

## COURSE CURRICULUM

### Yoga As Medicine – 7 hr CME

**Saturday, November 3, 2018**

**The Hayes Mansion, 200 Edenvale Avenue, San Jose, CA 95136**

**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 7 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 7 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](http://www.theABA.org), for a list of all MOCA 2.0 requirements.***

#### **A. COURSE SUMMARY**

**1. COURSE DESCRIPTION:** The course is intended for physicians and other medical professionals. The intent is to

- bring awareness of the potential of yoga therapy as a complementary evidence-based medical practice in primary prevention and therapeutic care for chronic diseases;
- describe the philosophy/basis of yoga for therapeutic purposes and for health maintenance;
- recognize considerations for bringing yoga therapy into physician practice.

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 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 brain and 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 a wide range of existing diseases/disorders such as back pain, mental disorders, cardiovascular disorders, metabolic disorders, respiratory disorders, etc.

The course includes:

- Presentation, Discussions, Q/A;
- Introduction to simple practices that can be applied in regular clinical practice.

This information is designed for healthcare providers to:

- Become aware of researched yoga therapy benefits for physical and mental health;
- Consider lifestyle assessments in patient evaluation based on understanding of yoga;
- Prepare to advance further education in yoga therapy for more active implementation of yoga therapy in practice.

## 2. COURSE CONTENT :

LECTURE & DISCUSSIONS	PRACTICES
<ul style="list-style-type: none"><li>➤ Yoga Philosophy</li><li>➤ Research Report on Yoga Therapy Mechanism and Application for Chronic Diseases</li><li>➤ Bringing Yoga Therapy in Clinical Practice</li></ul>	<ul style="list-style-type: none"><li>➤ Overview of Yoga Practices with emphasis on Spinal Alignment and Breathing Practices with specific benefits</li><li>➤ Meditative Approaches</li></ul>

3. FACULTY – Indranill Basu-Ray MD, Cardiologist at Texas Heart Inst, Faculty Baylor School of Medicine  
C. Rajan Narayanan PhD, Executive Director, Life in Yoga Institute

## 4. COURSE ATTENDANCE LOGISTICS

COURSE DIRECTOR: Rajan Narayanan, 301-526-8308

LOCATION: The Hayes Mansion, 200 Edenvale Avenue, San Jose, CA 95136

Meals: Vegetarian lunch without onion or garlic will be provided. Refreshment in the morning and afternoon will also be available. If there are any specific requirements for individual participants, we can make a request to the hotel at least one week before the program. However we cannot provide any guarantee on what level of customization the hotel can accommodate with food service.

Parking: Free parking is available at the Hotel.

## 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

<u>Timing</u>	<u>Activity</u>	<u>Lead</u>
8:00 to 8:30 am	Registration	
8:30 to 8:45 am	Intro to Course and requirements for CME	<u>Narayanan</u>
8:45 to 10:00 am	Lecture: <b>Research Report and Extent of Application of Yoga As Medicine</b>	<u>Basu-Ray</u>
10:10 to 11:10 am	Lecture: <b>Physiological Understanding of the Mechanism of Yoga (Stress- relaxation response, neuroplasticity, gene expression, etc.)</b>	<u>Basu-Ray</u>
11:15am to 12:30 pm	<b>PRACTICE:</b> Spinal Alignment – discussion of importance of Spine and relationship to Brain	<u>Narayanan</u>
12:30 to 1:30 pm	Lunch	
1:30 to 2:30 pm	Lecture: <b>Philosophy of Yoga and its Relevance for Understanding Health</b>	<u>Narayanan</u>
2:45 to 4:00 pm	Lecture: <b>Preparing to Bring Yoga Therapy in Clinical Practice (includes dedicated time for Q/A)</b>	<u>Narayanan</u>
4:15 to 5:30 pm	<b>PRACTICE</b> – Introduction to meditation with appropriate breathing practices	<u>Basu-Ray</u>
5:30 to 6:00 pm	Taking Quiz for MOC and Completing CME formalities	<u>Narayanan</u>

