



BY WHAT MEAN WE CAN WE USE THE TEACHING OF GITA AND YOGA IN MODERN DAY TO REDUCE ANXIETY

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ABSTRACT: *The importance of teaching yoga and Gita in early childhood refers to the formative stage of first six years of life, with well-marked Sub-stages (conception to birth; birth to three years and three years to six years) having Are-specific needs, following the life cycle approach. It is the period of most rapid growth in addition, development and is critical for survival. Growing scientific evidence confirms that There are critical stages in the development of the brain during this period which Influence the pathways of physical and mental health, and behavior throughout the life cycle. Deficits during this stage of life have substantive and cumulative adverse impacts we use yoga and some lectures to the beneficiary of the ICDS, then we can see the change on human, development. Bhagavad Gita is part of the great epic Mahabharata, a widely popular mythological story in Hindu philosophy; part of BhishmaParva, Gita is Almost in its entirety the dialogue between two individuals, Lord Krishna (considered as Incarnation of Bhagawan Vishnu, Narayana) and Arjuna (the Pandava prince, Nara) in the battlefield (war between the Pandavas and the Kauravas, the cousins, for control of The kingdom of Hasthinapura) of Kurukshetra. It has 18 yoga's (chapters), with about 701 shlokas (short poems), the first one being "Arjuna Vishada Yoga" (Sorrow of Arjuna) and the last one "Moksha Sanyasa Yoga" (Nirvana and Renunciation. Yoga is the teaching about whole body. Yoga and Gita classes will change the whole environment of the society as whole. The study was done in to see the use of yoga and teaching of Gita in children adolescent, women, pregnant mothers and all who attend a small group. The yoga training and readings and shlokas in pregnant women, adolescent girls and children were given, they were tested on Sinahas anxiety score before and after the Gita and yoga class. The result of Sinha anxiety scale was less after the yoga and Gita class in the above mentioned training so we can see that the training of yoga and Gita class by yoga*



teacher and small verse of Gita a Saw a small change. So if we implement this at national level it will be a big change. We will be able to bring the changes in the future generation in the modern system in India. Indian religions, yoga (from the Sanskrit word meaning “yoking” or “joining”) is “the means or techniques for transforming consciousness and attaining liberation (moksha) from karma and rebirth (samsara).” [It is “a practice by means of which a spiritual seeker strives, to control nature to make the soul fit for union with the Oversoul (the true Self or Atman-Brahman or “God”), and to attain union with God and thus the liberation of the soul from the rounds of rebirth and death.” Yoga is popularly understood to be a program of physical exercises (asana) and breathing exercises (pranayama). Yoga began in India as early as 3000 B.C. according to archeological evidence. It emerged in the later hymns of the ancient Hindu texts (Upanishads or Vedanta) (600–500 B.C.). It is mentioned in the classic Indian poem Mahabharata (400 B.C. - 400 A.D.) and discussed in the most famous part of that poem, the Bhagavad Gita. Yoga was systemized by Patanjali in the Yoga Sutras (300–200 B.C.). Patanjali defined the purpose of yoga as knowledge of the true “Self” (God) and outlined eight steps for direct experience of “Self.” All the orthodox systems of Indian Philosophy have one goal in view, the liberation of the soul through perfection. The method is by Yoga- Swami Vivekananda. Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in India that has become increasingly more common in Western society. “Yoga” means union of our individual consciousness with the Universal Divine Consciousness in a super-conscious state known as Samadhi. The first book of humankind, Rigveda, mentions about yogic meditation by the wise, while Yajurveda exhorts us to practice yoga for enhancing mental health, physical strength, and prosperity. Upanishads are replete with yogic concepts. In addition, yoga-related terms like pranayama and samadhi occur repeatedly in Bhagavad-Gita. Ancient Indian rishis understood that performing Raja-yoga (procedure of concentration to liberate soul or atma from the bondage of maya into paramatma) always need a healthy body – “Sharirmadyam, khalu dharma sadhanam.” So they developed “Hatha yoga,” which includes asana, mudra, pranayama, etc. “Gharanda samhita” said there were 84 lakh asanas from which 16 000 were best and only about 300 are popular. “Hathayoga-pradipika” again



differentiates all asanas into four basic classes – sidhyasana, padmasana, sinhasana, and vадrasana.

PAPER

Swami Vivekananda had once famously stated that the concept of fearlessness more property, had burst out from the Upanishads to stun the multitudes steeped in self-abnegation and bound by Inertia of lethargy. Youth that symbolized the essence of fearlessness. Abhih, the world around us.

What effect the various events have on our thought processes, how we respond to the changes in the social. Economic and infotainment craze that lights up today's world.

Unfortunately, we live in a false world: a civilization of plastic flowers and astro turf, air conditioning and fluorescent lights; windows that don't open and background music that never stops; walkman and watchman, entertainment cocoons; frozen food for microwave ovens and sleepy hearts jump started by caffeine, alcohol, drugs and illusions, we are members of a Page Three world, where all that glitters is gold and no one cares what lies within; we are members of a world where men and dogs dine together on one hand and on the other, people spend millions for treatment for treatment for their pet canines; we are members of a world where plotting politicians orchestrate wars and the commoners pay with their lives; we are, in brief. Leading lives of self-deception.

