by Andrew Newberg, M.D., will try to determine if meditation can lessen, or even help to prevent, cognitive decline in early Alzheimer's disease patients. According to Dr. Newberg, investigators will prescribe a daily meditation practice as an "exercise for the brain. We hope to strengthen the brain and to battle the unknown processes working to weaken it."

### **Meditation Reshapes the Brain and Your Health—2006**

A Massachusetts General Hospital study indicates that meditation thickens the brain's cerebral cortex. This reshaping of the brain's outer layer enhances sensory, auditory and visual perceptions, slows aging and retards memory loss. Participants in the study were average, working people who meditated 40 minutes daily.

### **Helping Your Body Rest—2006**

A British research study presented at the Society for Neuroscience indicates that meditation improves a person's attention levels and that a daily meditation practice can actually be restorative—helping to reduce the harmful effects of sleeplessness.

### **Stress and Disease—2005**

According to Stephanie Oakes, an editor for USA Weekend magazine, the National Institutes of Health claims that 80 to 90 percent of all illnesses are caused by stress. In addition, NIH research has found that daily meditation is more than twice as effective at reducing stress than any other form of relaxation. Commenting on the meditation findings, Ms. Oakes observes "Something more than positive thinking, counseling, morale boosters or traditional exercise is needed."

### **Meditation Extends Lifespan—2005**

New medical research indicates that daily meditation can extend the human lifespan. During long-term clinical trials conducted at the Medical College of Wisconsin, in comparison to non-meditators, meditators experienced 23 percent fewer deaths from all causes, 30 percent fewer deaths from cardiovascular disease, and a 49 percent lower rate of death from cancer. According to Dr. Robert Schneider, Dean of Vedic Medicine at the Maharishi University, "Meditation benefits affect lifespan by strengthening the immune system, improving nervous system activity, reducing stress hormones, and enhancing the individual's capacity to make healthier choices."

### **Meditation and Attention-Deficit Disorder**

Dr. Alarik Arenander, of the Brain Research Institute claims that (TM) meditation can reduce hyperactivity. The Seattle Times reports that children who practice it twice a day have shown marked improvement almost immediately. Arenander claims "Children don't have to rely on a pill to improve behavior. They realize they now have a tool in meditation that makes them who they want to be."

### **Lowering Blood Pressure—2005**

According to the Center for Complementary and Alternative Medicine and the National Heart, Lung, and Blood Institute, men and women who practiced meditation were able to significantly lower their blood pressure. The findings, published in the *American Journal of Hypertension*, revealed that women meditators were able to lower their blood pressure more consistently than male meditators. Although the discrepancy is unexplained, researchers noted that “the women [in the study] did meditate more regularly than the men.”

### **Harvard Study on Meditation—2005**

According to *WebMD*, research (conducted by Dr. David Eisenberg and his colleagues at Harvard Medical School) has recently concluded that meditation is the most beneficial of therapeutic alternatives. And it’s no wonder, when you consider the growing body of medical evidence. Focusing the mind continuously on one thought, phrase or prayer for a period of time naturally leads to a “relaxation response,” changes in the body that are deeply restorative and which accelerate the healing process. These beneficial changes include reductions in heart rate, blood pressure, respiratory rate, oxygen consumption, perspiration and muscle tension, as well as an improvement in immune function.

### **Meditation in Public Schools—2005**

A University of Michigan study concludes that two, ten-minute meditation sessions per day in a public school setting reduces stress in children and teens and promotes emotional stability. Participants within the study group were found to exhibit less verbal aggression, anxiety and loneliness. Based on this study, a growing partnership of Detroit area parents, teachers and physicians are now calling for schools around the country to offer meditation breaks each day. “It wouldn’t be difficult,” a spokesperson said, “and it requires no expensive equipment, no special outfits or footwear.” Since meditation is an educational body of knowledge, proponents claim it would be an appropriate stress reliever in the schools.

