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# Yoga Hatha Medica: An Integrated Medical Yoga Curriculum

*Michael Cheikin, M.D.*

## Abstract

*A physician describes the evolution of using his Yoga practice to help his patients heal. Over the past two decades he has been developing a curriculum that integrates yogic and medical knowledge bases to enhance each other. Included are considerations of how to apply the "scientific method" to the development of a Yoga practice, as well as case studies.*

## Introduction

It is with great pleasure that for the first time, through the invitation of the Yoga Research and Education Center and the International Association of Yoga Therapists, I am "reporting" on a 20-year experience, working to integrate my Yoga and medical practices. This quest has, true to the nature of Yoga, involved both the personal-subjective and the professional-objective realms on an ongoing basis.

I had been dreaming of integrating my practices of Yoga and medicine for many years, but I did not have the know-how or the courage to declare myself a yogi in the 1980s or even the early 1990s. In working with patients with chronic pain, carpal tunnel syndrome, and fibromyalgia, however, for whom all Western methods had failed, I found myself, in desperation, resorting to what I knew and trusted: Yoga. I would spend 30–60 minutes with a patient, starting with standard physical therapy exercises and then adding breath and consciousness. In each case, my patients would start to heal. At first, I did not tell my patients I was teaching them Yoga. Later, I would call it "yogafying" their exercises. As I moved on with this method, however, I resorted more and more to a standard Yoga practice, beginning with sun salutations, ending with *prânâyâma* and *shavâsana*, as well as teaching important philosophical principles.

## Background

My main interest in becoming a physician was in understanding and working with mind-body phenomena. While in medical school, two critical experiences—one objective and one subjective—profoundly affected me. The first occurred when I conducted research on human perceptual systems. I proved scientifically that people viewing the same exact visual stimulus saw different things, based on the functioning of their nervous system. Here was scientific proof that we cannot ever fully know objective reality, as we all see it differently.

The second experience occurred when my grandfather became ill and died during my second year of school. One of my professors wanted me to miss his funeral in order to take a mid-term exam. A long battle ensued that resulted in my feeling vastly alienated from the medical profession (and from that part of myself) in the face of such inhumanity. While at the time it was extremely painful, this alienation has enabled me, throughout my career, to be sensitive to the inhumanities I otherwise might not observe, both in my colleagues and in myself. This is true even more so now, with the destruction of the health system of our country by the dehumanizing values of corporate America.

In response to this feeling of alienation, I asked myself at age 21 what I needed to do to become restored.

The answer was to study jazz dance classes in New York City (something I had always dreamed of doing) and to start a theater group at the medical school (I had been involved in theater in college). My inner voice somehow communicated to me that an immersion in the "humanities" and the things that I loved would balance the dehumanizing experiences I was encountering as a medical student. Looking back, I realize I also was learning about how I worked subjectively, in contrast to what I was learning in medical school objectively. This experience with music, movement, and emotion led to my studying ballet (with The Joffrey Ballet), the Feldenkrais Method®, and theatrical acting to better understand the training of the emotional system.

By this point I had graduated from medical school. For my residency, I designed a special program combining family practice and psychiatry—still trying to work with the mind, body, and family as the basis of health. After the first year (which constituted my internship), the two certification boards could not agree on a curriculum and required me to choose between the two specialties. Not interested in either alone, I decided to take some time off to further study human movement, emotion, and other subjects.

My work with the Feldenkrais technique reminded me of my first contact with Yoga in high school, and I began to study the Sivananda and Integral Yoga methods, primarily practicing on my own three hours per day and taking occasional classes. I also read extensively on Yoga philosophy and psychology, especially enjoying the works by Yogi Ramacharaka (Yogi Publication Society). I began integrating Yoga with Feldenkrais and putting the poses and *prânâyâma* into rhythmic sequences, borrowing from ballet's use of music to facilitate neural organization.

Putting this work together with classical Yoga psychology, I developed a model of the human percep-

**I began integrating Yoga with Feldenkrais and putting the poses and *prânâyâma* into rhythmic sequences, borrowing from ballet's use of music to facilitate neural organization.**

tual/emotional/motor system. In this model, I integrated the models of Yoga psychology (inner and outer experience, perception, emotion, and action) with the work of Stanislavski (the relationship of sense memory to emotion memory, and action) and the work of Freud (the relationship between past perceptual/emotional experience with the present and future). I also wrote papers entitled "Neurophysiological Basis of the Feldenkrais Technique" and "The Supremacy of the Vestibular System."

During this three-year break from the medical system, I learned about the medical specialty of physical medicine and rehabilitation (PM&R, physiatry), which combines neurology, orthopedics, internal medicine, and several other disciplines to help people with pain and disability rehabilitate in a holistic way. It utilizes much of the information I had been studying.

I entered a residency in this specialty and began to utilize the methods I had developed, especially those involving Yoga and Feldenkrais, for people with chronic pain and neurologic disease. During my residency, I trained in depth in the areas of neurology, orthopedics, kinesiology, and the pathophysiology and pathomechanics of a large scope of medical problems. I became very interested in the problem of chronic pain and began attracting patients who had failed to find relief via the traditional treatments of medication, therapies (i.e., physical, occupational, psychological), and procedures (i.e., surgeries, injections). I would teach them, one on one, how to do Yoga, and they would begin to heal. At this time (1984–1986), I could not call it "Yoga," so I called it "special physical therapy with breath and attention."

I also started a group class in order to utilize social and group interaction, as well as to enable me to spend more time with each patient than the one-on-one sessions allowed. I called this class "Perceptual Reeducation." Though the hospital administration made me jump through many hoops in order to teach it, I flooded them with scientific studies that supported this work and was given permission. As a resident, I did not have to bill for my services, so I offered the class for free.

After residency, I entered clinical practice and again began attracting patients with a wide range of chronic conditions. I wanted to restart my Perceptual Reeducation class, but because there was no precedent for such a class in a hospital setting, the financial and malpractice issues seemed overwhelming.

I did continue to teach Yoga one on one, however, but I still did not call it "Yoga."

## Teaching Classes

In 1994, I became Medical Director of the Rehabilitation Hospital in which I worked. With the autonomy that this title provided, as well as a beautiful old chapel in the

hospital that was not being utilized, I resumed teaching classes and lecturing on mind-body medicine. On the East Coast (at least in Philadelphia, a traditional town), Yoga had not yet caught on, especially in medical settings. I was still hesitant to call the class "Yoga," so I first called it "Mind-Body Workshop" and then "Healing Mind, Healthy Body." One of my patients then said to me, "Just get over it and call it 'Yoga.'" The very next day I received a call from a colleague. There was a group of Yoga students who had lost their teacher, and would I be interested in taking over the class? You know the

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saying, "When the student is ready, the teacher appears." Well, the reverse had occurred in my case. My class suddenly increased from 2–3 students to 18!

When I first started teaching the class, I was astonished by what I observed. I had the opportunity to watch my students/patients for 75–90 minutes, rather than the usual 15–30 allotted for an office visit, and I began to understand why they were not healing. They were doing all sorts of things I could not see in the office—such as moving too abruptly, holding their breath, going too far in each pose, etc. I learned a tremendous amount through this process of observing. I also encountered significant resistance from the hospital administration and physicians. The community that the hospital served, however, was glad to have the class available, and the benefits were incontrovertible. Primary care physicians began referring patients to me as a last resort after sending them to virtually every other specialty, including orthopedics, neurology, neurosurgery, rheumatology, chiropractic, and other body work. (I would speculate that many readers of this journal have had similar experiences of being referred to as a last resort.)

Teaching class also made me appreciate the work of Mr. Iyengar in using props to enable people to do poses safely. I began a phase where I studied Iyengar Yoga intensively, and I continue to study it along with several other styles of Yoga. I am now equipped with enough props to provide 3–4 blankets, 2–4 blocks, one belt, and one chair per student in each class, and I strongly suggest that any teacher interested in teaching Yoga to people with medical conditions invest in at least this many props. Bolsters and wall-based supports can help as well. I also incorporated components of Ashtanga Yoga (heat, *vinyasa*, sun salutations) and Kripalu Yoga (inner experience, inner impulse, and the concept of Yoga as "meditation in motion"), as well as other styles into the curriculum, all with some modification and interpretation to ensure safety and clarity.

## What Is Medical Yoga?

When one puts the terms "Yoga" and "Medicine" together, creating either "Medical Yoga" or "Yogic Medicine," along come many connotations. As is true for "Yoga Therapy" or "Therapeutic Yoga," it is easy to imagine a doctor taking out his or her prescription pad and prescribing Yoga, or a therapist doing Yoga on a couch.

I do not envision medical or therapeutic Yoga as implicitly "prescriptive" or "therapeutic," no more than a piano teacher may assign me certain songs to develop my musical skills, or a mentor suggest a particular experience, such as theater, art, or a philosophical text, to help round out my development.

When I have given courses on "Medical Yoga" to Yoga teachers and other instructors, participants often think I am going to give them specific sequences for specific medical conditions. Numerous publications on Yoga provide such sequences, but they have never made sense to me.