At this juncture, we find ourselves groping for a source to sustain ourselves amidst all this glitz. This is where art comes in. Art not only provides an avenue of outlet of our pent up thoughts and emotions, it also gives us respite from our day-to-day grind in the race to win in this competitive dog-cat-dog era. This brings to mind an oft-quoted opinion of Vladimir Mayakovsky, where he observes that art is not a mirror to see the world, but in fact, it is a hammer to remould the world. Abhih reflects the thought processes of the students of today.... The citizens of tomorrow... and showcases an enormous amount of intellectual energy waiting to be harnessed. Thus, however vague, Abhih holds an indication of the days to come.

The task of channelizing thoughts in a proper path and translating them into apt expressions require colossal effort. Consequently, it is understandable that errors may creep into the Endeavour of ours. We claim responsibility and seek the reader's grace in forgiving any



errors of omission or commission that may have crept into our efforts inadvertently or due to our ignorance. We hope that these errors will be our steppingstones in the process of our education. Where the mind is without fear and the head is held high. We seek divine grace so that may come down into our lives and baptize us through the mantra of truth and fearlessness Aum.

Have faith in yourselves. Swami Vivekananda has exhorted you time and again in order to rouse self-confidence in you. When he says "yourselves", he does not mean you as bodies. 'Yourselves' here means Atman, your 'divine nature'. You have bodies. But these are changing constantly. Bodies are not your real nature. You have minds. These are, once again, in a state of constant flux. You cannot ask your minds to stop changing. How can the mind be your reality then? You have intellect, still finer than mind but it is also not your true self. When you are in a deep sleep state, you have no perception of intellect. In fact, intellect is absent in that state of sleep. Your existence as Mr such and such depends ultimately upon Atman which is ever present in you. Have faith in Atman and be brave, be strong. Most of you are students of Science. Good. If you have this faith in yourselves, you become pure and know that purity is strength. You purify your minds by eliminating the sensate limitations and egotistic distortions. See how great you are all. Vedanta teaches this power of the Divine in us. It does not preach any dogma, any blasphemy.

In Science, you have accepted two poles, namely the knower and the known. You as knowers are supposed to know the object, the known,. The known or the object (be it an atom or a subatomic particle) occupying a space is called Mahakasha. But as knowers, you occupy a space which is known as Chittakasha. If you proceed further with faith, you will find that these two poles do not persist for long. They become one occupying the space of Pure Consciousness or Chidakasha. The known and the knower and the very act of knowing all get dissolved into this Chidakasha if you can control your desires by controlling your minds, This is so because Chittakasha is the breeding ground of all desires. When this Chittakasha is absent following the absence of desires, you stand glorified in the state of Atman. You exist then in Chidakasha. Having faith in yourselves means having faith in this very Chidakasha or pure conscious state of yourselves.



Moreover, I have not been asking you to have blind faith. Faith is knowledge itself; no part of your faith could ever be blind. Your pioneers in the discipline, say, Science, discovered some truths and you accept these truths and verify these. They never asked you to blindly believe them or follow them. With faith, you proceed and get to truths through an assiduous practice in the laboratory. H₂O makes water. This is a simple truth, found and established by your pioneers. With faith, you start to prove it in the laboratory and you do that, much to your joy and satisfaction. This is true of every scientific discovery. You have to experiment and recheck the discoveries yourselves.

Mind you that this faith is also known as Shraddha. Scientists of bygone years proved certain truths. You have to have Shraddha in their statements, findings and utterances and then follow the way they did. Similarly, innumerable saints reiterated that your nature is divine, blissful and pure consciousness. Since they realized these truths following their own methods, we have no right to laugh away their discoveries also. You have to realize those truths of the ancients seers yourselves by meticulously following the set of dynamic disciplines they made use of.

Sometimes you say, "Should we not entertain doubts?" Of course, yes. But you know that doubts have to be based on Shraddha resulting in creativity. Such doubts are wholesome and useful. But doubts for the sake of doubts only are the worst things in the world. They breed cynicism. If you are cynical, you would never be good students, good teachers, good scientists or good spiritual explorers. It is a disease. There is no creativity in it. Remember the message of Sri Ramakrishna conveyed through the parable of fishing: You have to take a fishing rod, a line; fix an attractive bait to the hook; go to a lake etc. You have to sit calmly watching the float. You have not seen fish in the lake. But people say there are big fishes. You may not catch a single one though you have been trying for three consecutive days. Do you then conclude that there is no fish in the lake? No. On the contrary, with faith and Shraddha you will continue till a day comes when you succeed. You have to persist and persevere. This initial Shraddha is a must for success both in physical science and the science of human possibilities as well. Sometimes you get frustrated in your Sadhana or research. But if you stick to it with unflinching devotion and faith, you will surely see the silver lining on one blessed day. This is known as Tapasya or austerity. Go and ask every Noble Laureate



– how did he or she go in for Sadhana in unveiling the mysteries behind the creation in the physical world? The same urge and efforts are necessary everywhere. Our fields of the search only differ. The great Gaurapada in his MandukyaKarika said,

The disciplining of the mind is to be pursued with dauntless and cheerful determination, just like the determination to empty the ocean, drop by drop with the tip of Kusha-grass.

