

COURSE CURRICULUM

Overview of Yoga Therapy for Healthcare Providers – 21.5 hr CME

Sep 21-23 (Fri-Sun) 2018

at The Maritime Institute Conference Center, Linthicum Heights, MD

Life in Yoga Institute is accredited by the ACCME to provide Continuing Medical Education

All the MOC credits for the organizations below will be submitted through PARS, which is the login access provided by ACCME for ACCME accredited providers

ABIM-MOC Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to 21.5 MOC points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program. Participants will earn MOC points equivalent to the amount of CME credits claimed for the activity. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

ABP-MOC - Successful completion of this CME activity, which includes participation in the activity, with individual assessments of the participant and feedback to the participant, enables the participant to earn a maximum of 21.5 MOC points in the American Board of Pediatrics' (ABP) Maintenance of Certification (MOC) program. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABP MOC credit.

A score of 70% or better is required in the evaluation instrument to qualify for ABIM-MOC and ABP-MOC credit.

ABA-MOC This activity contributes to the CME component of the American Board of Anesthesiology's (ABA) redesigned Maintenance of Certification in Anesthesiology™ (MOCA®) program, known as MOCA 2.0®. Please consult the ABA website, www.theABA.org, for a list of all MOCA 2.0 requirements.

A. COURSE SUMMARY

1. COURSE DESCRIPTION: Another name for this course could be 'Yoga as Integrative Medicine'. The course is intended for physicians and other medical professionals. The intent is to describe the basis of yoga and the biomedical research on yoga for therapeutic purposes and for health maintenance. The information presented will present an alternative view of life and healing process, and potentially prepares a healthcare provider for considering entirely different forms of treatment that may be less invasive and less subject to side-effects than conventional medicine, especially in cases when conventional medicine is not completely effective. This approach of healing can be used as a complementary practice for treating diseases.

Yoga for therapeutic purposes in clinical populations has been more recent in the Western World, although its roots are from India. Awareness of this has created an environment where the National Institutes of Health through the National Center for Complementary and Integrative Health has been funding a number of studies related to yoga regimens. The major underlying mechanisms believed to be involved in yoga's therapeutic benefit are that yoga provides stress reduction through induction of the psychophysiological relaxation response, enhancement of mindfulness and mind/body awareness, and in general restores physical and mental homeostasis, essentially allowing healing to occur naturally.

Continuing research is establishing a higher level of understanding on yoga effects on the central nervous system, the neuroendocrine system, genomic expression and the immune system, and possibly a higher order understanding of the human system.

While yoga is very effective when practiced as preventive medicine for health maintenance, it is also effective as a complementary therapy for managing existing diseases. Also, while yoga is most often viewed as simply a form of physical exercise, this is in fact only one small component of traditional yoga practice. The application of traditional yoga is capable of producing a state of well-being on physical, emotional, mental, social, and spiritual levels. This is also the intent of medicine as per the definition of the World Health Organization, although in typical practice, modern allopathic medicine tends to focus more on symptom management and specific disease therapy rather than on a holistic approach to the patient and his/her condition.

Yoga therapy research trials, funded by a number of NIH grants and conducted at many leading research institutions internationally, have been providing preliminary evidence for its efficacy for a wide range of diseases or conditions such as back pain, mental disorders, metabolic disorders, respiratory disorders, etc.

The course will seek to present a comprehensive overview of the research evidence base for yoga as a therapeutic intervention. Furthermore, scientific models for yoga's efficacy will be reviewed. One of these describes yoga's therapeutic efficacy in the context of the psychophysiological "relaxation response". In addition to this, the traditional view of yoga and its lifestyle prescription is presented as a "Yoga-Ayurveda" model. Lastly the most recent research in the area of acupuncture, its concept of meridians which are called Naadis in Yoga, electro-acupuncture, electro-photonic imaging and impact of yoga exercises on the meridians are presented as the "Yoga-Acupuncture" model; this approach describes a bridge between Yoga and Acupuncture, or more appropriately traditional Indian medicine and traditional Chinese medicine, and then makes a connection with conventional medicine.

Further, the course includes:

- Case Discussions for Musculo-skeletal, Cardiovascular, Neurological, Cancer, Respiratory and Metabolic Disorders;
- Introduction to simple chair-based practices that are called Gentle Yoga developed by Life in Yoga Institute that can be applied in regular clinical practice.

This information is designed for healthcare providers (and potential researchers) to:

- Become aware of researched yoga therapy tools for pathological conditions;
- Consider their usage in practice, if necessary with the aid of suitably experienced person in yoga therapy;
- Seek to engage in further research towards a Unified System of Medicine that seeks to place all the unknowns now called placebo effect, idiopathic conditions, and evolutionary programming in conventional medicine incorporating the wisdom of ancient traditional medicine.

2. CME COURSE OBJECTIVE

After completing this activity, physicians should be able to:

1. Identify the information on the extent of non-invasive yoga practices available for patients' health management.
2. Locate the information on the extent of non-invasive yoga practices available for patients' health management.
3. Develop competency to talk about yoga to their patients as a health management tool.
4. Develop competency in simple techniques of yoga that can be applied for patients' disease care and health management.
5. Distinguish resources available to advance education on yoga therapy and complementary medicine.
6. Prepare to undertake further training to develop a high degree of expertise in yoga therapy.