As a physician, before I prescribe any treatment for a patient, I first take a history and do a physical exam. No two people with diabetes, headaches, or low back pain will have the same history or physical exam, or require the same treatment. Chinese and Ayurvedic medicine expand further upon this philosophy, individualizing therapeutics based again on a history and physical exam, but expanding their evaluations to cover more planes than do traditional Western evaluations.

In my opinion, to "prescribe," in cookbook fashion, a fixed practice for a diagnosis, rather than creating a practice specifically for a person, is contrary to the principles of Yoga. If Yoga is an art of listening to one's inner voice, then both the teacher and the student, by truthfully listening to and confronting their inner wisdoms, can create a unique practice. Nothing thrills me more, or indicates better that they "get it," than when students/patients share with me a new modification of a practice they intuited, or for the first time express a new insight into an emotional or spiritual aspect of themselves. It is this process that is the source of healing and growing.

True to Pattabhi Jois's well-known statement, "Do your practice and all is coming," I believe that the

practice of Yoga, in and of itself, is inherently healing on multiple planes.

So, if "Medical Yoga" is not a group of sequences of practices for each medical condition, and if Yoga is sufficient by itself, then what is

**As a society, we have the illusion that medicine is all-knowing and will solve all our problems.**

Medical Yoga? The short answer is that I define Medical Yoga as "an integration of yogic and medical sciences." It is a curriculum, a learning methodology or a learning technology, supremely designed by thousands of years of human experience and embellished by the knowledge that medical science has provided in the past 100 years. I have named this curriculum "Yoga Hatha Medica," which is not easy to say, but it puts Yoga first. (A colleague suggested "Medically Informed Yoga," but this also is somewhat cumbersome to say. I also do not really like the Medica or Hatha parts—I trust that the universe [or perhaps a reader] will make suggestions!)

As a society, we have the illusion that medicine is all-knowing and will solve all our problems. At one point the solution was antibiotics, and now it is genetics. This philosophical stance—that science can solve all our problems, called "objectivistic positivism"—is a product of the mind, an illusion. I have proven this time and again, when my patients/students, after Western medicine has failed them (or perhaps I should say, "when they failed themselves with their illusions of Western medicine"), have healed themselves by doing a Yoga practice. In addition, if you review the sociology and history of medicine, it is more a story of economics and politics than science. I am in love with "science" as the pursuit of objective truth, but the history of science and medicine regretfully shows that the truth has often been resisted and sometimes rejected, with the wrong ideas being promulgated by those who have a stake in maintaining the status quo. (At times, the truth's proponents have even been driven crazy by this rejection, as, for example, in the case of Ignaz Semmelweiss.[1])

## Yoga as "Alternative Medicine"

Contrasting traditional medicine with "alternative" medicine, I point out the difference between the concepts of "healing" and "cure." In Western medicine, people expect a "cure," and the quicker the better. "Healing" may require a long journey, however, with hills and valleys, and oftentimes may leave a scar as a reminder. "Cure" implies that we can forget what we experienced and that an external force was the cause and solution to our problem. "Healing," on the other hand, is a multidimensional process that works from the inside out (but also involves our relationship to the universe as well). Scars may be left at one or several levels, and it is our relationship to these scars, to ourselves, to how we attribute meaning to these experiences of ourselves, that makes the difference between wellness and "dis-ease," between ability and disability, between empowerment and handicap.

The integration of mind, body, and spirit is a priority when I "prescribe" a practice in both individual sessions and group classes. I also think about numerous planes of the human being as I design practices. These planes, well articulated in Yoga "physiology," and further elucidated by medical science, are the molecular, mechanical, neurologic, emotional, cognitive, spiritual, and energetic. I also use my medical background to think about physiology, pathophysiology, kinesiology, pathokinesiology, and other body systems.

## Operational Definition of Yoga

In science there exists the concept of an "operational definition," which pertains to a phenomenon not easily objectified that we define by a proposition and then measure. For example, we may define "pain," which is an unmeasurable subjective experience, as "degree of facial grimace." The more pronounced the facial grimace, the more we attribute pain. We remain aware of the limitations of such operational definitions, but they provide us a handle on what we are trying to study.

I have created an "operational definition" for Yoga: Yoga is the combination of attention, movement, and breath. The latter three aspects roughly correlate with mind, body, and spirit. I have found that in teaching Yoga to beginners it is often hard for them to understand what is meant if I say, "Join your mind, body, and spirit." They do, however, know if they are attending and breathing while they move. I have other "definitions" of Yoga, of mind, etc., that I also utilize to help beginners understand concepts that are really quite abstract. (See the sidebar "Mission, Vision, and Principles," which proposes some additional definitions as a work-in-progress.)

# Yoga Hatha Medica:
## An Integrated Medical Yoga Curriculum

*Michael Cheikin, M.D.*

### Mission, Vision, and Principles

A Work-in-Progress
Version 2.1

*Note: As a work in progress, the order, language, and completeness of these statements are not yet optimal. Readers are encouraged to send feedback.*

## Mission

Yoga Hatha Medica, a Yoga curriculum, will be based on the integration of the knowledge bases of yogic and medical science. The practices developed by this approach will provide for the growth of the individual and community, and will assist in the prevention, diagnosis, and healing of a variety of medical disorders. The method will provide the basis for research, teaching, and certification for medical applications of Yoga.

## Vision

1. To integrate the knowledge bases of the yogic and conventional Western medical traditions.

2. To clearly define in precise terms the components of a Yoga practice that will enhance Yoga practice and enable such practice and its effects to be a) measurable, b) repeatable, and c) predictable.

3. To develop specific yogic practices that can prevent, diagnose, and treat medical conditions, either as an adjunctive or as a primary intervention with the goal of a) best outcome, b) use of least resources, and c) optimum satisfaction.

4. The curriculum will be organized to enable it to be taught to appropriate professionals and to be subject to scientific study.

5. The methodology will require and encourage the highest ethical and moral principles, including doing no harm and fostering personal growth and personal responsibility on the part of both the teacher and the student/patient.

## Principles

1. The term *Yoga* has several classical definitions, including "stillness of the fluctuations of the mind," "joining of mind, body, and spirit," and "joining of inner and outer realities." It is proposed that Yoga practice can be "operationally defined" (see text for discussion of "operational definition") as a combination of movement, breath, and attention (concentration). Therefore, all Yoga Hatha Medica activities should include all three components. Yoga is an active process. Yoga also can be defined as "meditation in motion," which means that the mind becomes concentrated on the experience of the body in movement and breath.

2. *Consciousness* is operationally defined as the ability to direct attention. *Awareness* is operationally defined as the ability to attend to a specific realm of perceptual experience. A *conscious movement* is defined as one in which one has total control of all phases, as manifested in the ability, at any point, to reverse direction or change speed. *Mind* is defined as the functions of the body, which include perception, emotion, language, imagination, cognition, memory, and other functions.

3. *Stress* has two definitions, both of which are equivalent, though using slightly different paradigms: a) a deficiency disease of mind-body-spiritual experience and b) an incompatibility between inner and outer states.

4. This method assumes the existence of another form of energy called *prâna*. This energy, while not yet directly measurable, is utilized and enhanced in a Yoga practice. This method also assumes that there is a "physiology" (i.e., an ordered process) by which the energy flows. One may think of a Yoga practice as a means of optimizing the flow of *prâna*.

5. This method also assumes the existence of an "inner wisdom," the source of which is the universal nature of energy and matter, of mind and of spirit. This inner wisdom may manifest in several forms during and subsequent to a Yoga practice.

6. The safety of the student ("student" will be used in lieu of "patient" or "client") must be protected and take first priority. It is the duty of the teacher ("teacher" will be used in lieu of "practitioner" or "therapist") to ensure safety. Safety is conceived as existing on several planes.

7. The "components" of a Yoga practice are those defined by the classic eightfold path. They are *yama* (ethical precepts), *niyama* (personal precepts), *âsana* (postures), *prânâyâma* (breath control), *pratyâhâra* (withdrawal of external senses), *dhâranâ* (concentration), *dhyâna* (meditation), *samâdhi* (loss of subject-object distinction).

8. Yoga can provide for wellness, healing, and growth in the following dimensions of life: physical (mechanical), physiological, mental (perceptual, emotional, and cognitive), spiritual, and social, using several mechanisms that coexist at

various levels of human understanding, including the autonomic nervous system, higher cognitive functions (learning), the endocrine system, and the energetic level.

9. Modern society's concepts of aging and irreversibility are primitive. Most of us are born able to do all Yoga poses. The weakness and inflexibility (physical, mental, and spiritual) that develop with aging are in many cases unnecessary, and in most cases the processes can be slowed or even reversed at any point in life with a Yoga practice.

10. Each component of a practice has a specific "formula" or methodology. For example, each *âsana* has an ideal alignment, which consists of a set of actions used to enter and exit the pose, usually in a priority of order. With respect to *âsana*, *prânâyâma*, and other components, *adaptation* is defined as the use of props or assistive devices, while *modification* is defined as an alteration in the base pose or activity. Both adaptation and modification are utilized to enable a patient to experience a practice with optimum safety and efficacy.