## **2. DESCRIPTION OF PROGRAM SEGMENTS**

### **8:45 to 10:00 am Research Report and Extent of Application of Yoga As Medicine**

- History and Volume of Research
  - Beginnings of yoga physiology from the early twentieth century
  - Volume of PubMed publications
  - Translation from yoga physiology to yoga therapy in the last 40 years
  - NCCAM to NCCIH
  - Disease Categories on which research has been done
- Application of Yoga Therapy in the United States and Other Parts of the World
  - Generally acknowledged for Preventive Medicine
  - Use of Yoga Therapy in India
  - Emergence of Therapy Application in the USA: MD Anderson Cancer Center; Cleveland Clinic, etc.
  - Popularity and its pervasiveness
- Misunderstood Separation of Yoga and Meditation

### **10:10 to 11:10 am Physiological Understanding of the Mechanism of Yoga**

- Physiological changes in the body including its effect on breathing and heart rate; Heart-rate variability and effect on stress hormones.
- Yoga's impact on gene expression
- Yoga's impact on Neuronal connections, reorganization of the brain, increasing connectivity and growth of neurons (Neuroplasticity)
- The impact of yoga on different disease states-"the inflammatory conundrum of modern day diseases-and the role of yoga"

### **11:15am to 12:30 pm PRACTICE: Spinal Alignment**

Slow loosening of the muscles around the vertebral column to stimulate the central nervous system followed by slow deep breathing.

### **1:30 to 2:30 pm Philosophy of Yoga and its Relevance for Understanding Health**

- Yoga as a philosophy of existence
- Relationship of individual to creation and cause of ill-health

- Concept of Chakras and Naadis – Primovascular system
- Relationship to Ayurveda and Chinese Medicine
- Modern Yoga Therapy Research Versus Emergence of Measured Yoga Therapy
- Concept of Unified System of Medicine

**2:45 to 4:00 pm Preparing to Bring Yoga Therapy in Clinical Practice**

- Legal and Economic Considerations
- Logistical and Patient Capacity Considerations
- Patient Behavioral Considerations to get success
- Applications of different types of protocols
- Applications for different diseases: including coronary artery disease, diabetes mellitus, hypertension, depression, PTSD and cancer.
- The particularly important use of yoga in palliative care and hospice.
- Planning further education

**4:15 to 5:30 pm PRACTICE – Introduction to meditation with appropriate breathing practices**

Meditation is a part and parcel of yogic techniques as described in Patanjali's Yoga Sutra. This technique involves breathing practices that improves oxygenation to tissues, improves hormonal imbalance rendered by inflammatory states, also corrects aberrations in emotions like anxiety fear and depression that is perpetuated by chronic stress.

### 3. REFERENCES

#### A. GENERAL TEXTS & REFERENCES

TEXT 1: “Yoga Therapy and Integrative Medicine: Where Ancient Science Meets Modern Medicine” – March 16, 2015 by Larry Payne Ph.D. (Author), Terra Gold M.A.LAc. (Author), Eden Goldman D.C.

TEXT 2: “Principles and Practice of Yoga in Healthcare” by Sat Bir Khalsa, Lorenzo Cohen, Timothy McCall and Shirley Telles, Handspring Publication 2016

TEXT 3: “Yoga Therapy, Ayurveda and Western Medicine – A Healthy Convergence” by Dilip Sarkar

Additional Reference Books:

1. ‘Yoga as Medicine’ by Timothy McCall, M.D.
2. “Meditation as Medicine” by Dharma Singh Khalsa, M.D.
3. “Yog in Synergy with Medical Science” by Acharya Balakrishnan

Journal References:

Yoga as a Therapeutic Intervention: A Bibliometric Analysis of Published Research Studies from 1967 to 2013.

Jeter PE, Slutsky J, Singh N, Khalsa SB.

J Altern Complement Med. 2015 Oct;21(10):586-92.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4605382/pdf/acm.2015.0057.pdf>

The Neural Mechanisms of Meditative Practices: Novel Approaches for Healthy Aging.

Acevedo BP, Pospos S, Lavretsky H.

Curr Behav Neurosci Rep. 2016;3(4):328-339.