3. COURSE CONTENT - Lecture & Discussion Cover:

<ul style="list-style-type: none">➤ Relevance of Yoga Therapy in Medicine➤ History of Yoga➤ Understanding Yoga, Hatha Yoga, Tantra Yoga, Meditative Practices and Yoga Therapy➤ The Science and Underlying Psychophysiology of yoga practices – the mechanism of healing➤ Importance of Breathing Practices	<ul style="list-style-type: none">➤ Importance of Meditative Practices➤ Ayurveda and Practices Allied with Yoga➤ Yoga Therapy overview and discussion for Specific Disease Conditions: Musculoskeletal System Disorders, Cardiovascular Disorders, Neurological Disorders, Cancer, Respiratory Disorders, Metabolic Syndrome, etc.➤ Simple techniques/paradigms for relaxation
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Practice Covers: (a) Breathing Exercises – Bhastrikaa, Kapaalabhaati, Baahya Kumbhaka, Anuloma-Viloma Praanaayaama; (b) Yoga posture practices for digestion, elimination and good sleep, and musculo-skeletal toning and balance; (c) Vibration techniques of sound often called Chakra meditation; (d) Other meditation techniques (with affirmations) and Deep Relaxation

4. FACULTY - Sat Bir Singh Khalsa PhD, Asst Prof of Medicine at Harvard Medical School

C. Rajan Narayanan PhD, C-IAYT, Executive Director, Life in Yoga Institute

Dilip Sarkar MD, FACS, CAP, C-IAYT, Chairman of Board, Life in Yoga Institute and President of International Association of Yoga Therapists.

5. COURSE ATTENDANCE LOGISTICS

EMERGENCY CALLS DURING THE COURSE: 301-526-8308(Dr. Narayanan);

LOCATION:

The Conference Center at the Maritime Institute, 692 Maritime Boulevard, Linthicum Heights, MD 21090-1952 – Lodging is available on the property.

Meals: The conference center in Maryland has a dining room that normally serves many different types of food. We are requesting some significant component to be vegetarian without garlic and onion for

those who like to observe the normal practice in yoga institutions in India. Those having special meal needs may send an email to Rnarayanan@gmail.com preferably at the time of registration, but at least one week before the event.

Parking is free and available all around the conference center in Maryland.

Air & Train Travel – Conference Center provides free shuttle to BWI airport or the BWI Amtrak Station.

LODGING COSTS AND RESERVATIONS – All participants, including local participants, may consider staying at the lodging facility since programs run from 6:00 am to 6:15 pm. Lodging may be requested along with the course registration on the form or by calling the Conference Center at 410-859-5700. For any additional questions, contact Dr. Rajan Narayanan at Rnarayanan@gmail.com or 301-526-8308.

INTRODUCTIONS – To facilitate introductions and networking, attendees if they wish may send a picture and a short biographic career profile not exceeding half a page – about 200 words – with any contact information they wish to provide at least two weeks before the event and this will be shared with all participants. Unless specifically requested, at the end of the course, to promote interaction and group dynamics the emails of participants will be shared with all participants.

B. DISCLOSURE

All the faculty/speakers, and the planning committee members have declared:

- That they have no financial relationships with any commercial interests in the past 12 months;
- They will not accept financial remuneration directly from any commercial supporter for this program;
- They will uphold academic standards to insure balance, independence, objectivity and scientific rigor in their roles in this program.

C. COURSE DETAILS

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1. COURSE AGENDA AND SCHEDULE

ROOM: 8 North at the Conference Center (Will also be Displayed at the Center).

PDF Document of presentations made available at or before the course will be noted as A1, A2, B1, B2, etc. as below for each part of the scheduled program.

Friday (5.75 CME hours)

9:30 am to 10:15 am – Registration/Check-in and Participant Introductions

10:15 am to 10:30 am – Course Introduction - [NARAYANAN, COURSE DIRECTOR](#) - [A1](#)

10:30 am to 11:45 am– The Psychophysiology of Yoga: A Review of the Research & Science – [KHALSA-A2](#)

BREAK – 11:45 to 12:00 pm

12:00 pm to 12:30 pm – Practice Session 1: Breathing Techniques to Restore Vitality and Relaxation -
[NARAYANAN](#) - [A3](#)

LUNCH & BREAK – 12:30 pm – 1:30 pm

1:45 pm to 3:15 pm–Yoga Therapy Research Review – Part 1 – [KHALSA](#) - [A4](#)

BREAK – 3:15 to 3:30 pm

3:30 pm to 4:30 pm – Yoga Therapy Research Review – Part 2 - [KHALSA](#) - [A4 continued](#)

BREAK – 4:30 to 4:45 pm

4:45 pm to 6:15 pm – Practice Session 2 - Introduction to Gentle Yoga & Meditative Practices (Theory & Practice Session 2) – [NARAYANAN](#) - [B6](#)

Saturday (9 hours)

6:00 am to 6:15 am – Sign-in

6:15 am to 8:15 am – Practice Session 3: Practice Simple Yoga Therapy Routine – [SARKAR](#) -
[B1](#)

BREAKFAST – 8:15 am to 9:00 am

9:00 am to 10:15 am – Anatomy, Physiology & Use of Yoga as Medicine - [SARKAR](#) - [B2](#)

BREAK - 10:15 am to 10:30 am

10:30 am to 11:45 am – Complementary Practices: Ayurveda including Dinacharya – [SARKAR](#) [B3](#)

BREAK - 11:45 am to noon

12:00 pm to 12:30 pm – Practice Session 4: Mudras & Kriyas – [SARKAR](#) – [B4](#)

LUNCH & BREAK – 12:30 pm – 1:45 pm

1:45 pm to 3:15 pm – Case Discussion of Yoga Therapy - 1 - [SARKAR](#) - [B5](#)

(Musculo-skeletal, Cardiovascular and Neurological disorders)

BREAK – 3:15 pm to 3:30 pm

3:30 pm to 5:00 pm – Case Discussion of Yoga Therapy - 2 – **SARKAR** - **B6**
(Cancer, Respiratory and Metabolic disorders)

BREAK – 5:00 to 5:15 pm

5:15 pm to 6:15 pm – Practice Session 5: Integrated Practice with CRE Breath **NARAYANAN-** **B7**

Sunday (6.75 hrs)

6:00 am to 6:15 am – Sign-in

6:15 am to 8:15 am – Practice Session 6: Integrated Gentle Yoga with Chaandogya Upanishad
Meditation – **NARAYANAN** - **C1**

BREAKFAST - 8:15 am to 9:15 am (additional time to facilitate lodging check-out)

9:15 to 10:45 am - Philosophy of Yoga & Yoga Therapy Models for Application **NARAYANAN - C2**

BREAK - 10:45 am to 11:00 am

11:00 am to 12:30 pm – Practice Session 7: Practice Review and Case Discussions **NARAYANAN - C3**

LUNCH & BREAK – 12:30 pm – 1:30 pm

1:30 to 2:45 pm – Preparing to Bring Yoga Therapy in Your Clinical Practice – **NARAYANAN – C4**

(Parsing of Gentle Yoga exercises for therapy applications, patient behavior and
practice management)

3:00 to 3:30 pm – Quiz Review (Certification requirement for ABIM-MOC) - **NARAYANAN**

3:30 to 4:00 pm – Program Conclusion Formalities for Certification and Feedback

Those planning to take a flight out of BWI airport can plan for 6pm or after.