The six phases of a component are: preparation, entry, repose (holding), expansion, exit, and rest/reflection.

11. Specific components of practice can be "prescribed" and "dosed" as any other medical remedy—base activity, adaptation or modification, duration (dosage), and intensity (how far into the component).

An *âsana*, *prânâyâma*, or other component of a practice (such as *pratyâhâra* [withdrawal of senses]) can be both diagnostic and therapeutic at the same time in that it can reveal information to the teacher and student, and at the same time provide corrective experience. Imbalances, asymmetries, and other obstacles on the physical, mental (cognitive and emotional), and spiritual planes are particularly noticeable and provide valuable feedback when practicing Yoga.

12. Breath is a form of biofeedback (information) and of movement. Phases of breath can and should be synchronized with other practice components (such as *âsana*, *dhâranâ*, *dhyâna*, etc.). The four phases of breath are inhale (*pûraka*), pause after inhale (*anta-kumbhaka*), exhale (*recaka*), and pause after exhale (*bahya-kumbhaka*). (See below for the rhythmic aspects of the breath.)

13. Single *âsanas* or single components of a practice are rarely provided in isolation, but are prescribed in sets, which are organized in progressive levels. The first level, a *Sequence*, refers to the specific order of components, which includes number of repetitions, duration of each, number of times per day, variations with time of day, and essential and optional (supplementary) components. This is unlike other areas of medicine, where the order of remedies is often not of concern. Here, the order of components can have a positive or negative effect.

14. Superimposed on a Sequence is a breathing and rhythmic pattern. The rhythmic aspects of each component, especially *âsanas*, include: a) speed of each phase, b) duration of each phase, c) speed of each phase of breath, d) duration of each phase of breath, and e) connections between components—i.e., how they flow into each other.

The possible combinations of components and their phases, breath phases, and rhythmic aspects of each phase provide for an infinite number of ways (permutations) any pose or sequence can be performed. This allows for the individualization and optimization of any program for a student. A *Series* is defined as a specific Sequence with its associated rhythmic and breathing parameters.

15. Each Series may have a certain emphasis, such as forward bending, balancing, breath pattern, chanting, etc. In order to provide a student with a comprehensive experience, Series may be alternated day to day, week to week, or in some other pattern. A rotating or progressive set of Series intended to provide such a comprehensive experience is defined as a *Program*.

16. A Yoga Program needs to be *balanced*, as are nutrients in a diet. A Balanced Yoga Program should contain all the essential elements needed for the student and can be derived from the classic eightfold path (see no. 7 above), as well as specific elements such as: a) awareness, b) relaxation, c) self-observation, and d) spinal motion in six cardinal directions (sagittal flexion and extension, lateral flexion right and left, rotation right and left). A Yoga Program also may need to be modified for seasons of a year or times of day.

17. With respect to attention and movement, the eyes lead the head, which leads the spine.

18. Feedback from teacher to student and back to teacher occurs on several levels. It is the job of the teacher to find the best method(s) to convey information to the student. This may include visual, auditory, kinesthetic, tactile, and imagistic, and/or a combination thereof. There also is an optimal language or communication style one can use. When placing hands on a student, the quality of that touch has several components: a) force, b) direction, c) other tactile messages (rocking, tapping, brushing), and d) rhythmic qualities.

An additional benefit of this operational definition of Yoga is that these three components of a Yoga practice can be measured—and thus can lead to the scientific study of Yoga practice (see below). The classic definition of "joining" of "mind, body, and spirit" is extremely abstract. Can we measure mind and spirit? What are the criteria for joining? What is clear is that if we do not attempt to join mind, body, and spirit, then what we are doing is not Yoga. This is how I make the distinction between Yoga and physical therapy (or any other body therapy). While doing physical therapy, we can be lifting weights with our right leg, talking on the phone with our headset, typing away on our computer, and getting jumped on by the dog. If, however, we hang up the phone, turn off the computer, lock the door, perhaps put on some music, pay attention as we move our arm, and coordinate our breath with our movement, then we are doing Yoga. What is the difference between these two approaches? When practicing Yoga, we use mind (awareness) and spirit (breath) in addition to our body. In hundreds of cases now, by adding breath and awareness to physical therapy programs ("yogafying" the program), we have demonstrated enhanced healing.

## Yoga and Pain

The power of attention and concentration (*dhâranâ)* remains mysterious. When I talk about these concepts, and about human *intention*, I compare our bodies and selves to children. When a child wants our attention, it demands it. And we cannot just pretend to attend, as the child knows if we really are attending or not. For our minds and bodies, the call for attention comes in the form of pain. Often, if we do not "pay attention" to our pain, it gets louder, as a child would do if ignored. If the loudness goes unattended for a long while, the child (and the body) withdraw. Pain is the wisdom of our body speaking in nonverbal terms. It evolved over millions of years to give us important information about when we are going off course.

Part of teaching Yoga philosophy to chronic pain patients is teaching them to find the message in the pain, to invite the pain to provide the critical information that is needed to make them whole. And thus by attending to ourselves, somehow we begin to heal. For chronic pain patients, this truth (*satya*) is the last thing they want to hear. They come to me to make the pain go away. I point out, however, that they have already tried to make it go away with pills, procedures, and therapies. If and when they understand this concept of inviting their pain and then apply it, they do heal. It is the opposite of what we are taught in Western society.

**What is clear is that if we do not attempt to join mind, body, and spirit, then what we are doing is not Yoga.**

## How Medicine Can Inform Yoga

Now that I have described how Yoga can help the practice of medicine, let me go the other way and explain how science can help Yoga. Using the scientific method, we study something in order to prove or disprove an effect, with the goal being predictability. Applying scientific principles to Yoga enables us to 1) better predict an outcome, 2) increase efficiency, and 3) optimize safety. One of the ways to do this is to be as precise and methodical as possible. For individual students/ patients, we make only a few changes at a time and observe the results, both objectively and subjectively. By standardizing the process (not the practice) of how we go about an individual's Yoga practice, we can better observe the outcomes. With irregular variation in style, it is much harder to observe patterns of change or non-change.

I find Patanjali's *Yoga-Sûtra* quite detailed and methodical. What more can science offer? Again, it comes to teaching students how to approach their practice, how to be observant and consistent. If they vary their practice randomly, then I think they do not give themselves the opportunity to observe and predict. For instance, I know exactly how I do *utthita-trikonâsana* (extended triangle). I have lines on my mats and always begin with the same placement. After doing it the same way for a while, I get to know how it feels on many planes, over many days. And then I have the opportunity to systematically vary the pose —make the stance wider, or stay longer, use a chair, change my breathing pattern, etc.

As our *yogâsana* practice matures, we become receptive to our inner light, our intuition, and the practice ultimately becomes an experimental playground that we visit throughout our lives. One of the definitions of "stress" that I offer students is that "stress is a deficiency disease of mind-body experience." A Yoga practice is the treatment for that disease. Just as play is the work of children, Yoga should be the play/work for us all.

## "To Do, or Not To Do Poses?" — That Is the Question

I am often asked to give guidelines on what Yoga poses can and cannot be done with various medical conditions such as hypertension, glaucoma, herniated disc, pregnancy, etc. Unfortunately, medical science does not yet (will it ever?) have the final answer to these questions, but does suggest some guidelines by extrapolation. There are areas where traditional medicine and Yoga overlap in their guidelines—such as "when bending the knee while standing, the knee should aim over the second or third toe, but not extend beyond the toes." When guidelines agree, it is easy to enforce such advice. There are, however, other instances where there are contradictions. For example, twists are viewed as good for the lumbar spine from one viewpoint and bad from the other, inversions are contraindicated during menses from one viewpoint but not the other, and headstand should not be done by those with hypertension or other medical conditions from one viewpoint but not the other.

I have done literature searches on these subjects, and primarily all I have found are opinions rather than conclusions based on well-controlled research. I have found some studies published in Indian medical journals that suggest more benefit than risk from most Yoga practices, but there is much variability. As an example, let's imagine a research study on the effect of headstand on hypertension. We will study two groups of people with hypertension, match them by age, sex, etc., and teach one group headstand and the other something else as a control. We will monitor both groups' blood pressure before, during, and after their practices. This sounds simple, but how will the headstand be taught? What is the overall initial fitness of each person? What is their weight? Have they done Yoga before? What is their emotional/spiritual status? And so on. One can control several of these kinds of variables, but since no two people do the same Yoga pose the same way, it is often difficult to interpret the results of Yoga research.

## Different Research Paradigms

The other major problem with doing research with two large groups of people is that such research can be insensitive to profound effects. As a dramatic example, let's say a new herb is found in the rain forest and it potentially can cure a cancer that has previously been untreatable. The typical paradigm would be to take two groups of 1,000 people with this cancer and match the groups by age, sex, medical history, etc. One group would be given the herb and the other would be given a "placebo" in a double-blinded fashion ("double-blinded" means that the scientist and the subject both do not know what is being provided). Let's say, at the end of the study, there is no statistically significant difference between the two groups. The conclusion is that this herb is "useless" to treat this cancer and is then forgotten.