This is the kind of effort you have to put in if you seek success anywhere, be it in the Physical Universe of Spiritual Kingdom. And you have to do it smilingly, cheerfully. (*Edited version of the speech to the freshers, 2004)

Civilization refers to the having mode of living. It is a kind of freedom we achieve by controlling and manipulating the visible world. We need to have so many things to live happily, to maintain our body and mind. Civilization thus means development or progress without. The spectacular development of Science and Technology has conferred on us a great number of consumables; we feel that our life is secure and safe from all diseases. When our goal is to accumulate things and enjoy them, we are then in the realm of civilization. A man of civilization feels that his happiness consists in enjoyment. He judges everything in terms of profit and pleasure which give him a life which is actually short, nasty and brutish. But culture is related to the being mode of living. A man of culture asks the questions direct: “You have so many things, but what are you, after all? Are you happy? What do you want to be? This is important in that we ultimately want happiness or peace and if our own accumulated things cannot provide that us with that peace, we have to seek it elsewhere. Peace is in the mind or it is a state of mind. Culture is then defined as growth within. By controlling the mind, one can grow in culture. A man of culture is sacrificing; a man civilization is selfish. Examples :Ravana is a man of civilization. He has freedom of the senses only. He controls the outside world like a king and enjoys it but cannot control his passion, his instinct, his desires. Buddha or Rama, on the other hand, is the example of a man of culture. He is free from the onslaught of his sense organs likeHe has freedom from the senses. This is a new kind of freedom which he achieves by realizing his deepest spiritual personality. He is happy. A man who is free from desires is really happy. Happiness does not depend upon things we accumulate. We are men and women of civilization already; now we have to be persons of culture by controlling our mind through a



Yoga process which helps us control our mind by regulating the respiratory system better known as Pranayama. It helps the awakening of the power in us. We have to evolve into the fullness of ethical life, of moral and spiritual life. All great people are powerful but this power is not the power of the physical body. They are specially gifted with the power of intellect (Buddhibalam) and the power of soul (Yogabalam or Atmabalam). Unfortunately, most of us aspire to culture, having faith only in muscle power (Bahubalam).

A man of culture is conscious of his spiritual power and a man of civilization has faith in muscle power only.

In chapter XVI of the Bhagavad Gita we get a set of 26 qualities of a man of culture and 6 qualities of a man of civilization. In the Kathopanishad also, the young boy Nachiketa was tested by the God of Death, Yama, but Yama failed to allure him. Nachiketa rejected the life of enjoyment and accepted the life of sacrifice and ultimately received instructions for living a spiritual life. Another great woman Maitreyee of the BrihadaranyakUpanisad rejected the life of enjoyment and accumulation that her great husband Yajnavalkya wanted to offer her. She pronounced: "What shall I do with that which does not make me immortal?" Our scriptures, indeed, are full of such examples as would show that the goal of human life is to realize the divine within.

We need to be educated to convert every fact before us into our own faculty and thus in reality becomes perfected beings. Education is not a fact; it is a faculty, Swamiji says. Water drowns us; it is fact. But when we learn the art of swimming, we can cross the river easily by making use of water. It then becomes our faculty. "Education is the manifestation of the perfection already in man". Swamiji's another definition of education. We have to attain perfection. Education helps us attain that. It is very difficult to define perfection but not at all difficult to follow it. It is a process by which a crude man gradually evolves into a God-man through education. What it in general, means is going beyond the crudities of life. As the crude oil is refined into many valuable products, scented or otherwise, similarly, if the mind is refined, it will make us tremendously powerful and we, thus, attain perfection. This cultured mind will be bereft of anger, greed and of all inordinate desire. It becomes concentrated. The formal education that a pupil receives helps him sharpen his intellect only. It makes him efficient in activity. It makes him a highly civilized man. But he has to



become a perfected being like the Buddha. That is feasible when he imbibes the spirit of Rishihood in him.

When he becomes the king of the outside world and Rishi of the world within simultaneously, he becomes educated.

Education thus makes a man Rajarshi-a Raja outside and a Rishi within- a very popular concept with Revered Swami Ranganathanandaji Maharaj who has coned it from the Gita..man has so many things for enjoyment but he should enjoy these with a detached mind. If education fails to create an ambience for the making of such developed souls in the society in large number

In Indian religions, yoga (from the Sanskrit word meaning “yoking” or “joining”) is “the means or techniques for transforming consciousness and attaining liberation (*moksha*) from karma[3] and rebirth (*samsara*).”[4] It is “a practice by means of which a spiritual seeker strives, (1) to control nature to make the soul fit for union with the Oversoul (the true Self or *Atman-Brahman* or “God”), and (2) to attain union with God and thus the liberation of the soul from the rounds of rebirth and death.”[5] Yoga is popularly understood to be a program of physical exercises (*asana*) and breathing exercises (*pranayama*).

