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Yoga for Health and Wellness: Evidence-Based and Inexpensive Therapeutic Adjunct from Bharat

Indranill Basu-Ray

Cardiac Electrophysiologist, Prof of Cardiology and Public Health and the Founder-Chairman, American Academy for Yoga in Medicine, Memphis, TN 38139

Address for correspondence:

Dr. Indranill Basu-Ray,
MD (Med), DNB (Card),
D.Sc (Honoris Causa),
FACP, FACC, Cardiac
Electrophysiologist,
Prof of Cardiology and
Public Health and the
Founder-Chairman,
American Academy
for Yoga in Medicine,
1755 Groveway
Drive, Germantown,
Tennessee,
USA 38139.
E-mail: ibr@ibasuray

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Hon'ble PM of India, Sri Narendra Modi ji, has been sharing his heartfelt thoughts and experience including Yoga through Mann Ki Baat (MKB), an initiative he started in 2014. The significant health benefits of Yoga have been mentioned several times in the MKB. In September 2014, the PM proposed celebrating the 21st of June as International Yoga Day while addressing the United Nations Assembly. The proposal got overwhelming support from 177 countries. In the history of the United Nations, such vast numbers of supporters for one proposal were seen for the first time.^[1] Further, Prime Minister Sri Modi rightfully contended that Yoga is a priceless gift handed over to us by our ancestors, which we have given to the world. Yoga gives the power to lead a balanced and healthy life in a world mired by war, pandemics, and the quagmire of stress and struggle for existence. Sri Modi further elaborates that practicing Yoga ensures healthy living and being richly endowed with strong willpower, nurturing supreme self-confidence, and concentration on every task rendering its completion with success.^[2] Through the MKB series, the PM has attracted the attention of billions of people worldwide towards Yoga. The current article presents further elaborates on the scope of Yoga as the most elaborate and scientifically proven integrative medicine for health and wellness.

Modern medicine has experienced spectacular development in vaccines,

antibiotics, and surgeries. In addition, technological advancement has enabled the early detection of diseases through the genetic probe and state-of-the-art imaging. The Nobel Prize in Physiology or Medicine has been awarded **113 times** to 225 Nobel Prize laureates between 1901 and 2022. This landmark research has made us capable of generating state-of-the-art medicine, understanding the pathophysiology of diseases, and the role of non-therapeutic effects in human physiology, such as intermittent fasting. With so many laurels, modern medicine is still grappling with non-communicable diseases (NCDs). NCDs include cardiovascular disease, respiratory disorder, cancer, obesity, and diabetes.^[3] The present trend in NCDs is estimated to entail a cumulative loss of \$47 trillion by 2030.^[4] Moreover, with the ongoing Covid 19 global pandemic, NCD prevalence and associated expenditures are projected to ascend.

In India, about 77 million people over 18 years suffer from diabetes, and nearly 25 million are prediabetics. According to Apollo's Annual Health of the Nation reports, non-communicable diseases have become the leading cause of death and suffering, contributing to about 65% of deaths in India.^[5] An extensive survey of urban Indian elderly residents reported that 71% of the survey participants had one NCD. In comparison, 40% elderly had more than two NCDs.^[6] According to a report by Apollo, during the years 2019 and 2022, there was a 50% increase in the obesity rate, an 18% rise in dyslipidemia and cholesterol irregularities, an 8% rise in diabetes, and an

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11% increase in hypertension cases, among the Indian population.^[7] NCDs affect health, productivity, and economic growth, and the financial burden is expected to rise across the globe.

The development of NCDs starts much earlier than the appearance of physical symptoms of the disease. Thus, stalking patients for years without any symptoms till it presents with disabling symptoms that require urgent care. It is now contended that the two largest killers, particularly cardiovascular disease (CVD) and less likely cancers, unfortunately, have an aberrant lifestyle as the risk factor. NCDs, like CVD, is exquisitely sensitive to prevention by instituting radical changes in lifestyle, including diet, exercise, and compliance with healthy living. On the other hand, it can be seen that several risk factors for NCDs, like sedentary life, tobacco, and alcohol, unhealthy diet, have increased with modernization and socioeconomic growth.