Let's look in greater detail at these two groups, however. Let's say that in the placebo group of 1,000, 3 people (0.3%) had a remission of their cancer, and in the treatment group, 5 people (0.5%) had a remission, which would not be a statistically significant difference. If you asked the researcher why these eight people had remissions, the explanation would be "placebo" ("mind over matter") or "random" ("we don't know"). What if, however, two of the people in the treatment group had specific genetics that enabled them to respond to this medication? In these two cases, 2/2,000 (0.1%) people indeed had a complete remission due to the medication. Such a finding would be lost, washed out by the 99.9% who did not respond. Such is the case for treatments that sometimes resurface after decades.

Fortunately, there exists methodology to address this issue, which is called "Single Case Research." Before describing it in detail, let's first discuss the issue of "anecdotal" evidence that some use to negate experience. When the word "anecdotal" is used, it means that the result may be a fluke, or a random event, or that the result may be reported idealistically or otherwise incorrectly, and therefore has no meaning to the individual or to society. However, most formal group research as described above begins with such anecdotal observations. After a series of "anecdotal" observations, an observant

**If one is truly observant (*svâdhyâya*), life experience gives us many clues.**

scientist will then design a formal study. If one is truly observant (*svâdhyâya*), life experience gives us many clues. The word "discovery" implies that the knowledge was always there (as does "re-search"). As discussed above, remember that even a well-controlled scientific study, based on truthful observation, can miss important findings, or (as in the case of Semmelweiss) be pooh-poohed by those with vested interests in maintaining the status quo. The word "anecdotal" is sometimes

used by closed-minded people to deny a truth for which they are not yet ready.

As Yoga researchers, however, we have a duty to go to the next level, to convert our "anecdotal" experience to a scientific finding, and "Single Case Research" is one way. It was developed to study medical conditions in which it is virtually impossible to create two matched groups. For example, to study the effect of music on motor control in stroke (which I tried to do years ago) using the typical research paradigm, we would need two large groups of people with stroke. The stroke would need to be to the same extent, affecting the arm and leg of each subject equally. Subjects' dominance would need to be matched as well, as both stroke and music are strongly influenced by which side of the brain is dominant. After we have matched the groups (if we are able to do so), we then have to provide treatment in the same way to the treatment group.

Let's say the treatment involves tapping to a specific rhythmic pattern. Each subject's stroke has affected him or her a little differently, however—each has a slightly different amount of spasticity, or different range of motion. Some have pain with motion and some do not. Some have lost all sensation, whereas some have magnified sensation, etc. It becomes clear that this two-group structure just is not going to work. (I think this happens far more often than most scientists are willing to admit; there is a lot of necessary stretching of the rules in traditional research to get subjects to fit into the boxes we create.)

In the Single Case Research paradigm, each person acts as his or her own control, using what is called an ABAB (or ABBA or BABA) design. In this design, "A" is no treatment (control), and "B" is the treatment we wish to study. Such a study requires some measurement, but it can be adjusted to the individual. During the A phase, we take each individual and measure his or her baseline for a while. We then start the treatment, B, and measure the effect. We then take away B, return to A, and observe the effect. We keep alternating until we are satisfied that we have a good sample of each phase. To answer the question of order of the phases, for some subjects we may start with B, or alternate ABBA. There could also be a C phase if desired. There are clear, scientifically accepted statistical methods for measuring the differences between the A and B phases. When there is a collection of subjects, you can then analyze the set and reach a conclusion about whether B is doing anything that is statistically significant.

**If my students are able to achieve lasting results with their Yoga practice, and every time they stop their practice they feel worse, we have proof that Yoga works.**

Two very important considerations for this design are placebo and duration. The placebo effect can last for a while, up to 3–6 months. It tends to be strongest during the beginning phases, so to do an optimal study BABA should be used for half the subjects. The duration of each phase is also important, because some effects, especially those with alternative medicine, can take months. I have had numerous students/patients feel that Yoga or acupuncture was doing nothing, but after stopping them (a return to "A"), they noticed over the next several months that they would feel worse again.

In some ways, Single Case Research is just "trial and error." You try something for a while, see the effect, and then try something else. However, this process can be subjected to rigorous scientific study and statistical analysis. Most likely, this is how Yoga practice has evolved over the millennia.

In my practice of Medical Yoga, in some way I am doing Single Case Research with each student/patient. By the time they come to me, they have had many periods of doing nothing (A), interspersed with periods of different treatments (B, C, D, etc.). By the time they arrive at my office, they have had plenty of opportunity to experience the placebo effect with other methods and other practitioners. And so, if my students are able to achieve lasting results with their Yoga practice ("treatment"), and every time they stop their practice they feel worse, we have proof that Yoga works. I clearly do not want them to stop their practice to prove that it works, but the natural history of us all is that we have periods of more and less practice intensity. My patients/students evolve to a point where they do their practice at a frequency that works for them.

## Integrating Yoga Practice with Traditional Medicine

Let's consider an individual we'll call "Joe," who has hypertension that is well controlled with medication and who desires to reduce his use of medication through the practice of Yoga, including headstand. What we would do is slowly build a basic Yoga practice, monitoring

Joe's blood pressure on a regular basis. I would insist that Joe acquire a blood pressure cuff and monitor his blood pressure (personal responsibility is an important part of this process). As part of this Yoga practice, he would be given poses such as *adho-mukha-shvanâsana* (downward-facing dog) and supported *sarvângâsana* (supported shoulder stand) to build upper body strength and tolerance to inversion. After a month or so, let's assume his blood pressure has lowered a bit, and Joe has gone back to his primary care physician and negotiated a mild reduction in his medication. Following this reduction, his blood pressure remains stable, and now would be the time to begin adding headstand.

I would start with a very small one—probably against a wall, only lifting the legs for 15 seconds or so, and monitoring both the subjective response and the actual blood pressure. We might do this for a week or so and then gradually increase the intensity and duration of the pose.

This example illustrates another principle I have observed—that each component of practice can be viewed like a medication, with a precise formula, dosage, indication, and contraindication. The "formula" is the precise way in which the practice is structured. We "dose" the practice by the intensity and the duration of each component. Using this approach, most poses and other practice components can be added safely.

In complex cases, in order to enable clear observation of the effect of each pose or other practice component, I will only add one or two things at a time. I also encourage the practitioner to do the practice in the same sequence each time, as a different sequence of the same practice components can have very different mechanical, energetic, and physiologic effects. Instead of adding new components during a particular session, I may re-sequence the same practice and let the new sequence work for a few weeks, again observing any changes in effect.

**A Yoga practice, through the celebration of being alive, supports the emotion of love, and in so doing helps modulate other emotions.**

Implicit in this process is the active participation of students. They are asked (and often "required") to observe themselves in multiple ways—emotionally, energetically, by pain level, by flexibility, by quality of sleep, etc. I also encourage them to listen to their intuition about which practice components may be particularly helpful or hindering. Journaling of various styles is strongly encouraged.

## The Emotional Experience of Yogic Healing

I would next like to briefly discuss the emotional aspects of Medical Yoga. In short, it comes down to one word: love. I use two definitions. The first is that suggested by Scott Peck in his book *The Road Less Traveled.* He defines "love" as "the action one takes to promote growth." And so, in the practice of teaching Yoga, which is essentially a growth process, we are loving ourselves and others. Love is also a powerful emotion characterized by respect, joy in the presence of beauty, and the appreciation of the beauty of life. A Yoga practice, through the celebration of being alive, supports the emotion of love, and in so doing helps modulate other emotions. By spending more time in the realm of love—love of ourselves and others—we begin to change, whether we intend to or not.

I learned early on that recommending psychotherapy to my patients did not work well. While my intention was to help them adjust to the impacts of pain or disability in their lives, they took it as a message that I thought their problems were all in their mind (which they had already been told by other practitioners with whom they had failed to achieve healing). I needed a way to help them learn, grow, and re-balance themselves without suggesting the use of drugs or a psychiatrist's couch, and the Yoga mat was a fine place to start. As already indicated above, I also encourage journaling as a method of developing an "ear" for the inner voice.

## Yoga and Change

This relationship between love and change has become more and more important as I observe myself as a person and as a physician, and as I observe my relationships with my patients/students, staff, and peers. We are all changing through this process of doing Yoga together. I have personally changed over the years by growing more respectful of individual needs and individual timing. I have learned to be more gentle and patient with my patients and myself. True to the "slipping back" nature of growth as discussed in aphorism I.30 of the *Yoga-Sûtra*,[2] which explains that we move forward and backward in our development, and we don't change quickly or linearly (more like a circular zigzag), I place trust in the process and emphasize staying in the now. Some-

times years pass between when patients/students attend one of my lectures, or consult with me, and when they finally appear in a Yoga class. Though to me and my office staff they have "disappeared," in their reality they are going through an internal process of preparing, sometimes on a conscious and at other times an unconscious level. As healers, I believe we can plant seeds and nurture them, we can model our commitment and our own practice, but when the seeds choose to germinate, and how fast they grow, are often not within our control.