Yoga began in India as early as 3000 B.C. [Table 1], according to archeological evidence.[6] It emerged in the later hymns of the ancient Hindu texts (Upanishads or Vedanta) (600–500 B.C.). It is mentioned in the classic Indian poem *Mahabharata* (400 B.C. - 400 A.D.) and discussed in the most famous part of that poem, the *Bhagavad Gita*. Yoga was systemized by Patanjali in the *Yoga Sutras* (300–200 B.C.). Patanjali defined the purpose of yoga as knowledge of the true “Self” (God) and outlined eight steps for direct experience of “Self.”

The history of yoga and world religions



Chronology	Major event	
10 - 5000 BC	First Civilized Cities Indus valley	Paintings found of Yoga Meditation in archaeological excavations in the Indus valley. This sophisticated culture developed around the Indus river and the long gone Saraswati river in northern India, on the border towards Pakistan.
3000 BC	Stone Seals Yoga Poses	Earliest archaeological evidence of Yoga's existence could be found in stone seals which depict figures of Yoga Poses.
2008 BC	The Vedas Period of Yoga	A collection of hymns, mantras, and Brahmanical rituals that praised a greater being. Yoga is referred to in the book as yoking or discipline without any mention of a practice or a method to achieve this discipline. The <i>Atharva Veda</i> too mentions yoga with a reference to controlling the breath.
1500 BC	Birth of Hinduism and Judaism	
800 BC	Upanishads: Pre-Classical Yoga Period	The Upanishads explains the importance for human to learn and understand more about the ultimate unity of all things. Furthermore, the Upanishads speak about Brahman (universal spirit) and Atman (individual) and emphasize the characteristics of both Brahman and Atman.
700 BC	Ancient Greece Civilization Established	
509 BC	Birth of Gautama Buddha	
500 BC	Bhagavad Gita	Lord's Song was created and this is currently the oldest known Yoga scripture. It is devoted entirely to Yoga and has confirmed that it has been an old practice for some time.
100 BC	The Yoga Sutras: The Classical Period of Yoga	Written by Patanjali around the second century, it was an attempt to define and standardize Classical Yoga. It is composed of 195 aphorisms or sutras (from the Sanskrit word which means thread) that expound upon the Raja Yoga and its underlying principle, Patanjali's Eightfold path of Yoga (also called Eight Limbs of Classical Yoga or <i>Ashtanga</i>).
30 AD	Birth of Christianity	The Death of Jesus Christ. 590 AD birth of Catholicism - 1518 AD Birth of Protestantism.
570-610 AD	Origin of Islam: Birth of Mohammed	
1650 AD	Tibetan Buddhism: Rise of Dalai Lama	
1893 AD	Yoga Introduced in the United States	Modern yoga was introduced by young Swami Vivekananda in the Parliament of Religions which was held in Chicago in 1893.
1931 AD	Krishnamacharya	Mysore, India, this is where Krishnamacharya developed and taught what is now known as <i>Ashtanga Vinyasa Yoga</i> . It was during this period that he taught. Pattabhi Jois, B K S Iyengar and T K V Desikacharar Krishnamacharya's son) and sent them out to spread the teachings of yoga.

Yoga, as practiced and taught in India, entered the Western world in the 19th century with the translation of basic yogic texts. Following attendance at the World Parliament of Religions in Chicago in 1893, Swami Vivekananda introduced yoga to the USA. He lectured widely on the practice, founded the Vedanta Society, and authored many books.^[7] Then yoga was promulgated in the West by the numerous teachers who studied in eastern countries (principally India), many of whom immigrated to America in the early 20th century. In the 20th century numerous versions of yoga were developed and taught. Numerous books aided the growth of a yoga practicing community in the USA. In the 1950s,



“an almost faddish burst of interest in hatha yoga” occurred in the USA. During the decade, yoga spread through health and beauty salons.[8] Indian teachers immigrated to the USA during this period, founding centers and publishing books that helped to popularize the movement. In the 1950s and 1960s several important books were published on yogic techniques and then in 1970s yoga rapidly expanded, with the founding of numerous yoga centers and professional associations. Yoga became especially popular among adherents of New Age ideas.[9]

Yoga (*asthanga*) is often depicted metaphorically as a tree and comprises eight aspects, or “limbs” [Patanjali codified the ancient marvel of yoga as *asthanga* which is one of the six schools of Indian philosophy and is known as *Yoga Darshan*[2]: *yama* (universal ethics), *niyama* (individual ethics), *asana* (physical postures), *pranayama* (breath control), *pratyahara* (control of the senses), *dharana* (concentration), *dyana* (meditation), and *samadhi* (bliss).[10] Each limb is connected with the whole, in the same way that bodily limbs are all connected [Table 2]. If someone pulls the body by the leg, the rest of the body will automatically follow. In the same way, when one pulls one of the eight limbs of yoga, the others will naturally come. They are not stages to be achieved in succession.[10]

Astanga yoga

Many people in the USA today claim to practice yoga for its health benefits without consciously adopting Hindu religious perspectives which underlies the practice and usually become apparent in more advanced stages of instruction. Elementary courses of *hatha yoga* focus on physical exercises consisting of various postures and breathing techniques. A growing body of research evidence supports the belief that certain yoga techniques may improve physical and mental health through down-regulation of the hypothalamo pituitary adrenal (HPA) axis and the sympathetic nervous system.