2. PRESENTATION SUMMARIES

Friday, 10:15 am to 10:30 am

Course Introduction

NARAYANAN, COURSE DIRECTOR

This is a Course Overview by the Course Director that covers the following:

- Facilities and Course Conduct
- CME Requirements
- Course Objectives
- Agenda Schedule
- Faculty
- Course Material – Presentation segments, Demonstration & Practice

The course will cover the following:

- Yoga Therapy Overview
- Philosophy of Yoga
- Connection of The Human System with Yoga Practices That Promotes Healing and Health
- Extent of Research on Yoga Therapy
- Practices that are Similar or Allied with Yoga Therapy
- General Practices for Health Management
- Specific Disease Management with Yoga Therapy
- Case Discussions

Friday 10:30 am to 11:45 am

and 1:45 pm to 4:30 pm

Psychophysiology of Yoga & Yoga Therapy Research Review

SAT BIR KHALSA

This segment is really two presentations covered in three sessions totaling 3.75 hours:

- A. Psychophysiology of Yoga – an overview of the basic practices within yoga and their underlying psychophysiological effects, and how these are relevant for therapeutic benefits in patient populations.
- B. Research Report on Yoga Therapy – a review of the existing biomedical research evidence base of clinical trials supporting the efficacy of yoga for specific disease conditions.

A. PSYCHOPHYSIOLOGY OF YOGA

This segment seeks to establish connection between yoga philosophy (covered earlier in the course) and the underlying mechanisms in yoga practice and how these are relevant to therapeutic benefit in disease treatment.

Yoga is a practical discipline incorporating a wide variety of practices whose goal is the development of a state of mental and physical health well-being, inner harmony and ultimately “a union of the human individual with the universal and transcendent Existence” (1). These practices are believed to have originated in early civilization on the Indian subcontinent and have been practiced historically in India and throughout East Asia. Yoga techniques include the practice of meditation, deep relaxation practices, regulation of respiration with a variety of breathing exercises, and the practice of a number of physical exercises and postures, in which the focus is more on isometric exercise and flexibility than on aerobic fitness.

A general feature of these practices is their capability of inducing a coordinated psychophysiological response, which is the antithesis of the stress response. This “relaxation response” consists of a generalized reduction in both cognitive and somatic arousal as observed in the modified activity of the hypothalamic pituitary adrenal axis and the autonomic nervous system (2). Bagchi and Wenger (3), in their early classic yoga research study wrote “...physiologically Yogic meditation represents deep relaxation of the autonomic nervous system without drowsiness or sleep and a type of cerebral activity without highly accelerated electrophysiological manifestation but probably with more or less insensibility to some outside stimuli for a short or long time.” A large number of subsequent research studies examining the effects of these techniques both in isolation and in combination have further confirmed these early results (4-9). Both short term and long-term practice of yoga techniques are associated with reductions of basal cortisol and catecholamine secretion, a decrease in sympathetic activity with a corresponding increase in parasympathetic activity, reductions in metabolic rate and oxygen consumption and salutary effects on cognitive activity and cerebral neurophysiology.

Studies related to the brain have utilized a variety of outcome measures including electrophysiological recordings (EEG), evoked potential recordings and brain imaging techniques. Both short term and long-term changes in brain function and anatomy have been investigated in both novices and experienced meditators. This emerging evidence is providing detailed information on the specific brain regions affected by contemplative practices and on the interaction between different brain regions during contemplative practices. This work has elucidated potential mechanisms underlying the effectiveness of these practices for both normal and patient populations and has suggested practical applications for mental health and both cognitive and emotional functioning.

B. YOGA THERAPY RESEARCH REVIEW

Not surprisingly, the capability to effect psychophysiological functioning has led to the implementation of these techniques as a therapeutic intervention in a number of disorders which have psychosomatic components. Historically, this limited application of yoga techniques for specific disorders is relatively recent relative to the ancient Vedic origins of yoga (10). Gharote (1987) has stated that “the therapeutic aspect of yoga does not feature in any of the traditional systems of self-help, except in the yoga sutras

of Patanjali where we come across the word vyadhi meaning 'disease' in the list of disturbing factors of mind that are obstacles to liberation. ... although yoga therapy was not a developed branch of yogic discipline as such, we do get a glimpse of the therapeutic effects of the practices in some of the hatha yoga literature such as the Hatha Yoga Pradipika. However, advice is given here within the context of practice; that is, how to deal with the complaints that arise from faulty practice" (11). In fact, since the primary goal of yoga practice is spiritual development, beneficial medical consequences of yoga practice can more precisely be described as positive "side effects" (12).