**The practice of *âsana* and *prânâyâma* clears the paths for the flow of *prâna* so that the later limbs of practice occur quite naturally.**

Regarding meditation, I subscribe to the notion that the practice of Yoga *âsana* is "meditation in motion." I agree with Mr. Iyengar's discussion in his book *The Tree of Yoga* that to try to teach meditation to beginners by having them sit quietly is fraught with difficulty. There is no way to know where their minds are. However, in doing *âsana* practice, it is very easy to know where the mind is. In teaching *prânâyâma*, I again start with breath during *âsana* and only later introduce *prânâyâma* as a separate discipline. In some ways, I am following the eight limbs of Classical Yoga—my experience both of myself and my students/patients is that *âsana* must precede *prânâyâma*, which must precede *dhâranâ* (withdrawal of the senses), etc., and I have discussed above how I incorporate the discussion and practice of *yama* and *niyama* into the educational experience. I do not think the eight limbs are mutually exclusive, but rather I believe that all eight limbs are touched upon in any practice. With steady practice of *âsana* and *prânâyâma*, "all is coming."

I have also come to believe in (and as a practicing acupuncturist, I have utilized) an "energetic physiology"—an understanding that the practice of *âsana* and *prânâyâma* clears the paths for the flow of *prâna* so that the later limbs of practice occur quite naturally. I talk to my patients/students about energy flow—and I suggest to them that doing a Yoga practice is in some ways like doing acupuncture on oneself. Regarding teaching meditation to my patients/students, there are countless ways to "meditate." As a scientist, I strive to better understand, define, practice, and teach meditation. Since meditation is a nonlinguistic process, I think some of the limitations of discussing it with language are like trying to capture a vastly large thing with a smaller thing.

## Theory into Practice: How the Classes Are Structured

How do we put all this theory into practice? My mission as a physician/Yoga teacher is to bridge the worlds of medicine and Yoga, maximize safety, minimize anxieties for people wanting to try Yoga, and inspire the beginning of a lifelong practice. As a result, I now teach Yoga classes at three levels: medical (gentle)—for those with physical limitations (due to muscle, joint, nervous system, heart, lung, or other impairments), beginner—for those who are new to Yoga, and advanced beginner—for those who are physically fit and have some experience with Yoga.

The structure of a typical Yoga practice, whether taught in individual or group format is as follows (see accompanying "Practice Levels/Sequence" table): 1) centering (quiet sitting or laying over blankets, perhaps with a group chant of *om*), 2) warm-up (gentle stretching of the neck, shoulders, spine), 3) sun salutations (many adaptations for people who cannot get on the floor or are chair bound), 4) standing poses, 5) supine/floor poses (preparatory), 6) quadriped poses, 7) sitting poses and/or restorative poses, 8) back bends (not done after restorative poses), 9) supine poses and side-lying poses, 10) *sarvângâsana* (shoulder stand), 11) abdominal work (*navâsana* [boat] variations and other Pilates-like awareness/strengthening exercises), 12) closing sequence, 13) *prânâyâma*, 14) *shavâsana* (corpse), and 15) meditation. Each component may not be included in each level or each class.

I derived this structure by studying several styles of Yoga and incorporating what I observed to be the advantages of each, as well as incorporating other knowledge bases like Feldenkrais, dance, and the neurophysiology of perception and learning. I believe it is important to bring consistency to a Yoga practice, both to help the student learn what to do at home and to encourage the ritualistic aspects of a Yoga practice that provide both comfort and the opportunity for self-inspection that a disciplined practice provides. I am currently also exploring a structure appropriate for children.

In teaching adult classes, I repeat the beginning (centering and warm-up leading to sun salutations) and ending sequences (supine poses and bridge/shoulder stand leading to corpse) almost every week. I give specific instructions on how to gradually begin practicing these elements

YOGA HATHA MEDICA: PRACTICE LEVELS/SEQUENCE

| BASE POSITION | GENERAL/ ALL LEVELS | MODIFICATIONS/ADAPTATIONS (use general if blank) | | |
|---|---|---|---|---|
| | | MEDICAL/ GENTLE | BEGINNER | ADVANCED BEGINNER |
| GENERAL PRINCIPLES | | 1) encourage props to ensure alignment and safety<br>2) encourage a positive experience of yoga | 1) introduction of yogic terms and concepts | 1) assumption of basic yogic terms and concepts; embellishment on subtleties of practice |
| 1) centering | sitting quietly in *sukâsana*, *siddhâsana*, or chair 90-90, OR laying over blankets placed in a T-shape or in a roll | start by sitting at front edge of chair; use blankets under pelvis or feet to approximate 90-90 | start with blankets, roller | *sukhâsana*, *siddhâsana*, or supine with block/roller under chest |
| 2) warm-up | 1) modified *tâdâsana* (feet apart) in standing or sitting (optional block between thighs) position<br>2) four-way stretch A<br>3) *ûrdhva-hastâsana* with optional belt<br>4) four-way stretch B<br>5) neck stretch A[1]<br>6) neck stretch B[1]<br>7) shoulder stretches: rotate between *garudâsana* (eagle) arms, *gomukhâsana* (cow-face) arms, and clock[1] | can be done sitting in chair for all or parts<br><br>chairs in front, side, behind to aid with balance | | |
| 3) sun salutations[2]<br><br>(*surya-namaskâr*) | move from half (sitting or standing) to A (sitting or standing) to B.<br>build to 10; replace 10th, then 9th, with next level (i.e., 9 halfs and 1 A) | 10 "half sun salutations" | 5 halfs,<br>5 A's<br>follow with *utkatâsana* (fierce) and *vîrabhadrâsana* I (warrior I) to prepare for sun salutation B | 2 halfs,<br>6 A's<br>2 B's<br>variations on C |
| 4) standing poses | 1) mountain pose (*tâdâsana*) with legs apart if balance or low back issues<br>2) *utthita-hasta-pâdângushthâsana* with block as challenge to balance, leg forward and to side<br>3) triangle (*utthita-trikonâsana*) with chair and/or block<br>4) extended side angle (*utthita-pârshvakonâsana*) with chair and/or block | no *uttanâsana* (too much torque on low back if can't flex adequately at hips) | occasional *uttanâsana* with chair | full *uttanâsana*/ *pâdângushthâsana*/ *padahastâsana* with blocks, lowering down slowly, flat back to return |

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YOGA HATHA MEDICA: PRACTICE LEVELS/SEQUENCE

| BASE POSITION | GENERAL/ ALL LEVELS | MODIFICATIONS/ADAPTATIONS (use general if blank) | | |
|---|---|---|---|---|
| | | MEDICAL/ GENTLE | BEGINNER | ADVANCED BEGINNER |
| 5) supine/ floor poses | preparatory/awareness poses such as<br><br>1) *supta-pâdângushthâsana* with belt in flexion, abduction (with blanket to support hip), and adduction | | | |
| 6) quadriped (table) | 1) only if knees, wrists can handle; cat-dog, side-side | can use padding/supports under wrists, elbows, chest, or knees to decrease weight on sensitive areas | same as medical/gentle | |
| 7) sitting poses and/or restorative poses | 1) *dandâsana* with blankets or blocks or chair to keep spine straight<br>2) *baddhakonâsana* with block between feet, making circles (blocks/blankets under bent knee if painful or restricted)<br>3) sitting poses (with optional restorative support [chair, block, blanket]): *sukhâsana*, rotated *sukhâsana*, *jânu-shîrshâsana*, *upavishta-konâsana* | active poses in "flat back" (convex) only | active poses in "flat back" (convex) only | active poses in both "flat back" (convex) and "round back" (concave) |
| 8) back bends | (not done after restorative poses)<br>1) bolster under chest<br>2) fish (*matsyâsana*) variations<br>3) *setubandha* variations—see below<br>4) camel (*ushtrâsana*) | very gentle chest opening with rolled blanket in horizontal, vertical, or diagonal alignment with the chest | blanket/roller/block under the chest | full *matsyâsana* (fish) with legs in *sukhâsana* or half lotus<br><br>half bows (*arhda - dhanurâsana*) —> full bows |
| 9) supine, side-lying, and kneeling poses | | Side-lying awareness exercises (Feldenkrais-like) of shoulder, pelvis, and hips, perhaps with folded blanket under chest to encourage mobilization of thorax | lying on side with rolled blanket under chest<br><br>*anantâsana*, gate pose (*parighâsana*), *parivritta-jânu-shirsâsana* | same as beginners with less adaptation |