### **Boosting Immunity—2004**

For the first time, meditation has been shown to produce lasting beneficial changes in immune-system function, according to Dr. Richard J. Davidson of the University of Wisconsin. The study, which looked at a group of 25 biotech workers who underwent an eight-week meditation training program, is the latest in a growing body of research into the mind/body connection. Toward the end of the eight-week study, flu shots were given to the employees and a group of 16 other employees who did not receive meditation training. When researchers checked for antibodies to the vaccine at one month and two-month intervals, the meditators had significantly higher levels than the non-meditators. On average, the meditators had a 5 percent increase in antibodies, but some had increases of up to 25 percent.

### **Prostate Cancer Study—2004**

ABC television’s *World News Tonight* recently reported that the University of Massachusetts Medical School is conducting a study on a new, alternative therapy for men who have had surgery or irradiation to remove prostate cancer, but who still show signs of the disease. Preliminary findings indicate that when spouses and their husbands meditated together regularly and both ate a mostly vegetarian diet, PSA numbers slowed down their level of increase—and some actually went down. “In eight out of ten patients we had a response,” said urologist Dr. Robert Blute Jr. “In two of the patients it was dramatic.” All participants indicated that they were less anxious and suffered significantly less depression.

## Clinical Studies (Yoga Postures)

### University of Rochester Clinical Oncology Study—2010

Although health insurers don't currently reimburse individuals for yoga and meditation instruction, mounting clinical evidence may convince insurers that these mind/body practices provide significant therapeutic benefits in the treatment of chronic disease. In a recent 410-participant study reported by the American Society of Clinical Oncology, yoga stretching and breathing exercises improved sleep, reduced dependence on sedatives and helped cancer patients resume their routine activities. "Clinicians should now feel pretty comfortable prescribing gentle hatha yoga or restorative yoga for their patients," said Karen Mustian, lead author of the study and assistant professor in the department of radiation oncology and preventive medicine at the University of Rochester Medical Center. "The data from this study is one of the first steps in the direction toward insurance coverage." In the Rochester study, half of the patients were assigned to yoga classes twice a week for one month. By the end of the trial, 31 percent of yoga patients no longer had sleep disruptions, twice the recovery rate of patients who didn't take classes. Yoga practitioners also reported a 42 percent reduction in fatigue, compared with a 12 percent reduction for the control group. Yoga users decreased the use of sleep medication by 21 percent, while the control group actually increased reliance on sleeping drugs by 5 percent.

### The Yoga of Sex—2009

A recent study published in the *Journal of Sexual Medicine* found that women who practiced hatha yoga reported improvements in their sexual relationships. Mindfulness played a key role according to the study, which cited research that found yoga to be beneficial in the sex lives of men as well.

### Fibromyalgia and Arthritis—2008

A new study, published in the *Archives of Internal Medicine*, recommends regular, moderate exercise such as walking, strength training, and Hatha Yoga to alleviate pain caused by fibromyalgia and arthritis. The study observed 135 women exercising three times a week for four months, initially for 30 minutes and increasing to 60 minutes. Pain was reduced by 45 percent after 16 weeks.

### Rheumatoid Arthritis Relief—2008

A recent pilot study in the Arab Emirates revealed that as little as 12 sessions of meditation and yoga postures significantly improved the conditions of rheumatoid arthritis (RA) patients. Out of a total of 47 patients enrolled in the study, 26 undertook Yoga sessions, while a control group of 21 remained on regular treatment. Some patients in the yoga group improved enough to decrease or discontinue RA medications. The study was funded by the Emirates Arthritis Foundation.

### **Yoga Aids Diabetics—2008**

The Journal of Diabetes Research and Clinical Practice reports that new Swedish and Indian studies show that Yoga Science can reverse high blood pressure, obesity, and high blood sugar. In the study triglycerides were significantly lower and “good” HDL cholesterol levels were higher in the Yoga group as compared to a control group.

### **Reducing Anxiety and Depression—2007**

Researchers from the Boston University Medical School have found that a regular yoga practice may increase levels of certain brain substances, low levels of which are linked to depression and anxiety. Currently, pharmaceutical treatment of mood disorders elevates the level of neurotransmitters called gamma-aminobutyric (GABA). The new findings, appearing in the *Journal of Alternative and Complementary Medicine*, suggest that Yoga Science be explored as a possible treatment for depression and anxiety disorders associated with low GABA levels.