The stress and stress-induced disorders like hypertension and angina are fast growing epidemics and bane of “modern” society. The holistic science of yoga is the best method for prevention as well as management of stress and stress-induced disorders. Numerous studies have shown yoga to have an immediate down-regulating effect on both the HPA axis



responses to stress. Effectiveness of yoga against stress management is well established.[14] It was also found that brief yoga-based relaxation training normalizes the function of the autonomic nervous system by deviating both sympathetic and parasympathetic indices toward more “normal” middle region of the reference values.[15] Studies show that yoga decreases levels of salivary cortisol,[16,17] blood glucose,[18,19] as well as plasma rennin levels, and 24-h urine nor-epinephrine and epinephrine levels.[20] Yoga significantly decreases heart rate and systolic and diastolic blood pressures.[20–22] These studies suggest that yoga has an immediate quieting effect on the HPA axis response to stress. While the precise mechanism of action has not been determined, it has been hypothesized that some yoga exercises cause a shift toward parasympathetic nervous system dominance, possibly via direct vagal stimulation.[23] Shapiro *et al.*[24] noted significant reductions in low-frequency heart rate variability – a sign of sympathetic nervous system activation – in depressed patients following an 8-week yoga intervention. Regardless of the pathophysiologic pathway, yoga has been shown to have immediate psychological effects: decreasing anxiety[16,17,25,26] and increasing feelings of emotional, social, and spiritual well-being.[27] Several literature reviews have been conducted that examined the impact of yoga on specific health conditions including cardiovascular disease[28] metabolic syndrome,[23] diabetes,[29] cancer,[30] and anxiety.[14] Galantino *et al.*[31] published a systematic review of the effects of yoga on children. These reviews have contributed to the large body of research evidence attesting to the positive health benefits of yoga. The purpose of this article is to present a comprehensive review of the literature regarding the impact of yoga on a variety of health outcomes and conditions.

It is well known that many antihypertensive agents have been associated with numerous undesirable side effects. In addition to medication, moderately intense aerobic exercise is well known to lower blood pressure. Interestingly, it has been very convincingly demonstrated in a randomized controlled study that even a short period of regular yogic practice at 1 h/day is as effective as medical therapy in controlling blood pressure in hypertensive subjects.[32] Yoga, together with relaxation, biofeedback, transcendental meditation, and psychotherapy, has been found to have a convincing antihypertensive



effect.[33] The mechanism of yoga-induced blood pressure reduction may be attributed to its beneficial effects on the autonomic neurological function [Figure 1]. Impaired baroreflex sensitivity has been increasingly postulated to be one of the major causative factors of essential hypertension.[20] The practice of yogic postures has been shown to restore baroreflex sensitivity. Yogic asanas that are equivalent to head-up or head-down tilt were discovered to be particularly beneficial in this regard. Tests proved a progressive attenuation of sympho-adrenal and renin-angiotensin activity with yogic practice. Yogic practice, through the restoration of baroreceptor sensitivity, caused a significant reduction in the blood pressure of patients who participated in yoga exercise.[20,34] Yoga has proven efficacy in managing secondary lipid cardiac complications due to chronic hypertension. Left ventricular hypertrophy secondary to chronic hypertension is a harbinger of many chronic cardiac complications, such as myocardial ischemia, congestive cardiac failure, and impairment of diastolic function. Cardiovascular response to head-down-body-up postural exercise (*Sarvangasana*) has been shown to be particularly beneficial in preventing and treating hypertension-associated left ventricular hypertrophy and diastolic dysfunction. In one study, the practice of sarvangasana for 2 weeks caused resting heart rate and left ventricular end diastolic volume to reduce significantly. In addition, there was mild regression of left ventricular mass as recorded in echocardiography.[35]