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YOGA HATHA MEDICA: PRACTICE LEVELS/SEQUENCE

| BASE POSITION | GENERAL/ ALL LEVELS | MODIFICATIONS/ADAPTATIONS (use general if blank) | | |
|---|---|---|---|---|
| | | MEDICAL/ GENTLE | BEGINNER | ADVANCED BEGINNER |
| 10) shoulder stand (*sarvangâsana*) | [*viparîta-karanî* with chair or wall to follow][3] | 1) *setubandhâsana* (bridge) with blankets under shoulders; head must slide to prevent neck compression, feet on floor<br>2) *setubandhâsana* with blocks under feet<br>3) *pûrvottânâsana* (inclined plane) to build shoulder extension strength | *sarvangâsana* with chair | full *sarvângâsana* with belt, *halâsana* with chair |
| 11) abdominal work | 1) *navâsana* (boat) with one or both legs<br>2) Pilates-like center awareness/strengthening exercises | NO *navâsana*, gentle pelvic tilts, awareness | *navâsana* one leg at a time, other strength/awareness exercises | *paripoona* (full) and *ardha* (half) *navâsana* |
| 12) closing sequence | 1) double knee to chest<br>2) knee drop, block or blanket under bottom knee<br>3) *setubandhâsana* (if not done during shoulder-stand sequence)<br>4) supine neck stretch | | | |
| 13) *prânâyâma* (breath awareness/ control) | | deep breathing, awareness exercises | *viloma* (3-part), no holding | *viloma, ujjayî, anuloma viloma*, slight pauses |
| 14) corpse pose (*shavâsana*) | | may be done in sitting position if floor too difficult | | |
| 15) *dhyâna* (meditation) | | | | |

Notes: [1]Special preparatory poses; see accompanying diagrams from "Student Manual."
[2]Sun salutations A and B are those used in Pattabhi Jois's Ashtanga Yoga; sun salutation C is the traditional method used by the Kripalu and Sivananda styles; sun salutation D is an adapted A using a chair; we also use chair-based sun salutations (both half and full).
[3]Postures in [square brackets] are optional.

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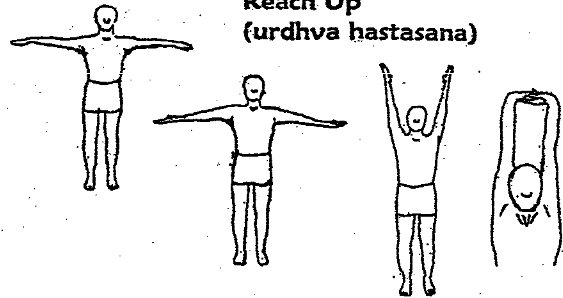
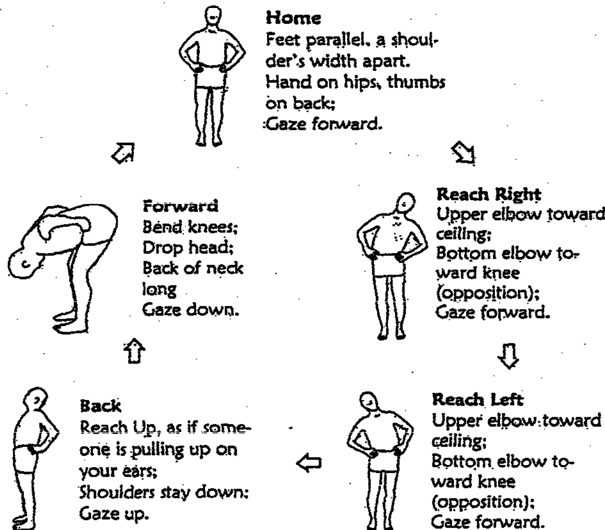
**Yawn & Stretch**

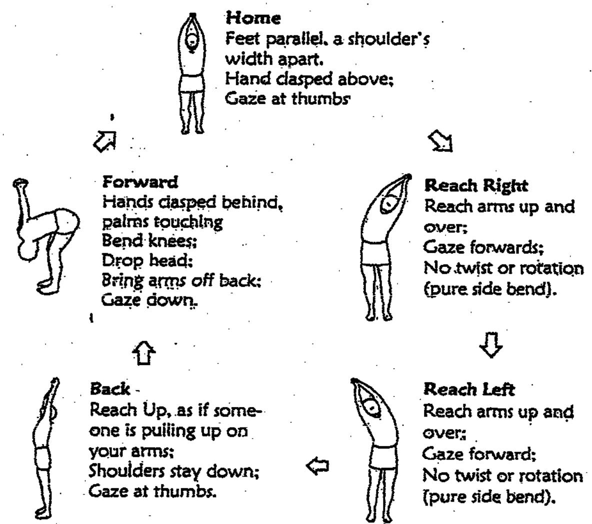
**Mountain (tadasana)**




**4 Way Stretch, Version A**




**4 Way Stretch, Version B**




at home. There is much detail in how and why I have chosen specific poses and how I teach them, and although a full description exceeds the scope of this article, the following paragraph and the "Practice Levels/Sequence" table provide an overview.

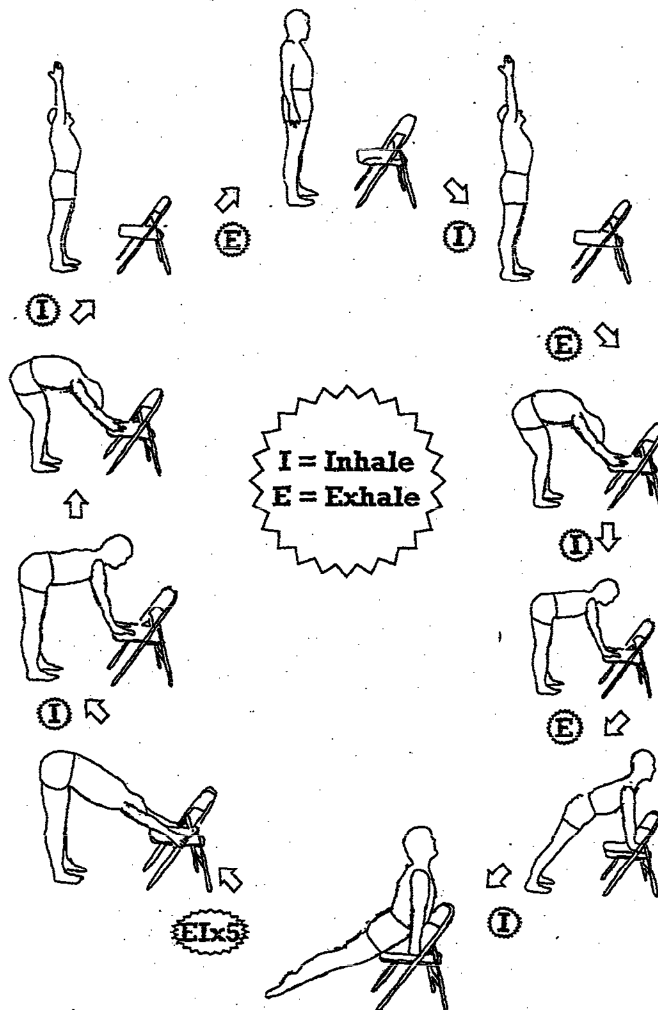
In general, I start with standing/sitting (in a chair) poses because they are safer than the floor-based poses. When standing or sitting, we are using antigravity muscles, and therefore we are less likely to go too far. Also, since most people have issues with balance, posture, hips, etc., the standing/chair poses enable practitioners to start working with more functional positions. After a gentle warm-up, we move into sun salutations. Sun salutations offer several benefits: 1) large muscle groups are utilized to warm up, 2) there is a nice flow, 3) there is coordination of breath with movement, and 4) there are ritualistic aspects. I have adapted the classic sun salutations for several levels, some chair-based, so they can be done with virtually any medical condition.

Since my classes are all beginner level, after sun salutations, I stick to the fundamental standing and floor-based poses. While using classic Yoga poses (as well as their Sanskrit names), I break them into small pieces, emphasizing awareness, breath, comfort, and curiosity. Virtually any pose can be approached with such a perspective (and enough props!). I also use restorative poses to enhance relaxation, awareness, and enjoyment. In addition, the *prânâyâma* I teach is basic: deep breathing, *viloma*, *ujjayî*.

Early on, I used class time for theory, but I ultimately found that practice was more valuable and better received than theory. We Americans tend to spend most of our time in our heads, especially in our visual systems (we make things "look" right, even though they may not "feel" right)—getting back to our million-year-old bodies and our experience of ourselves is what we need. I incorporate discussion of the *yamas* and *niyamas* during class when someone encounters difficulties or has a question. One *yama* that I refer to often is *ahimsa* (nonviolence). Beginners to Yoga often are confronted by their violence to themselves—forcing themselves to do things that they cannot, judging themselves, comparing themselves to others in the class.

I think the violence in our society that is caused in part by the vio-

**Sun Salutation D (Chair)**




lence on TV, in commercials, and everywhere else, tells us that what we have is never good enough. The purpose of advertising is to make us dissatisfied, to make us want a product. I think of this as violence against the self. I point out to students that their Yoga class is a microcosm of how they live their lives the other 167 hours of the week—if they can learn to observe themselves and turn off their judgmental (self-critical, competitive, comparative) voice for this one hour or so, eventually it can carry into the rest of their lives.

One of the most influential quotes I have learned, though it is a somewhat sad reflection of our society, comes from Oscar Wilde, who said, "The life we never lead is the only life we have." This is profoundly yogic. And Yoga is the potential solution—perhaps the only potential solution to this societal epidemic of living in fantasy, and in debt, rather than in the now of who we really are. My own quote, which I use to help people who can get very negative about themselves when they try Yoga, is "If you don't compare yourself to others, to your past, or to what you 'should' be, then you are perfect. Can you let yourself be perfect for just a little while?"