This presentation is intended to give physicians an overview on the extent of research in yoga and yoga therapy within the context of traditional yoga philosophy, with focus on certain disease areas and is divided into the following areas:

- Research on the prevalence of yoga and yoga therapy
- The history of research on yoga and yoga therapy – beginning with the first systematic medical application of yoga started in India in 1918 at the Yoga Institute in Mumbai through the emergence of a new breed of clinicians called yoga therapists and a society called the International Association of Yoga Therapists (IAYT) based in the United States. (13-19;24-27)
- Extent of yoga and yoga therapy research publications in peer-reviewed biomedical journals – countries, types of journals, types of analysis, sample sizes and chronology
- Scientific rationale and research evidence for the underlying psychophysiological mechanisms of yoga's benefit
- A review of current and ongoing biomedical research on yoga and yoga therapy by disease areas. Disease areas to be covered include Metabolic Syndrome, Cardiovascular, Respiratory, Musculo-skeletal, Neurological, Psychiatric, among others.
- Selected examples of yoga therapy research studies in each disease category.
- Future directions in yoga therapy research

The application of yoga in a limited and strictly therapeutic manner has drawn some criticism from proponents of yoga (14), given that yoga techniques are in fact part of an ancient and sacred spiritual tradition historically applied as a holistic lifestyle discipline (20). This concern has been further aggravated by the rapidly growing popularity of yoga in the west and its subsequent commercialization and application as a trendy body slimming and fitness tool (21). However, among world traditions, classical Yoga is a useful starting point for inquiry into the relationship of medical and religious health because it connects the cultivation of physical and psychological health with spiritual well-being and exemplifies the idea of religious liberation as healing" (22). Anand (1991) has stated this more simply: "The ultimate aim of medical sciences is the attainment of optimum physical and mental health for the individual. The ultimate aim of yogic practices is also the same, viz. physical and mental well-being." (23)

A published comprehensive bibliometric analysis in 2013 has identified the current full extent of the yoga therapy studies published in research journals (34). Over 450 publications in 271 different journals

published in 29 different countries on 28,080 study participants were identified. An analysis of the type of studies reported revealed that 18% of the publications were on uncontrolled studies, 45% were on randomized controlled trials, and 18% were on studies incorporating a control group that did not use randomized subject assignment. The chronological distribution of publication date indicates gradual continuing increase in publications with an exponential increase in the decade prior to the survey. The types of disorders most evaluated in yoga studies have been psychiatric conditions, cardiovascular disorders, and respiratory disorders. There are a number of cautions that should be noted in interpreting this literature including no single standardized yoga practice format, a very wide range of the types of yoga interventions and mode of application used, and a highly varied quality of research.

[References with number indicated in parenthesis are noted in the reference section in the same order.]

Friday 12 noon to 12:30 pm –

Practice Session 1: Breathing Techniques to Restore Vitality and Relaxation

RAJAN NARAYANAN

Bhastrikaa Pranayama is considered to be a technique used for restoring vitality and providing deep relaxation. Different schools of yoga practice it differently with different physiological effects. This session focuses on gentle and slow full breathing. Life in Yoga has found this to be particularly useful for recovering from tiredness, and particularly useful for aging population and those suffering from arthritis. Given its simplicity, this is an excellent technique for health care practitioners to share with their patients. Published research confirm these observations:

(a) Pramanik et. al. (**Immediate effect of slow pace bhastrika pranayama on blood pressure and heart rate**, *J Altern Complement Med.* 2009 Mar;15(3):293-5) show “slow bhastrika pranayamic breathing (respiratory rate 6/min) for 5 minutes, both the systolic and diastolic blood pressure decreased significantly with a slight fall in heart rate.” They also conclude that this “increases frequency and duration of inhibitory neural impulses by activating pulmonary stretch receptors during above tidal volume inhalation as in Hering Bruer reflex, which bring about withdrawal of sympathetic tone in the skeletal muscle blood vessels, leading to widespread vasodilatation, thus causing decrease in peripheral resistance and thus decreasing the diastolic blood pressure.”

(b) Chandla et. al. (**Effect of short-term practice of pranayamic breathing exercises on cognition, anxiety, general well being and heart rate variability**, *J Indian Med Assoc.* 2013 Oct;111(10):662-5) concluded in their study: “The study shows that practice of slow breathing type of pranayam for six weeks improves cognition, anxiety and general well being and Increases the parasympathetic activity. Whereas there was no effect of the yogasana on the above parameters except improvements in the general well being.”

Friday 4:45 pm to 6:15 pm –

Practice Session 2: Introduction to Gentle Yoga & Meditative Practices

RAJAN NARAYANAN

The goal of yoga is meditative spiritual communion that gives self-revealing wisdom. Meditation is empowered by physical alignment, proper energy flows, and balance in every aspect of the physiology

and psychology of a person. In this session, while the focus is non practice, the practice process is explained in short prior to the practice.

EXPLANATION CONTENT:

The word meditation has been used for any type of absorption of the mind, all of which generally relaxes the mind. According to the principles of Asthaanga Yoga (of the Yoga Sutras) four of the eight elements: Pratyahaara, Dhaarana, Dhyaana and Samaadhi, meet the characteristics of popular meditation techniques. In this segment the following points will be discussed:

- Understanding qualitative differences in meditation techniques in terms of Asthaanga Yoga with discussion of Yoga Sutra concept for attaining Samaadhi. The techniques discussed include Maharishi Mahesh Yogi's Transcendental Meditation Technique, popular Bio-genic Feedback techniques, Vipassana Meditation (and the general category of mindful Buddhist meditations) and the list of techniques mentioned in the Yoga sutras.
- Basic requirements of meditation practices – relaxing the body, keeping the spine aligned, and relaxing the mind.
- Factors that enhance the meditative experience – role of physical stretches, breathing practices, regularity and place.
- Documented Benefits of Meditation with specific note of stress management and immune functions.

The presentation along with later practice sessions are designed to prepare healthcare providers the necessary tools to apply simple meditation techniques and where appropriate refer to a specialist in meditation techniques.

PRACTICE CONTENT:

About half hour of the practice is spent on spinal alignment exercises and breathing exercises of the Gentle Yoga Practice used by Life in Yoga. [Please see exercises 1 to 5 in http://www.lifeinyoga.org/App_Downloads/GentleYogaSlides.pdf] This is designed to balance the body and mind prior to beginning meditation.

Thereafter, meditation for a few minutes is introduced after again mentally checking the alignment and relaxation of the muscles, with the affirmation of letting go of everything – all thoughts. This is the simplest form of meditation. This routine is designed to demonstrate that any health practitioner can easily adopt this type of technique. For those who are ready for it, a higher type of meditation may be introduced individually.