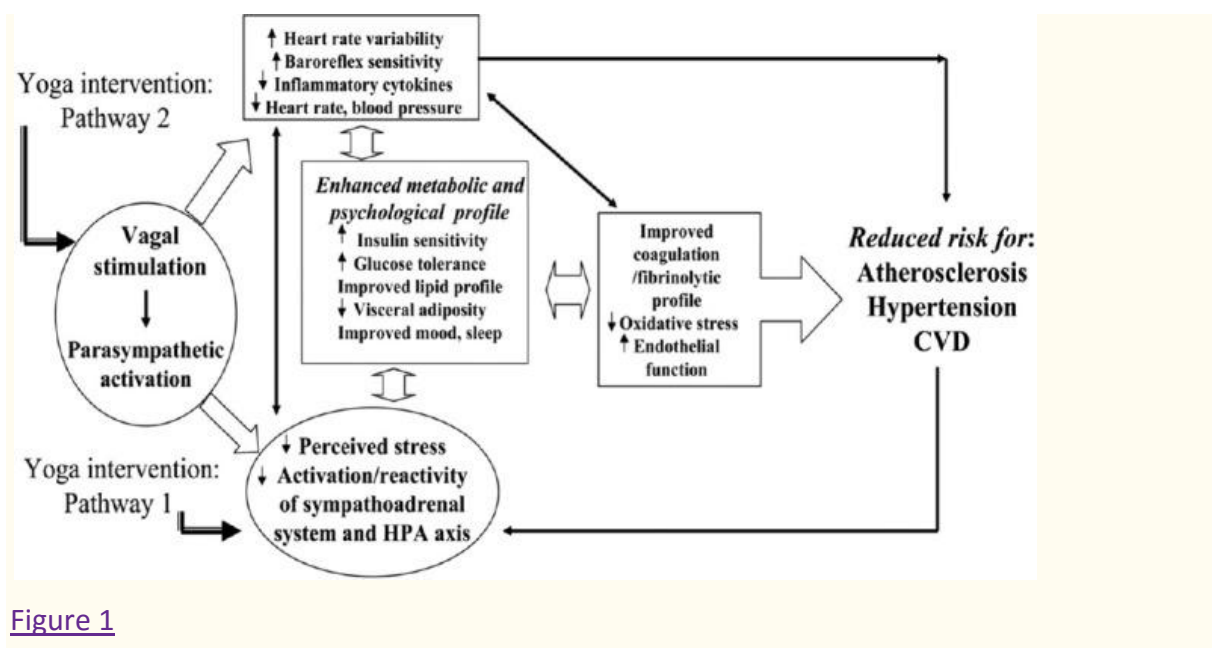


Figure 1



Hypothesized pathways by which yoga intervention may enhance cardiovascular risk profile

In a randomized controlled study, patients with angiographically proven coronary artery disease who practiced yoga exercise for a period of 1 year showed a decrease in the number of anginal episodes per week, improved exercise capacity and decrease in body weight. Serum cholesterol levels (total cholesterol, LDL cholesterol and triglyceride levels) also showed greater reductions as compared with control groups. It is evident in recent studies that yoga can control LDL cholesterol[36] and hypertension.[33] Revascularization procedures were required less frequently in the yoga group. Follow-up angiography at 1 year showed that significantly more lesions regressed in the yoga group compared with the control group. Thus, yoga exercise increases regression and retards progression of atherosclerosis in patients with severe coronary artery disease.[37] However, the mechanism of this effect of yoga on the atherosclerotic plaque remains to be studied. Lipid lowering and plaque-stabilizing effects of yoga exercise seem to be similar to that of statin drugs (HMG CoA reductase inhibitors). It is important to carry out biochemical and immunological studies among practitioners of yoga to see whether it has similar mechanisms of action to statins that have favorable effects on atherosclerosis and vascular properties other than those attributed to cholesterol lowering. Statin activity is associated with the increased production of nitric oxide in the vascular endothelium, which has local vasodilator properties in addition to anti-atherogenic, antiproliferative, and leukocyte adhesion-inhibiting effects. It is also known to enhance endothelium-dependent relaxation, inhibit platelet function, and inhibit the activity of endothelin-1, a potent vasoconstrictor and mitogen. Statins also reduce inflammatory cytokines.[38] There may be some parallels between the pharmaco-physiological effects of statin therapy and the changes brought about by the practice of yoga in the internal milieu. This change in the internal milieu triggered by the practice of yoga may well be mediated by a neurohormonal mechanism.

Obesity and increased body weight are strong risk factors for ischemic heart disease and hypertension. Yoga has been found to be particularly helpful in the management of obesity. A randomized controlled study revealed that practicing yoga for a year helped significant



improvements in the ideal body weight and body density.[39] The regular practice of yoga has shown to improve the serum lipid profile in the patients with known ischemic heart disease as well as in healthy subjects.[36] The mechanism of the beneficial effect of yoga in the management of hyperlipidemia and obesity cannot be explained by simple excess caloric expenditure since the practice of asanas does not bring about increased, rapid large muscle activity and energy generation. However, the efficacy of yoga in the management of hyperlipidemia and obesity is of significance.

Madanmohan *et al.*[40] have reported that yoga training of 6 weeks duration attenuates the sweating response to step test and produces a marked increase in respiratory pressures and endurance in 40 mmHg test in both male and female subjects. In another study, they reported that 12 weeks of yoga practice results in a significant increase in maximum expiratory pressure, maximum inspiratory pressure, breath holding time after expiration, breath holding time after inspiration, and hand grip strength.[41] Joshi *et al.*[42] have also demonstrated that 6 weeks of pranayama breathing course resulted in improved ventilatory functions in the form of lowered respiratory rate, and increases in the forced vital capacity, forced expiratory volume at the end of first second, maximum voluntary ventilation, peak expiratory flow rate, and prolongation of breath holding time. Similar beneficial effects were observed by Makwana *et al.*[43] after 10 weeks of yoga practice. An increase in inspiratory and expiratory pressures suggests that yoga training improves the strength of expiratory and as well as inspiratory muscles. Respiratory muscles are like skeletal muscles. Yogic techniques involve isometric contraction which is known to increase skeletal muscle strength. Breath holding time depends on initial lung volume. Greater lung volume decreases the frequency and amplitude of involuntary contractions of respiratory muscles, thereby lessening the discomfort of breath holding. During yoga practice, one consistently and consciously over-rides the stimuli to respiratory centers, thus acquiring control over the respiration. This, along with improved cardio-respiratory performance, may explain the prolongation of breath holding time in yoga-trained subjects.