### **Reducing Eye Strain—2007**

A recent study published in *Head & Face Medicine*, London, England showed that computer workers who practiced Yoga for 60 days reported experiencing improved visual comfort and reduced “dry eye.” Previous research also has shown the effectiveness of Yoga in reducing eyestrain among people with progressive nearsightedness.

### **Prenatal Study—2007**

A new study conducted by the Vivekananda Yoga Research Foundation in India indicates that a daily yoga and meditation practice during a woman’s pregnancy improves birth weight, and reduces prematurity and overall medical complications for newborn babies.

### **Yoga Science Helpful During Pregnancy**

In a recent article on *newindpress.com*, Dr. Sejal Shah, M.D. states that a consistent Yoga Science practice can produce a healthier maternal environment for pregnancy and a significantly gentler and more harmonious birthing experience for both mother and child. Easy-Gentle Yoga stimulates the reproductive organs to ensure a relatively easy childbirth, ensures optimum blood supply and nutrients to the developing fetus, enhances correct posture, establishes balance between sympathetic and parasympathetic system, improves blood circulation, tones the muscles of spine, abdomen and pelvis, which help to support the added weight of the uterus, and prevents common ailments such as backache, leg cramps, breathlessness and edema in the feet. *Pranayama* (breathing) ensures the abundant supply of oxygen for both mother and child. It induces tranquility and a feeling of wellbeing. It tunes up the nervous system, improves emotional stability, helps to eliminate anxiety, relieves insomnia, high blood pressure and breathlessness, while improving breathing capacity, stamina and vitality—promoting an easy delivery with minimum distress and fatigue. As a therapeutic tool, meditation provides the necessary insight, will power and discrimination for making sound lifestyle choices to help resolve neuroses, fears and conflicts common during pregnancy.



### **Yoga Science Helps Breast Cancer Patients—2006**

In one of the first studies of its kind, the M.D. Anderson Cancer Center in Houston, Texas has announced that women going through treatment for breast cancer felt better when they practiced yoga. “Our belief is that something as simple and brief as a short (yoga) program would be very useful,” at combating side effects from cancer treatment, said Dr. Lorenzo Cohen, a psychologist who led the pilot study. Yoga incorporates meditation, controlled breathing, imagery, stretching, relaxation and physical movements. According to study participant and breast cancer patient Teresita Ladrillo, “There's something to be said for being still.” The National Cancer Institute recently awarded M.D. Anderson a \$2.4 million grant to study the effects of Tibetan yoga on women with breast cancer undergoing chemotherapy.

### **Reducing Hospital Visits—2006**

The Maharishi University reports that mantra meditation (TM) reduces hospitalization rates. Compared to the national average, for the 2,000 meditating patients observed in the study, there was 87% less hospitalization for cardiovascular disease, 55% less for cancer, 87% less for nervous system diseases and 73% less for nose, throat, and lung problems.

### **Listening to Your Body—2005**

A study in the *Psychology of Women Quarterly* reports that daily yogic exercise produces greater body satisfaction and fewer symptoms of eating disorders than traditional aerobic exercise like jogging or using cardio machines. Individuals practicing yoga postures, develop increased sensitivity to bodily sensations and can learn how to respond appropriately to their body's feedback.

### **Yoga and Weight Loss—2005**

According to *WebMD*, a new research study shows that adults of normal weight (ages 45 to 55) who practiced yoga regularly gained an average of 3 pounds less than those who didn't practice yoga. Meanwhile, overweight adults who practiced yoga lost an average of 5 pounds, while those who didn't, gained about 14 pounds during the same time period.

### **Yoga and Meditation in Hospitals—2004**

According to the Chicago Daily Herald, Marianjoy Rehabilitation Hospital in Wheaton, Illinois, regularly uses both meditation and hatha yoga to accelerate patient recovery. Under the guidance of Dr. Gouri Chaudhuri, stroke patients who meditate have shortened their hospital stay by four days and reduced sleep medication by 45 percent. Functions such as bladder control, speech and muscle movement also improved.