Saturday 6:15 am to 8:15 am –

Practice Session 3: Practice Simple Yoga Therapy Routine

DILIP SARKAR

We will begin with light loosening exercises consisting of:

- SITTING: Dandasana (sit straight, staff pose)
- Pada mushtikasana: Toes bending, Pada Chalanasana: Foot rotation,
- Chakki Chalanasana: circular grinding movement
- Kulha (hindi for hip) Chalanasana: Foot over other straight leg, hug the knee and push it to the floor
- Badhakonasana (feet together, knee on side) with Titliasana (butterfly)
- Hasta Chalanasana: Hand in front, open & close
- Skanda Chalanasana: move shoulder in a circular motion front and back. Hands on shoulder and move elbow circular way, front and back. Hold wrist, behind head, pull down
- Brahma Mudra: Neck rotated in 4 directions

Breathing practices covered will include Bhastrikaa, Kapaalabhaati, Baahya Kumbhaka, Agnisaar, Anulom-Vilom, Bhramari, Ujjayi and Udgeet.

Saturday 9:00 am to 10:15 am

Anatomy, Physiology & Use of Yoga as Medicine

DILIP SARKAR

Yoga Therapy is not evidence-based medicine alone, but rather, practice-based evidence as well coming from millenniums of practice in traditional systems. A standard template or one-size-fits-all strategy does not work for yoga; it is individualized to each person and requires personalized lifestyle changes. Studies have shown lifestyle changes through yoga can be better than drugs in helping people deal with various ailments. Yoga Therapy is a strong medicine, but it is also a very slow-working medicine. It is very addictive, transformative, and synergistic with other therapies and cleanses the mind and body. The therapeutic effects are achieved through a relaxation response that activates the body's parasympathetic nervous system that calms the mind and body and also aids in digestion. The relaxation response causing a slower heart rate, decreased blood pressure, slow and steady respiration, improved vital capacity, and longer breath-holding power.

This section will discuss the following:

- Physiological effects of yoga poses or *asanas* – the discussion is at a general level and specific level, and also with respect to short term and long term physiological effects.
- Physiological effects of breathing exercises of yoga called *pranayam*.
- Psycho-neuro-endocrinology effect of yoga practices
- Benefits of yoga at the cellular level
- Genetic predisposition for chronic diseases (like diabetes, hypertension & heart disease) and the effect of yoga therapy

This section deepens the connection of Yoga Therapy to the human physiology making it credible for physicians. Further it provides the framework for integrative use of conventional medicine with yoga therapy to treat chronic diseases. Conventional medicine provides immediate response to control abnormal conditions while yoga therapy provides for lifestyle modifications, that in the long term reduces dependence on drugs (that may have side-effects) while promoting healthy living.

Saturday 10:30 am to 11:45 am & 12:00 pm to 12:30 pm –

Ayurveda, Dinacharya, Mudras & Kriyas

DILIP SARKAR

This section will cover Ayurveda and other practices that may be viewed as within the purview of yoga therapy. Exposure to this gives physicians a paradigm that is deeper than the microbiology and bio-chemistry approach to understand health.

Ayurveda is an ancient Indian system of medicine that has its basis in the philosophical system of Yoga and related philosophical systems. However it has many characteristics of modern medicine – tools and concepts of surgery, the concept of bio-chemical imbalance, the understanding of the different functional systems (digestion, circulation, respiration, etc.). Given its basis in philosophies like yoga, it offers unusual and deeper insight into diseases that is common with other complementary practices. Hence Ayurveda will be the first point of discussion before other complementary therapies.

Ayurveda presentation will cover:

- History and Texts of Ayurveda
- Principles of Ayurveda – the concept of balance
- The Three Natures: Vaata, Pitta and Kapha
- The Eight Areas of Detection for Diagnosis:
- Detailed discussion of tongue and pulse
- Therapy in Ayurveda – diet, lifestyle, herbs and massage
- Discussion of Ayurvedic Panchakarma

The other complementary therapies fall under the category of Energy Medicine. When the human system is viewed as an electrical circuitry healing is viewed as balancing the energy flow. Ayurveda follows this same view. However it also derives techniques used by conventional medicine as relating to surgery and biochemistry to heal. Other therapies focus strictly on energy balancing. Hence for a conventionally trained physician Ayurveda provides the energy concept that is necessary to deal with other therapeutic approaches. Other such therapies will include discussion of the following:

- Mudras (typically finger positions) and Bandhas (energy locks) that serve as neuro-physical connectors to create energy balance.

- Acupressure and Marma Therapy where stimulating points release endorphins and neurotransmitters to treat various organs and correct imbalances in energy flow. Acupressure largely relies on stimulation points on the hands and feet. Marma therapy is more generic and covers other parts of the body too. Acupuncture is an allied area that is related, but will not be discussed.
- Shat Kriyas or The Six Cleansing Practices that come from the Hatha Yoga tradition will be discussed.

This presentation will conclude with a general overview of lifestyle management and drawing parallels of rituals and lifestyle approaches from different traditions that seek to provide this relief. Ayurveda and Yoga in particular, having this understanding suggest certain daily routines that can have a prophylactic effect on the human system while promoting active healing. The Daily Routine in yogic lifestyle has the following components:

- Circadian rhythm and its effect on the body
- Practices that promote being in sync with the circadian rhythm especially exercise and food habits
- Yogic practices for promoting bowel movement
- Tongue cleansing, cleansing of the nasal passages and the dynamics of teeth cleansing
- Differences between younger, middle age and older populations

While the entire course is designed to bring back the intent of medical practice for health management instead of its disease management focus that has resulted from the economic forces that govern the industry, this particular segment and the previous segment are the bridges from concepts presented to practices. Physicians who have general family practice with patients coming on a regular basis for health check-up should pay particular attention to the ideas noted in these segments and should seek to bring some of these ideas into the lives of their patients, first beginning with themselves and their own families.