One of the biggest challenges I find in encouraging beginners to continue with Yoga (many do not) is to get them to let go of some of their harsh judgments of themselves—to find joy in the practice. Though Yoga is experiencing a peak in its popularity now, it is often presented in health clubs as the new aerobics, taught by teachers with as little as one or two years, if not less, experience and/or training. In my opinion, real Yoga is more difficult, because it does not stop at the skin or muscle or bone—it requires a vigilance and a commitment in searching for the true self for which society does not prepare the vast majority. After the current fitness phase moves on to the next, I am trusting that those left teaching and practicing Yoga will continue to advance the philosophic and growth-producing qualities that make Yoga the supreme art, science, and philosophy that it is.

These class discussions, which are interspersed between *âsanas* and other class activities, refer to other *yamas* and *niyamas*, such as *aparigraha* (non-covetousness) and *satya* (truth). I often repeat my quote above, "If you don't compare yourself to others, and you don't compare yourself to the past or the future, then you are perfect" (another way of saying "now" is all we have).

**Beginners to Yoga often are confronted by their violence to themselves.**

Physicians still carry some moral authority in this society, and my saying these things enables some people to be gentler with themselves. At other times, my being a physician works against my intent—people take my critiques far too seriously. I use humor a lot, and I work hard to balance *tapas* (fervor for the subject)

with *samtosha* (contentment), acceptance of where each student is in his or her evolution. The American way is "more is more." I encourage perseverance balanced with "less is more."

I envision my methodology as a bridge to other styles of Yoga. I try to teach enough principles and provide enough variety that when my students try other styles they can approach them with confidence and safety. Though somewhat painful to me, the measure of my success with students is their moving on to more advanced practices and styles.

## Case Studies

Please note that these case studies have been altered to disguise the identity of the persons involved, and to enhance their illustrative points.'

*Case #1: Low Back Pain*

A 47-year-old female was referred for chronic low back pain of four years duration. She had been rear-ended while driving in a car, with ensuing low back pain. When a year of physical therapy and medications had not provided adequate relief, she underwent a micro-discectomy (surgical removal of a disc) and achieved approximately 90% relief from her pain. She was subsequently rear-ended again, and her back pain returned. She received additional physical therapy and medications and was managed by a physiatrist with unsatisfactory results. After two years, she began to seek alternatives to a second surgery and was referred to me as "a last resort."

In my initial examination, I learned, in addition to the above, that she was an avid ice skater and that she loved to take walks through a nearby park, but had not been able to do either of these activities for many years. She was the wife of a surgeon and tended to focus on the mechanical aspects of her pain. Her physical exam was completely normal from a neurological and orthopedic point of view. There was no evidence that a "disc" was causing any neurological compromise.

I explained to her that pain does not necessarily correlate with MRI findings, and that pain can be caused and maintained on several planes, including emotional, energetic, etc. She had heard of John Sarno, M.D., whose very successful work situates all back pain in the mind. I explained to her that my work was somewhere between "pure mechanical" and "pure mind." Getting a sense of her emotional intensity, and also being familiar with the mechanical challenges of ice skating (lots of twists and falls), I suggested that there were probably multiple causes of her pain that predated the motor vehicle accident.

**I point out to students that their Yoga class is a microcosm of how they live their lives the other 167 hours of the week.**

Not having much choice, she reluctantly participated in a program of Yoga and acupuncture.

We began with modified sun salutations and then finished her practice with supine floor poses (knees to chest, gentle twists, *setubandhâsana*, and *shavâsana*). Even with this simple routine, at first she experienced pain and needed to be encouraged to do less and to use her breath. By following these principles, she found a "new" source of pain in her upper thorax (under the heart *cakra* area). Once she became comfortable and safe with this, we added *utthita trikonâsana* and *pârshvottânâsana* using a chair as a way to explore the relationship between her lower back, upper back, hips, and breath (and emotions). We then added some basic floor poses, such as *dandâsana*, *jânu-shîrshâsana*, and *marîcyâsana* C (half spinal twist), all modified with a blanket and belt.

In some sessions, she experienced tremendous emotional release, which almost caused her to quit. Validating the emotional experience without over-emphasizing it is always a difficult balance to achieve with patients/students. In general, as I stated above, chronic pain patients start with the belief that their pain is purely physical. Their Yoga practice then teaches them and changes them—it is not necessary to hit them over the head with their experience. Within a few weeks, this patient had achieved 50–60% improvement. While she was not fond of her program, her success encouraged her, but then she experienced a setback a few weeks later and became discouraged. I explained to her that four years of pain (or even more) would not heal in a few weeks or even a few months, that the journey would have its ups and downs with an overall upward trend. She needed constant reminders to do less, to be patient with herself, and to listen to her pain rather than pushing through it.

This case illustrates the multifactorial aspects of pain, and the importance of working on many planes with a student/patient. I always ask students/patients to quantify their relief on a scale of 0–100% (100% being complete relief, 0% being no relief). This scale is more helpful to me than the traditional 1-10 pain scale. For example, someone who has severe pain, let's say "11 on a scale of 10," but who enjoys a few hours of freedom from the pain fol-

## Arm Positions for Neck Stretch A & B

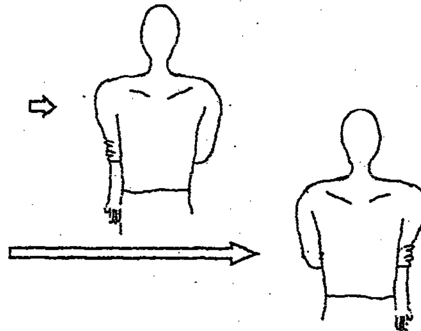
A1: HANDS ON HIPS

A2:HANDS DOWN BY SIDES

A3: HANDS CLASPED BEHIND (ALTERNATE WHICH THUMB IS ON TOP)

A4R: ARMS BEHIND
R HAND FACING FORWARD;
L HAND HOLDING R ELBOW

A4L: ARMS BEHIND
L HAND FACING FORWARD;
R HAND HOLDING L ELBOW



lowing a Yoga practice, may experience the same intensity of pain, but based on being in pain less of the time will experience 10–20% relief. Once a student/patient achieves any relief, it often confirms for him or her that he or she has the potential to heal. Most people come to me after having failed in so many other contexts that I assume they will not believe in their potential for healing for a long while. However, my conviction, my credentials, our relationship, and their experience of themselves will prevail if they stay the course.

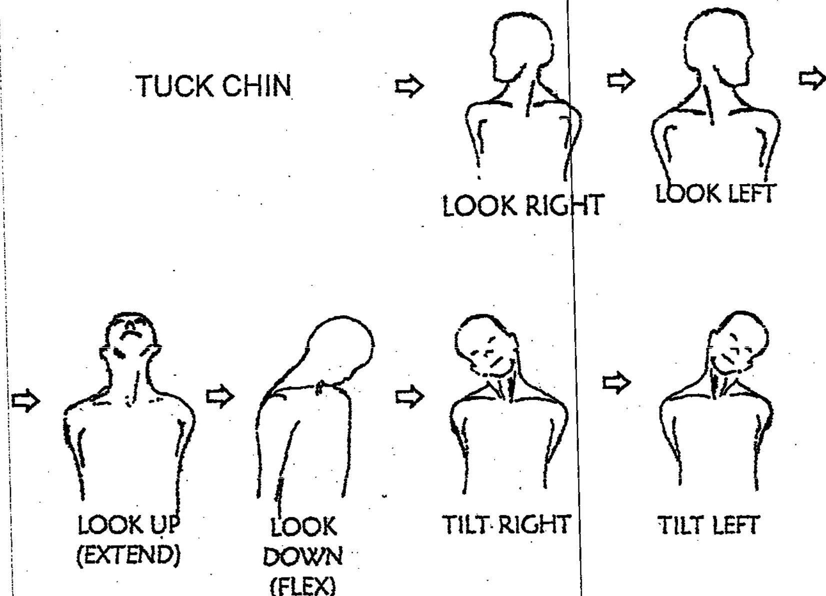
This case also demonstrates what I call the "disc in the head." Once patients/students think they have a disc problem, I tell them directly that I can heal their back only after I "heal their mind." According to MRI findings, 20% of the population under age 60 is walking around with a herniated disc without experiencing any symptoms at all. A "positive" magnetic resonance imaging (MRI) thus means nothing in over 95% of cases. The fear and resignation that so many face when learning about their "herniated disc" is often far worse than any structural problem related to the disc could ever be. I actually give my patients/students copies of medical papers demonstrating the meaninglessness of MRIs in most cases. Having the credentials and authority of a physician does help, but even then it takes a while for my patients/students to accept this truth. When I have my own episodes of back pain, I sometimes have a hard time believing it myself!