As the risk factors for NCDs overlap among various diseases, the benefit of one preventive intervention is mandated to extend beyond the effects of a single disease.^[8] Making corrections to modifiable risk factors like losing weight, daily exercise, and healthy nourishment would help in the prevention of NCDs. It would be cost-effective for the individual and the community. The intervention should be readily available, cost-effective, evidence-based, patient-centered, and sustainable. It would require multilevel action from healthcare organizations and the government to create awareness among the people about any such interventions available. The need for significant funds has limited the execution and scale-up of such programs in many countries. At the same time, dedicated personal awareness and deliberate choice of a healthy lifestyle are mandated both for primary and secondary prevention.

This is where Yoga, a holistic mind-body practice, comes into play. The method of Yoga and its philosophies focus on health rather than disease. It is based on a holistic approach, emphasizing health promotion and education. *Pranayama* (breathing), *Pratyahara* (concentration), *Dharana* (mindfulness), *Dhyana* (meditation), and postures are essential aspects of Yoga therapy.^[9] Numerous studies highlight benefits of Yoga in combating various non-communicable diseases and their symptoms.^[10] A meta-analysis reported that in people with cancer, Yoga-based interventions are associated with improvement in symptoms of depression and anxiety and therefore suggested as a promising therapeutic modality. Mindfulness and meditation practice reduced cancer-related distress and depression, improved Quality of Life scores, helped in developing self-compassion and mindfulness skills and reduced rumination.^[11] With the investigation

in several randomized controlled trials, Yoga has been considered a safe and effective intervention for managing hypertension.^[12] Another review concluded that Yoga and/or meditation could control risk factors for cardiovascular disease.^[13] A review of 45 articles reported improvement in the immunological profile indicated by improved biochemical markers of an individual with Yoga. Moreover, the beneficial effects of this traditional Indian intervention was also found to positively impact overall physical and physiological well-being and quality of life. Also, Findings of the review indicate that Yoga can strengthen cell-mediated immunity and hence could be used as an effective preventive measure against COVID-19, where immunity plays a critical role.^[14] The immense damage the pandemic had on the mental health of individuals and the community could be reversed with Yoga as it has shown improvements in mental health by alleviating anxiety, depression, and stress, with enhancement in mindfulness, self-control, and self-regulation as reported in a narrative review of multiple studies. This review also demonstrated that Yoga improves innate immunity and inhibits cytokine release syndrome and correlated with numerous cardioprotective effects that may help in preventing lung and cardiac injury due to COVID-19 infections.^[15]

A review of studies concluded on Yoga as and adjunct to medical therapy for management of arrhythmia reported that Yoga reduces arrhythmia burden, improves hemodynamic parameters such as resting Heart Rate and Blood Pressure, and reduces symptoms by increasing the vagal tone and reduction in autonomic fluctuation.^[16] In 2017 American Heart Association suggested that meditation may be considered as an adjunct to guideline-directed cardiovascular risk-reduction interventions.^[17] Studies have demonstrated the beneficial effects of meditation on various CV risk factors, decreasing CV mortality and improving hypertension, diabetes, dyslipidaemia, and high cortisol.^[18] A literature review of 1149 articles that included most of the NCDs provided an idea of the role of Yoga in various clinical conditions and its future therapeutic implications.^[19]

Yoga, in the new age, is one of the most widely practiced evidence-based mind-body disciplines, combining postures, breathing, relaxation, meditation, and healthy lifestyle principles. Numerous studies highlight its beneficial effects on various health parameters, including the potential to alter the pathophysiology of diseases. Over the past few decades, Yoga has evolved from a traditional practice in India to a universally accepted, modality. As it gains acceptance in Western culture and modern medicine, Yoga demonstrates its potential to revolutionize integrative medicine. Yet, despite extensive research and global reach, barriers to its widespread

application remain, primarily due to a need to understand Yoga's science among the general population. Moreover, even Yoga practitioners are trained in the physical aspects of Yoga. Therefore, they mostly acquire clinical training from competent Yoga clinicians who are qualified with clinical and research training in Yoga. Self-declared Yoga Gurus and experts should be actively discouraged from fomenting unscientific rules and norms, as this harms the science of Yoga.

In times of pandemics and economic crises, Yoga can be a preventative measure against non-communicable diseases (NCDs), reducing the global disease burden and healthcare expenses. Educational institutions, healthcare centres, and policymakers should recognize potential benefits of Yoga, and advocate for its broader adoption. Considering the wealth of scientific evidence accumulated in recent years, it's evident that the new generation should be educated about this ancient form of holistic living and healing. While the present initiative of the government to inculcate an understanding of Yoga at the medical school level is important.

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Conflicts of interest

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