Yoga therapy is Ayurveda. Health is defined as strong digestion, easy elimination, and good night sleep. In yogic practice we have Asanas (postures) and breathing exercises for improving digestion, elimination and sleep. Demonstration and practice of these exercises will be the focus of this segment.

This presentation will be the key link that transforms a physician's thinking from the conventional approach of disease management and the conception of human physiology to a different level that makes one ready to deal with more details of yoga therapy for specific diseases.

Saturday 1:45 pm to 5:00 pm (with 15 minute break) –

Case Discussion of Yoga Therapy I and II

SARKAR

This is a 180 minute content covered in two separate sessions with a 15 minute break. Through Case discussion of patients with back-pain, arthritis, hypertension and other cardiovascular disorders, Parkinson's disease, cancer, asthma and COPD, sleep apnea, diabetes and obesity, and their observed recovery, yoga therapy modality is clarified.

Part 1 deals with musculo-skeletal, cardiovascular and neurological disorders.

Part 2 deals with cancer, respiratory, and metabolic disorders.

Saturday 5:15 pm to 6:15 pm –

Practice Session 4: Integrated Practice with Cyclical Rhythmic Breathing

RAJAN NARAYANAN

This session will introduce CRE or Cyclical Rhythmic Breathing which has properties that reduce stress and functionally it can be thought as controlled respiratory alkalosis. The generic concept of cyclical rhythmic breathing is the key element within a practice called Sudarshana Kriya promoted by the Art of Living Foundation. Packaged with two preceding breathing exercises it is popularly referred to as SKY (Sudarshana Kriya Yoga). Several researchers including Brown and Gerbarg of Columbia College of Physicians and Surgeons, New York have reviewed its neurophysiologic benefits and claim to alleviate anxiety, depression, everyday stress, post-traumatic stress, and stress-related medical illnesses. This session will provide direct experience of the process and impact, for attendees, and prepare them to apply such methods for their patient care safely.

CRE Breath will be done after a brief review of the alignment and breathing practice done in the earlier practice sessions.

Sunday 6:15 am to 8:15 am-

Practice Session 5: Integrated Gentle Yoga Practice with Chandogya Upanishad Meditation

RAJAN NARAYANAN

This is a continuation of the Gentle Yoga exercise regimen of Life in Yoga that covers the five aspects of exercising covered in the 8-fold process of yoga. A few of the exercises would have been introduced the previous afternoon, and in this session the full routine would be completed.

The routine while fulfilling all aspects of yoga, including physical alignment, breathing for cleansing and energizing, vibration for additional cleansing, thought and pure observation exercises, is also gentle, with easy motions, that makes it accessible to all irrespective of age or physical condition.

The experience of this session will be referenced in the discussion of customizing yoga regimen and the importance of sequences in exercises after this session.

The full routine can be reviewed at http://www.lifeinyoga.org/App_Downloads/GentleYogaSlides.pdf

This session will introduce the core component of the Chaandogya Upanishad meditation – the use of the sound OM or AUM, which has been much researched. This will build on the meditation practices from the previous days.

Before beginning the meditation, the full sequence of Gentle Yoga exercises will be done.

Sunday 9:15 am to 10:45 am

Philosophy of Yoga and Yoga Therapy Models for Application

RAJAN NARAYANAN

Unlike the microbiology and bio-chemistry approach to understand the health of the human body in the conventional medical system, the Yoga approach is to understand the nature of creation, the role of the human being and the body, and the cause of ill-health for the human body in the Cosmic sense. This develops a deeper insight of the human body and allows for treating at a level deeper than the biochemical or microbiology level to address abnormalities. Thus in the yoga approach, in a theoretical sense, it is not about statistical correlations and probabilistic assessments, but rather deterministic at the highest level of creation. However in practical application even the yoga approach has to be applied probabilistically for therapy, since the tools necessary for determinism are not fully available. However, the yoga model of determinism provides deep insight for medical practitioners coming from conventional medicine to get a glimpse of answers to many unanswered questions they may have from years of patient observation. Further, it becomes the framework for developing insight into how yoga therapy works and consider new frontiers for research. The use of Electro-Photonic Imaging developed by the Russian health system may be helpful to make yoga therapy measurable and instantly predictive.

Accordingly, this segment will discuss:

- Yoga philosophy of Creation and Role of Human Being based on the Yoga Sutras of Patanjali
- The Goal of Yoga & the Role of the Individual Body – Direct Experience and Understanding of the Cosmic System and Developing Infinite Knowledge and understanding ones role in creation
- Yoga’s understanding of ill-health and disease condition - concluding that each person needs to be in tune with themselves (following their Dharma) for peace and good health.
- Related texts of yoga that speak on Circuitry of the Human System - The Naadi (energy channel) and Chakra System (energy distribution nodes); Concepts of Balancing and Cleansing/Energizing, and how it works at each level.
- The Five levels of Circuitry or Aura including Yoga Therapy models: Ayurveda-Yoga model, Relaxation Response Model and the Life in Yoga Model
- Discovery of the primovascular system by Korean researchers, Bio-electrical conductivity at meridian points and Electro-Photonic Imaging and its application in measuring Yoga Therapy

In this presentation, Hatha Yoga is clarified as a set of practices more focused on the physical body, as opposed to Yoga which is a system. Thus the development of Tantra/Mantra Yoga, or Bhakti Yoga (Yoga of Devotion), etc. are explained within the system but are not the core focus of Hatha Yoga exercises.

Sunday 11:00 am to 12:30 pm –

Practice Session 7: Practice Review and Case Discussions

RAJAN NARAYANAN

This is a practice and discussion session of the following:

- Correlation of practices to health conditions.
- Case discussions and practices applied for success

Sunday 1:30 to 2:45 pm –

Preparing to Bring Yoga Therapy in Your Clinical Practice

RAJAN NARAYANAN

This presentation is a summary of all material covered with thoughts on how physicians can use the learning for themselves and for their practice.