Yogic techniques are known to improve one's overall performance and work capacity.[44] Physical fitness not only refers cardiorespiratory fitness and muscular strength, but also



coordination and flexibility i.e. the full range of physical qualities which can be understood as an integrated measurement of all functions and structures involved in the performance.[45–48] In adults, low physical fitness (mainly cardiorespiratory fitness) seems to be a stronger predictor of both cardiovascular and all-cause mortality than any other well-established risk factors.[49] Sharma *et al.*[50] conducted a prospective controlled study to explore the short-term impact of a comprehensive but brief lifestyle intervention based on yoga, on subjective well-being in normal and diseased subjects. Normal healthy individuals and subjects having hypertension, coronary artery disease, diabetes mellitus, or a variety of other illnesses were included in the study. They reported significant improvement in the subjective well-being scores of 77 subjects within a period of 10 days as compared to controls. Therefore, even a brief intervention can make an appreciable contribution to primary prevention as well as management of lifestyle diseases. Oken *et al.*[51] found that hatha yoga practices for 6 months by seniors (65–85 years) resulted in significant improvement in quality of life and physical measures compared to walking exercise and wait-list control groups.

Yoga has been shown to be a simple and economical therapeutic modality that may be considered as a beneficial adjuvant for non insulindependent diabetes mellitus (NIDDM) patients. In a group of diabetics who practiced yoga regularly, there was a significant reduction in the frequency of hyperglycemia and area index total under the oral glucose tolerance test curve. This experimental study showed that there was also a decrease in the need for oral hypoglycemic to maintain adequate blood sugar control in the population that practiced yoga.[52] Chaya *et al.*[53] reported a significant decrease in fasting plasma insulin in the yoga practitioners. They also found that long-term yoga practice is associated with increased insulin sensitivity and attenuation of the negative relationship between body weight or waist circumference and insulin sensitivity. Manjunatha *et al.*[54] studied the effect of four sets of asanas in random order for 5 consecutive days and observed that the performance of asanas led to increased sensitivity of B cells of the pancreas to the glucose signal. They proposed that this increased sensitivity is likely to be a sustained change resulting from a progressive long-term effect of asanas. The mechanism of the anti-glycemic



activity of yoga exercise has yet to be described. A mechanism of neurohormonal modulation involving insulin and glucagon activity remains a possibility.

Increased intrinsic neurohormonal activity has been associated with increased predisposition to ischemic heart disease. This may explain how general stress in life contributes to increased risk of myocardial disease. Level of adverse neurohormonal activity can be quantitated by the measurement of specific markers in serum and urine. It has been described that regular practitioners of yoga asanas showed a significant reduction in the markers of intrinsic neurohormonal activity such as urinary excretion of catecholamines, aldosterone, as well as serum testosterone and luteinizing hormone levels. In an experimental study, they also showed an increase in the urinary excretion of cortisol.[20] Yoga-based guided relaxation helped in the reduction of sympathetic activity with a reduction in heart rate, skin conductance, oxygen consumption, and increase in breath volume - the clinical signs of neurohormonal activity, thus facilitating protection against ischemic heart disease and myocardial infarction.[55]

Studies have shown that practice of yoga orchestrates fine tuning and modulates neuro-endocrine axis which results in beneficial changes in the practitioners. Schmidt *et al.*[34] found a reduction in urinary excretion of adrenaline, noradrenaline, dopamine, and aldosterone, a decrease in serum testosterone and luteinizing hormone levels and an increase in cortisol excretion, indicating optimal changes in hormones. Kamei *et al.*[56] found changes in brain waves and blood levels of serum cortisol during yoga exercise in 7 yoga instructors and found that alpha waves increased and serum cortisol significantly decreased.

Narendran *et al.*[57] found that yoga practices including physical postures, breathing, and meditation practiced by pregnant women 1 h daily resulted in an increase in birth weight, decrease in preterm labor, and decrease in IUGR either in isolation or associated with PIH, with no increased complications. Beddoe *et al.*[58] found that women practicing yoga in their second trimester reported significant reductions in physical pain from baseline to post intervention. Women in their third trimester showed greater reductions in perceived stress



and trait anxiety. From this, it is clear that yoga can be used to prevent or reduce obstetric complications.