Finally, this case points out some aspects of the journey of healing. It is not a straight line, and sometimes the first steps are very small. I tell my patients/students that if they can achieve a 1% improvement, then they can achieve a 2% improvement, and so on. I use the analogy of saving money for retirement, wherein wealth is accrued slowly. Wealth rhymes with health, which also builds slowly and steadily. People understand the folly of expecting to retire at age 65 if they only begin to save at age 63; however, they often expect to change their selves or decades-long lifestyle patterns in weeks!

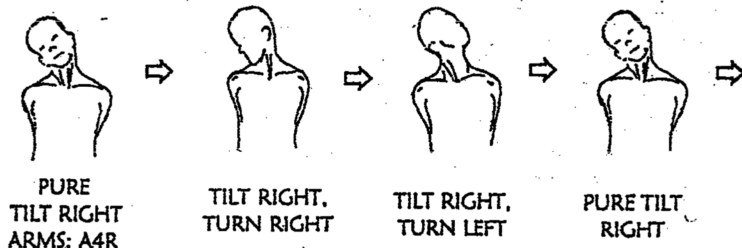
*Case #2: Carpal Tunnel Syndrome*

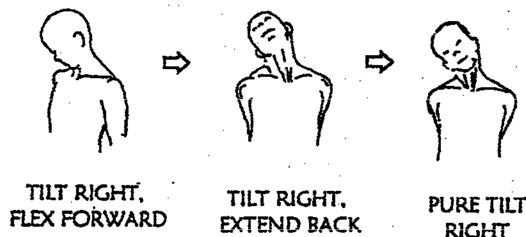
A 30-year-old school teacher was referred to me for persistent carpal tunnel symptoms of several years duration. She had already undergone three surgeries on each wrist, and examination showed wrists that were so surgically altered that I could turn them inside out! The carpal arch (which makes the tunnel) protects the nerves in the wrist, and

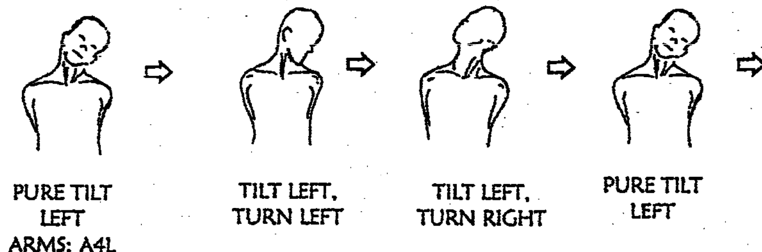
## Neck Stretch A

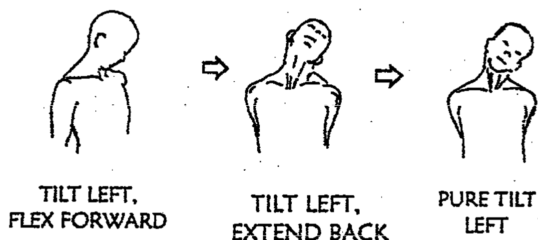


## Neck Stretch B




the integrity of her arch was so compromised that there was no protection of her nerves. The slightest pressure or tap on her wrist caused intense nerve pain. This severely limited her ability to write, an activity critical for her profession.

I examined her neck and shoulders and found them to be very tight and limited in range. Pressing on these areas also caused intense pain. My treatment approach first involved making her splints to protect the nerves that passed through her wrists. She unfortunately will need to use these for the rest of her life, as the carpal arch cannot be repaired at this point. I then gave her Yoga poses as part of a practice that worked her entire upper body. Poses included gentle neck stretches (a series of scalene stretches I have designed specifically for carpal tunnel/thoracic outlet patients; see illustrations of Neck Stretches A and B), gentle sun salutations (adapting table pose with a wedge and extra padding), gentle *bhujângâsana* and *dhanurâsana*, prayer pose, and *shavâsana*. Even though she had undergone three surgeries, she improved significantly in a matter of months.

This case illustrates one of the limitations of the linear approach that is often the strength of Western medicine. I was taught in medical school—and believed—that carpal tunnel syndrome occurred at the wrist. When I developed the syndrome myself, however, rather than cutting the ligament I tried stretching my wrists, which only exacerbated the condition. Then one day, while I was stretching my shoulders, I noticed my hands got better for a few minutes. I paid attention to my body, and to make a long story short I discovered that my carpal tunnel symptoms were originating in my neck and shoulders. I modified my Yoga practice to focus on these areas, and I healed easily. At the time I made this discovery, the only treatment for carpal tunnel syndrome was surgery, and I was reluctant to tell people to "do Yoga instead of surgery." Since this patient had already had surgery, however, I felt safe offering her this approach. I have subsequently offered it to hundreds of people, achieving over 95% success.

This case also demonstrates the importance of paying attention to the body and to one's intuition. If I had not had that brief experience of symptom improvement, which I was not really looking for, I never would have healed myself or others.

In some ways, I enjoy the challenge in myself and others of a chronic problem. Once Western medicine has failed, then it is safe for us to "play." As discussed above, a Yoga practice is "a playground for adults." Where else do we have the opportunity to learn about how we work? Using this approach, at my clinic we have helped with many seemingly intractable problems, including knee pain, elbow pain, chest pain, and fibromyalgia.

To further develop this approach, I have drafted a Mission and

Vision statement and am currently developing a set of Principles based upon which practices can be developed. (See the sidebar "Mission, Vision, and Principles.")

I also am developing a training curriculum for teachers. I envision the training to be 300 hours, and it will be open to teachers who have already undergone a basic 200-hour training as defined by the Yoga Alliance.[3]

*I would like to thank the Yoga Research and Education Center and the International Association of Yoga Therapists for the opportunity to share my experience with a community of Yoga therapists and researchers. I would be honored to receive feedback from any reader who has comments on this work-in-progress.*

*I also would like to thank my colleagues Eileen O'Connell, Michelle Carlino, and Ken Bruscia for their ongoing help in numerous ways in developing this method. Trisha Lamb Feuerstein's editorial assistance was invaluable in the preparation of this article.*

## Endnotes

1. Ignaz Semmelweis, a physician, discovered the main source of "child bed fever" in the mid-1800s, before Pasteur and Lister discovered bacteria. Back then, medical students would go directly from the cadaver labs to the obstetrics wards to deliver babies. Often the mothers would die of massive infection, called "child bed fever." Semmelweis noted that mothers handled by midwives rather than medical students had a much lower incidence of this illness. He proposed that medical students wash their hands before delivering babies, and was ridiculed by his peers into insanity. He was vindicated over the following 15 years when Pasteur and Lister pioneered the concepts of bacterial infection and antiseptic technique.

2. See Swami Satchidananda, *The Yoga Sutras of Patanjali*. Yogaville, Va.: Integral Yoga Publications, 1990, p. 50.

3. Please email the author to be placed on a mailing list for this and future publications.

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**Michael Cheikin, M.D.,** is a Board Certified Specialist in Physical Medicine and Rehabilitation (Physiatry), with additional Board Certifications in Pain Management, Electrodiagnostic Medicine, Spinal Cord Medicine, and Independent Medical Examination. He also is licensed in Medical Acupuncture. He practices in the suburbs of Philadelphia, where he also serves as the Medical Director of Chestnut Hill Rehabilitation Hospital. Besides his interest in Yoga and alternative medicine, he works intensively with the wheelchair bound and has written several plays about medicine and society. In association with a group of like-minded practitioners, he is currently developing a Center for Integrative Medicine that will include traditional and alternative medicine as well as a Yoga/movement studio.

He will be teaching a course in "Medical Yoga" at the Kripalu Center in Lenox, Massachusetts, from October 3–8, 2004, and "Fibromyalgia: A Nine Step Journey to Healing" for people with fibromyalgia at the Kripalu Center May 20–23, 2004, and September 30–October 3, 2004. Books on these two topics are in progress.

**Susana A. Galle, Ph.D., N.D., C.C.N., R.Y.T.,** is a clinical psychologist, naturopathic physician, clinical nutritionist, and Yoga teacher/therapist. She has a bicoastal practice of natural health care at the Body-Mind Center in Washington, D.C., and a consultative office in Cardiff by the Sea, California. She is on the clinical faculty at Georgetown University Medical School and Children's National Medical Center (GWU) and is on the editorial board of the *Journal of Pre- and Peri-Natal Psychology and Health.*

She has published articles on Yoga as it relates to hypnosis, psychotherapy, and prenatal care. Dr. Galle specializes in stress-induced disorders, and her focus is on mind-brain-body relationships and the role of subtle energies in shaping the human healing response.

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**Vina Shah and Giles Hooper** are students of A. G. Mohan and Indra Mohan. A. G. Mohan spent eighteen years as a private student of the world-renowned Sri T. Krishnamacharya, and the Mohans established the Svastha Yoga Ayurveda organization (Svastha) to provide a systematic and integrated health care system. Their approach is inspired by, and significantly draws upon, the teachings and influence of Sri Krishnamacharya, and since Sri Krishnamacharya's passing in 1989 they have continued intensive study of Ayurveda and other Vedic sciences. A. G. Mohan is the author of *Yoga for Body, Breath and Mind* and has translated the *Yoga-Yâjnavalkya,* an ancient text that lays much emphasis on the practice of *prânâyâma.*