This part will deal with the Life in Yoga Approach to customizing yoga regimen for each person's needs. The practice and discussion elements include the following:

- Yoga Therapy Applications in General Medical Practice.
- The Importance of working with exercises in five levels: physical, breathing, vibration, thought and pure observation.
- The three types of exercises evolved in yoga practices, and the differences in their physiological impact and as explained by the yoga concept of cleansing. Yoga approaches of Iyengar, Vinnyasa and Ravi Shankar will be discussed.
- The importance of spinal alignment and sequence in exercises.
- Learning to customize practices for each person: working with physical and other disabilities, and lifestyle factors.

To develop this customized approach, one requires the right paradigm to assess a person's natural activity and abilities, and also understand the ways in which exercises can be performed with varying effect. In this context stress at five levels and the methods of stress management are also discussed.

A system developed by Life in Yoga Institute called Measured Yoga Therapy and Unified System of Medicine is introduced and cases of application to patients are discussed. The research basis related to EAV (electro-acupuncture) and EPI (Electro-photonic imaging) is also discussed.

In addition to this segment, a conclusive perspective on the course is provided. Since this is only the first exposure to yoga therapy, for those interested opportunities for progressive learning will be indicated, while reiterating the course objectives.

An important point of this presentation is that participants should not mistake a single yoga exercise like a bio-chemical pill that is therapeutic for a particular disease, but rather there could be a whole range of exercises that deliver the same impact. It is really a regimen and lifestyle that delivers the complete result. Therefore it is not uncommon for different schools of yoga to prescribe different regimens for the same disease condition. The realm of impact must be understood within the framework of the 5 by 3 by 1 approach of Life in Yoga, the specific part of the body that may be affected and measured outcome.

Additionally, it is worth noting that yoga should be first considered a health maintenance system and then a therapeutic system. Therefore good health is sustained by lifelong practice.

Sunday 3:00 to 3:30 pm

Evaluation Quiz Review

A quiz will be administered and thereafter the questions will be reviewed with discussion.

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4. FACULTY PROFILE

Sat Bir Singh Khalsa, Ph.D., Assistant Professor of Medicine at Harvard Medical School

C. Rajan Narayanan, Ph.D., Executive Director, Life in Yoga Foundation and Institute

Dilip Sarkar, M.D., FACS, CAP – Chairman of Board, Life in Yoga Institute

Detailed Faculty Profiles

Sat Bir Singh Khalsa, Ph.D., Assistant Professor of Medicine at Harvard Medical School

Dr. Khalsa received his doctorate in human physiology and neuroscience at the University of Toronto and has conducted research in neuroscience, biological rhythms, sleep and sleep disorders since 1978. Since 2001 he has been fully engaged in basic and clinical research on the effectiveness of yoga and meditation practices in improving physical and psychological health. He has also been personally

involved in the practice of a yoga lifestyle since 1973 and is a certified instructor in Kundalini Yoga as taught by Yogi Bhanan. He is currently the Director of Research for the Kundalini Research Institute, Research Director of the Kripalu Center for Yoga and Health and an Assistant Professor of Medicine at Harvard Medical School in the Department of Medicine at Brigham and Women's Hospital in Boston.

He has conducted clinical research trials evaluating a yoga treatment for insomnia funded by the National Center for Complementary and Integrative Health of the National Institutes of Health. This research was targeted at examining not only the efficacy of yoga for the treatment of chronic insomnia, but also the neuroendocrine and neuropsychological mechanisms underlying the effectiveness of yoga practices in this population. He has also been involved in yoga research for addiction, back pain, performance anxiety, chronic stress, and generalized anxiety disorder. He has also evaluated the efficacy of yoga in treating post-traumatic stress disorder in military veterans (in association with researchers at the Trauma Center of Boston University). He has completed research projects for evaluation of a yoga program within the academic curriculum of public schools to determine the benefits to students in mental health characteristics such as perceived stress, resilience, emotion regulation and anxiety.

Dr. Khalsa has established relationships with fellow yoga researchers both in the U.S. as well as in Europe and in India. In India he routinely attends and presents at international yoga research conferences and in the U.S. he is actively working with the International Association of Yoga Therapists (IAYT) to promote research on yoga therapy, conducting the annual Symposium on Yoga research and serving as editor of the International Journal of Yoga Therapy. Since 2005 he has also been teaching an elective course at Harvard Medical School in Mind Body Medicine, which provides medical students with direct exposure to yoga classes.

While he is well published in yoga, the book “Principles and Practice of Yoga in Healthcare” is worth special mention. While he served as the chief editor and author, it is perhaps the first comprehensive book in yoga therapy and is a text for this course.

C. Rajan Narayanan, Ph.D., Executive Director & CME Director, Life in Yoga Institute and Foundation

Dr. Narayanan is a founder and inspiration behind Life in Yoga Foundation and Institutes, non-profits formed and active in the Washington metro area. He was visionary behind getting CME accreditation for Life in Yoga and serves as its CME Director. He also serves as the Secretary and a Board member of the Council for Yoga Accreditation International, an international body with membership consisting of the leading yoga institutions of the world, that serves to establish accreditation standards for yoga teaching institutions. He has developed the 5 by 3 by 1 approach of the Life in Yoga Foundation based on the principles of Asthaaga Yoga and the teachings of the Yoga Sutras of Patanjali. Based on these principles he has developed Gentle Yoga as a powerful practice accessible to all and Dance Yoga that would appeal more to younger and more energetic people. He has actively researched different aspects of yoga and has developed many more techniques over the last many years. He has also done a complete translation and commentary on the Yoga Sutras of Patanjali and the Bhagavad Gita. Over the last few years he has been working on techniques of instant measurability of yoga practices. He began

with measurements with Electro-Acupuncture tools (used to measure meridian flows of Chinese Medicine) in 2010. Over 2011-12 he completed a research project to measure vitality through electrical conductance in collaboration with SVYASA University in India. In 2012, he also worked with the Pulmonology practice of Dr. U. Nanavaty to begin case studies on COPD that are continuing into 2013. He completed a pilot study on Obstructive Sleep Apnea in collaboration with Dr. Harminder Kaur of Clarksburg Medical Center in 2013-14. End of 2014, he developed measurability with Electro-Photonic Imaging, which has now become part of Life in Yoga's practice method called Measured Yoga Therapy. With this technique in the second half of 2016 he was able to reverse Chronic Fatigue Syndrome of a subject who was suffering for 35 years and had spent 30 years exploring yoga options with many reputed institutions without success.