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5110576/pdf/40473\\_2016\\_Article\\_98.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5110576/pdf/40473_2016_Article_98.pdf)

Meditation and Yoga can Modulate Brain Mechanisms that affect Behavior and Anxiety - A Modern Scientific Perspective.

Krishnakumar D, Hamblin MR, Lakshmanan S.

Anc Sci. 2015 Apr;2(1):13-19.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4769029/pdf/nihms716158.pdf>

Integrating complementary/alternative medicine into primary care: evaluating the evidence and appropriate implementation.

Wainapel SF, Rand S, Fishman LM, Halstead-Kenny J.

Int J Gen Med. 2015 Dec 7;8:361-72.

<https://www.dovepress.com/getfile.php?fileID=28272>

Meditative Movement Therapies and Health-Related Quality-of-Life in Adults: A Systematic Review of Meta-Analyses.

Kelley GA, Kelley KS.

PLoS One. 2015 Jun 8;10(6):e0129181.  
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0129181>

Effects of yoga on mental and physical health: a short summary of reviews.  
Büssing A, Michalsen A, Khalsa SB, Telles S, Sherman KJ.  
Evid Based Complement Alternat Med. 2012;2012:165410.  
<http://downloads.hindawi.com/journals/ecam/2012/165410.pdf>

Health Impacts of Yoga and Pranayama: A State-of-the-Art Review.  
Sengupta P.  
Int J Prev Med. 2012 Jul;3(7):444-58.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3415184/?report=printable>

Bioenergy and its Implication for Yoga Therapy.  
Narayanan CR, Korotkov K, Srinivasan TM.  
Int J Yoga. 2018 May-Aug;11(2):157-165. doi: 10.4103/ijoy.IJOY\_54\_17. PMID: 29755226  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5934952/>

Immediate effect of slow pace bhastrika pranayama on blood pressure and heart rate.  
Pramanik T, Sharma HO, Mishra S, Mishra A, Prajapati R, Singh S.  
*J Altern Complement Med.* 2009 Mar;15(3):293-5. PMID: 19249921 [PubMed - indexed for MEDLINE]  
<https://www.ncbi.nlm.nih.gov/pubmed/?term=PMID%3A+19249921>

Narayanan CR. Yoga Sutras [http://lifeinyoga.org/App\\_Downloads/YogaSutras.PDF](http://lifeinyoga.org/App_Downloads/YogaSutras.PDF)

Primo Vascular System: A Unique Biological System Shifting a Medical Paradigm.  
J Am Osteopath Assoc. 2016 Jan;116(1):12-21. doi: 10.7556/jaoa.2016.002. Erratum in: J Am Osteopath Assoc. 2016 Apr;116(4):201. PMID: 26745560  
<https://www.ncbi.nlm.nih.gov/pubmed/?term=PMID%3A+26745560>

Chronological Review on Scientific Findings of Bonghan System and Primo Vascular System.  
Kang KA.  
Adv Exp Med Biol. 2016;923:301-9. doi: 10.1007/978-3-319-38810-6\_40. PMID: 27526157  
<https://www.ncbi.nlm.nih.gov/pubmed/?term=PMID%3A+27526157>

## **B. FURTHERING YOGA EDUCATION**

National Center for Complementary and Integrative Health (NCCIH) website. Available at:  
<https://nccih.nih.gov/>

Review current yoga research studies /  
<http://clinicaltrials.gov/ct2/results?term=%28yoga%29+%5BTREATMENT%5D&recr=Open&flds=Xabmn>

National Institutes of Health website. Available at: <http://www.nih.gov/>

International Association of Yoga Therapists website. Available at: <http://www.iayt.org/>

SVYASA University website. Available at: <http://www.svyasa.org/>

Kaivalyadhama Yoga Institute website. Available at: <http://www.kdham.com/>

Morarji Desai National Institute of Yoga website. Available at: <http://www.yogamdny.com/>

Patanjali Yog Peeth website. Available at: <http://www.divyayoga.com/main.htm>

Taksha University, School of Integrative Medicine website. Available at: <http://www.taksha.org/page/sim>

Yoga Institute website. Available at: <http://www.theyogainstitute.org/>

## 4. FACULTY PROFILE

### **Indranill Basu-Ray, MD**– Texas Heart Institute, Baylor College of Medicine

Dr. Basu Ray is a Cardiologist with the Texas Heart Institute, Baylor CHI St' Luke's Medical Center, Baylor College of Medicine at Houston Texas, USA.