### **Yoga and the Lymph System**

According to Dr. Mehmet Oz, a cardiac surgeon at New York Presbyterian Hospital, a regular practice of yoga can massage the lymph system. Lymph is the body's dirty dishwater. A network of lymphatic vessels and storage sacs crisscross the entire body, in parallel with the blood supply, carrying a fluid composed of infection-fighting white blood cells and the waste products of cellular activity. Daily yoga, like AMI's Easy-Gentle Yoga, activates the flow of lymph through the body, speeds up the filtering process and promotes efficient drainage of the lymph.



## **DNA is not Destiny: The Science of Epigenetics and Lifestyle Choice—2008**

There has been myriad evidence through the years that lifestyle/stress management therapies such as meditation, gentle yoga stretching, breathing therapies, and a whole-food, plant-oriented nutritional plan (all part of The Heart and Science of Yoga course curriculum) can significantly decrease disease morbidity. There is a growing base of medical and scientific literature on the effects and benefits of meditation and other lifestyle therapies.

Studies show that lifestyle changes lead to significant biologic changes. The relatively new science of epigenetics is now demonstrating that the expression of our genetic material is influenced by environmental factors. For example, genes are upregulated and downregulated by factors that are, to some extent, under our control. One recent study (done by Dean Ornish, M.D., et.al. and published in *Lancet Oncology*, 2008; September 15) showed that lifestyle changes were associated with an increase in telomerase. (Telomerase is an enzyme that lengthens telomeres, the protective barriers located at the tips of chromosomes, that contain DNA/information. As we age, telomeres tend to progressively shorten in length. This process is believed to be associated with an increased risk of age-related diseases).

We know from neuro-anatomical and functional imaging studies that meditation has the capacity to affect the function of the nervous system. Research has clearly found that lifestyle therapies such as meditation and focused breathing stimulate the parasympathetic nervous system leading to (as expected) improvements in cardiac and respiratory parameters. Herbert Benson, M.D., Director Emeritus of the Benson-Henry Institute and Mind/Body Medicine Associate Professor of Medicine, Harvard Medical School, has studied and proven the positive physiological effects of meditation (which he calls the “relaxation response”) including reductions in heart rate, blood pressure, respiratory rate, oxygen consumption, and muscle tension. He has found that these changes promote health, healing and general wellness. These studies, practices, and results are well-documented in all of Benson’s books including *The Relaxation Response* (1975) and *Mind Your Heart: A Mind/Body Approach to Stress Management, Exercise, and Nutrition for Heart Health* (2004).

**Dean Ornish, MD**  
*The Atlantic, September, 2011*

*“ Our latest research [at the non-profit Preventive Medicine Research Institute] has shown that changing lifestyle changes our genes in only three months—turning on hundreds of genes that prevent disease and turning off genes and oncogenes associated with breast cancer and prostate cancer as well as genes that cause heart disease, oxidative stress and inflammation. We also found that these lifestyle changes increase telomerase, the enzyme that lengthens telomeres, the ends of our chromosomes that control how long we live. Even drugs have not been shown to do this. If we were truly practicing evidence-based medicine, our practice patterns would have shifted away from expensive and relatively ineffective surgical treatments once these randomized controlled trials were published. Yet to many people, these approaches are still considered conservative or conventional medicine, while teaching people to walk, meditate, eat vegetables, and quit smoking—which has been shown to be more effective—is called ‘alternative medicine.’ ”*

**Physicians and Meditation—2009**

A University of Rochester study (Krasner, M.D. et. al., JAMA, 9/23/2009, 302(12)) showed that meditation and the opportunity to share emotions in a nonjudgmental way helps decrease physician stress while enhancing an experience of connectedness between physician and patient. They found that, with meditation practices, physicians experienced a greater sense of well-being and satisfaction with their work.