He began teaching Raaja Yoga in Washington area temples in January 1998, after Swami Bua of New York City completed a two week course in Hatha Yoga and Praanayaama. He has been a practitioner of Raaja Yoga since 1981 when he learned TM from Maharishi Mahesh Yogi's Institute. Thereafter between 1993 and 1995 he completed coursework on Hatha Yoga, Praanaayaama, and other Raaja Yoga practices at the Satchidananda Ashram in Yogaville, Virginia. While including a regimen of Hatha Yoga practices since then in his Raja Yoga routine, he has also been a student of Vedas and other Hindu scriptures. After a two week rigorous course in Sri Siva Vishnu Temple that was led by Swami Bua in 1998, starting initially as a weekly continuation of the Yoga practices, he started teaching new participants as well. Periodically various Yoga teachers and exponents from India and other parts of the US have visited these sessions.

In 1998 he became a Reiki Master and subsequently learned Kriya Yoga techniques of the Lahiri Mahashay lineage. In his exposition, he views all these techniques as part of the Asthanga Yoga Sutras of Patanjali or the Six Steps propounded by Gorakhnath, which he has refined in modern day terms in the Five Fold Functional Exercises (Physical, Breath, Vibration, Thought and Observation) taught by the Life in Yoga Foundation. Therefore the focus is on spiritual upliftment, although the physical and mental benefits are desirable by-products. Understanding of exercise physiology and the single-point focus stressed by Patanjali evolved into the 5 by 3 by 1 approach, where the 5 refers to the functional exercises, the 3 refers to formats and the 1 to the one-pointed focus.

From 2002 he has practiced and taught the Rainbow Bridge technique for cleansing of Karmas and Vaasanas. Mudras and their effect have also been his area of study. The Atma Vyakta Mudra and the Atma Poorna Mudra are part of the innovative discoveries. He has also developed a technique that removes Sanchita Karma that he has called Tryambakam Kriya. A less strong version called Tryambakam Karma Cleansing and a variation called 5-2-3 Karma Cleansing that is taught by the Life in Yoga Foundation is also his development. Besides these techniques, he has also developed the concept of CRE or Cyclical Rhythmic Exercising with the five types of energies, and has integrated them into an innovative development called Dance Yoga. Finding inspiration from the first chapter of the Chandogya Upanishad, he has also developed a more powerful technique of meditation called the Chandogya Upanishad Meditation.

He has also viewed religious practices from various religions to understand their yoga effect. To develop a deeper understanding of these practices he has also studied all the major religions of the world.

Outside the field of Yoga, Dr. Narayanan has worked as a marketing consultant and has served as an adjunct faculty in the business school of Georgetown University and other local Universities. Prior to that, in New York he has worked for American Express and BBDO Worldwide in roles of marketing analysis and strategic marketing. He was a full time faculty at the State University of New York at Cortland from 1985-87. He has Ph.D. in Economics from the State University of New York at Stony Brook.

Dilip Sarkar, M.D., FACS, CAP – Chairman of Board, Life in Yoga Institute

Dr. Dilip Sarkar is an expert in Yoga Therapy who combines his 45-year experience in Conventional Medicine with his knowledge of Integrative Medicine, Ayurveda and Yoga Therapy. Dr. Sarkar completed his Surgery internship and residency at St. Joseph Mercy Hospital in Michigan. Thereafter he underwent a fellowship in Cardiovascular Surgery at the Arizona Heart Institute in Phoenix.

He was formerly an Assoc. Prof. of Surgery at Eastern Virginia Medical School in Norfolk, Virginia, and Chairman of the Department of Surgery and Chief of Staff at Portsmouth General Hospital. He is a Fellow of the American College of Surgeons, American Association of Integrative Medicine (AAIM) and other esteemed societies. In 2010, in Life in Yoga Institute in collaboration with Howard University College of Medicine, he was a key member of the initiating team that started the first category one ACCME approved CME course in USA on Yoga Therapy for Medical Professionals. Dr. Sarkar has served the Commonwealth of Virginia as an advisor to the Governor's office. He serves on the American Heart Association Board, Hampton Roads, Virginia Chapter, as member, past chairman and president. He actively promotes the performing arts and cultural enrichment activities throughout Virginia.

Dr. Sarkar developed a profound interest in Ayurvedic medicine. His Ayurvedic training includes the Emerson Theological Institute Dhanvantari Ayurvedic Center. He is retired from medical practice to devoted time to the study of ancient approaches to healing and wellness, both in the Tidewater area of Virginia and in India. Now a Certified Ayurvedic Practitioner, Dr. Sarkar continues to teach classes in Yoga Therapy, Ayurvedic wellness, and Integrative Medicine. He is a registered yoga teacher, and actively teaches Yoga Therapy at several venues locally in Virginia, nationally and internationally.

Through news, radio, and television, Dr. Sarkar has educated countless individuals on subjects related to heart disease, medical research, and Yoga Therapy. Over the years, his talks have spanned from research in vascular surgery to stress management to yoga therapy to Patanjali's Yoga Sutras.

He serves on several healthcare boards and is a Life Member of NAMA (National Ayurvedic Medical Association), President of IAYT (International Association of Yoga Therapists), and Fellow of AAIM (American Association of Integrative Medicine). He is a Certified Ayurvedic Practitioner, and teaches classes in Yoga Therapy, Ayurvedic wellness, and Integrative Medicine. In 2016 he authored a book entitled ***Yoga Therapy, Ayurveda, and Western Medicine: A Healthy Convergence***.

Currently, he is the Chairman, School of Integrative Medicine, Taksha University, Hampton, Virginia, and the Chair of the Board of the Life in Yoga Institute.