He was a former faculty in Medicine (Cardiology): Harvard Medical School and the Chief: Center for Invasive Cardiac Electrophysiology Research, Beth Israel Deaconess Medical Center, Harvard Medical School. He has worked as an academic physician, researcher, and scientist at various reputed medical institutions in the United States and India. He is trained in Cardiology and Interventional Cardiac Electrophysiology from India, Canada, and the USA.

Dr. Basu Ray has been meditating since the age of six. He has been a practicing Kriya Yoga and has been a disciple of Kriya Yoga Master Swami Hariharananda Giri, who got trained by Mahamuni Yuktेशwarji and Paramhansa Yogananda the celebrated masters of Kriya Yoga. His research centers on the use of meditation and yoga in modern medicine particularly heart diseases.

Dr. Basu Ray has been invited to deliver invited lectures at many premier institutes in this planet including Harvard, MIT, Georgia Tech, Cleveland & Mayo Clinic to name a few. He also was an invited guest speakers at multiple organizations including those of physicians like Texas Medical Association. He is also the author of numerous research articles and book chapters in cardiology. He is the editor of Clinical Cardiology a book for medical curriculum for subspecialty training in cardiology with over 40 authors from all over the world. He is also the author/editor of many other textbooks in Cardiology including EKG: For the medical students & Pacemaker, Defibrillators & CRT in clinical practice for the non-specialist physicians. He is also an author of "Meditation & its use in Cardiovascular Diseases" which is a book to be published in early 2017. Dr. Basu Ray has conducted meditation workshops in the US and India. He has been recently selected by the American Heart Association to be in the writing committee for writing guidelines on the use of Meditation in Cardiovascular Disease.

He is also serves in honorary faculty roles as Professor of Cardiology, SYASA, Bengaluru, India and also the Dean and Professor of Integrative Medicine, Hindu University of America, College of Complementary and Alternative Medicine.

Dr. Basu Ray is one of the 10 Cardiologist chosen to write the American Heart Association Guideline on the use of Meditation in Cardiovascular Diseases.

Dr. Basu Ray writes regular invited columns in different national and international journals and newspapers including Huffington Post, India Today etc other than his medical writing based on his research.

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

**Dr. Narayanan** serves as a yoga therapy clinician and researcher treating patients in clinics in Maryland, Texas and Arizona, while also serving as the administrator for Life in Yoga Institute, including the role of CME Director. He is a founder and inspiration behind Life in Yoga Foundation and Institutes, non-profits formed and active in the Washington metro area. 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 education.

His most recent publication is: [Bioenergy and its Implication for Yoga Therapy.](#) Narayanan CR, Korotkov K, Srinivasan TM. Int J Yoga. 2018 May-Aug;11(2):157-165. doi: 10.4103/ijoy.IJOY\_54\_17. PMID: 29755226 reflects his research of several years.

He has developed many approaches and applications of yoga:

- Measured Yoga Therapy (and Unified System Medicine approach) that measures root cause of health issues through electro-photonic imaging based on Chinese Medicine and Ayurveda, and validates immediately the efficacy of various treatments by the same measurement;
- 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, CRE Breath 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. [Spinal alignment techniques, Meditation techniques, Psychological cleansing techniques; Mudras]

He began teaching 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 started his practice with TM from Maharishi Mahesh Yogi's Institute in 1981. Thereafter between 1993 and 1995 he completed coursework on Hatha Yoga, Praanaayaama, and other Raaja Yoga practices at the Satchidananda Ashram in Yogaville, Virginia. Since 1990 he has been a student of Vedas and other Hindu scriptures, and in stages has also studied all the major religions of the world. In 1998 he became a Reiki Master and subsequently learned Kriya Yoga techniques of the Lahiri Mahashay lineage.

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.