**The National Standard Database—2008**

The National Standard Database is a tool that describes scientific evidence concerning therapeutic modalities, and stratifies the data according to how strongly it supports or fails to support various modalities, using an A to F scheme, with A being the most convincing positive evidence, and F being the most convincing negative evidence. The National Standard Database gives a grade of “B” to the benefit of meditation on three conditions: quality of life in cancer patients, hypertension, and stress. A grade of “B” indicates good scientific evidence. One study on a “B” list condition, a meta-analysis, or review of several studies, is of particular significance. In the *American Journal of Hypertension*, 2008 Mar, 21(3):310-316, the authors concluded that the regular practice of transcendental meditation may have the potential to reduce systolic and diastolic blood pressure by approximately 4.7 and 3.2 mm Hg, respectively. Reductions in blood pressure of this magnitude are hugely beneficial, and sometimes difficult to achieve with diet and drugs.

## Yoga Science as Mind/Body Medicine

Human beings are not merely physical bodies. We are breathing and thinking beings also—living with complex thoughts, desires and emotions. Yoga Science views the body as a covering outside the mind, and the mind as a covering outside the center of consciousness (the soul). To experience health and well-being, we must properly care for and feed the body, regulate our breath, coordinate the functions of our mind and base all our actions on the inner intuitive wisdom of our spirit, as reflected by the conscience (*buddhi*).

Our individual achievement of optimal health requires a reliable blueprint for mind/body self-care. With active and discriminating participation in our own health management, we can form a healing partnership with our physicians—and stop working against our own best interests.

It is our belief that the basis of every effective mind/body self-care program is meditation. The word meditation is derived from the Latin *mederi*, meaning to heal. The words medicine, medical and medicate come from the same root word. *Mederi* implies a sense of attending to or paying attention to something in order to facilitate well being. In meditation, you sit quietly and ask the mind to let go of its everyday tendencies to think, analyze, remember, solve problems, and focus on past events or on expectations of the future. Meditation increases theta waves (the electrical waves that appear in the brain just before one falls asleep) while the meditating person remains alert and focused. The experience creates a sense of calm awareness that allows a meditator to overcome the body's natural "fight or flight" stress response to perceived external danger or irritation. This, in turn, slows down the mind's rapid series of thoughts and feelings, and replaces that mental activity with a calm, inner awareness and attention. As a consequence of this quiet, effortless, one-pointed focus of attention, the body and mind both become rejuvenated. Maintaining a daily meditation practice diminishes symptoms of stress, fear, depression, fatigue, high blood pressure and addictions, and the body and mind are free to function to their healthy potential.

Mind/body medicine is an approach to healing that uses the power of thoughts and emotions to positively influence physical health. As Hippocrates wrote, "The natural healing force within each one of us is the greatest force in getting well." Yoga Science, the world's oldest holistic mind/body medicine, presents a comprehensive and time-honored program for well-being.

**The decisions people routinely make about their daily lives are by far the greatest factor in determining their wellness. If people can be introduced to some essential, basic information and be motivated to make more skillful choices, they will experience better health and, as a consequence, lower health-care costs.**

Mind/body techniques such as meditation, diaphragmatic breathing and yoga postures are helpful for many conditions because they promote relaxation, improve coping skills, reduce tension and pain, and lessen the need for medication. For example, many mind/body techniques are used successfully (along with medication) to treat acute pain. Symptoms of anxiety and depression also respond well to mind/body techniques.

Because they improve coping skills and give a feeling of control over symptoms, Yoga Science mind/body techniques are already being used to help treat many diseases beyond those already mentioned. These include: asthma, coronary heart disease, cancer (and the pain and nausea/vomiting related to chemotherapy), insomnia, diabetes, stomach and intestinal disorders (including indigestion, irritable bowel syndrome, constipation, diarrhea, ulcerative colitis, heartburn and Crohn's disease), fibromyalgia and menopausal symptoms such as hot flashes, depression and irritability.



*The Heart and Science of Yoga,*<sup>™</sup>  
the award-winning book by Leonard Perlmutter,  
which forms the basis of the curriculum at  
The American Meditation Institute, is endorsed by:

**Mehmet Oz MD, Dean Ornish MD,  
Larry Dossey MD and Bernie Siegel MD**  
and scores of physicians who have completed  
AMI's mind/body medicine instruction.

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