Since the 1970s, meditation and other stress-reduction techniques have been studied as possible treatments for depression and anxiety. One such practice, yoga, has received less attention in the medical literature though it has become increasingly popular in recent decades. Available reviews of a wide range of yoga practices suggest they can reduce the impact of exaggerated stress responses and may be helpful for both anxiety and depression. It mainly acts via down-regulating the HPA axis that trigger as a response to a physical or psychological demand (stressor) [Figure 2], leading to a cascade of physiological, behavioral, and psychological effects, primarily as a result of the release of cortisol and catecholamines (epinephrine and norepinephrine).[59] This response leads to the mobilization of energy needed to combat the stressor through the classic “fight or flight” syndrome. Over time, the constant state of hypervigilance resulting from repeated firing of the HPA axis can lead to deregulation of the system and ultimately diseases such as obesity, diabetes, autoimmune disorders, depression, substance abuse, and cardiovascular disease.[60,61]

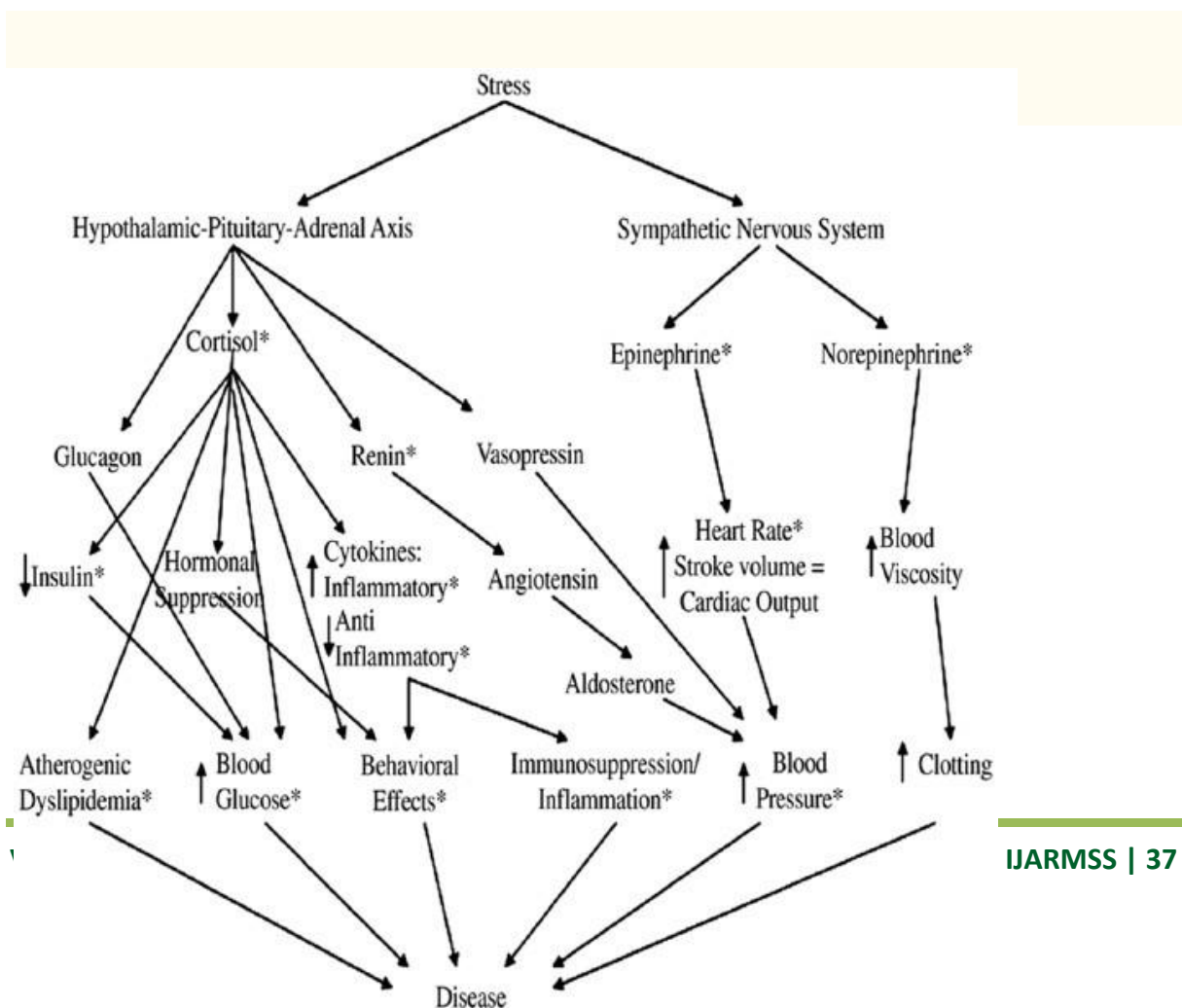




Figure 2

The impact of stress on the hypothalamic–pituitary–adrenal (HPA) axis and the sympathetic nervous system. *Yoga has been shown to have significant beneficial effects in these items

In this respect, yoga functions like other self-soothing techniques, such as meditation, relaxation, and exercise. By reducing perceived stress and anxiety, yoga appears to modulate stress response systems. This, in turn decreases physiological arousal e.g., reducing the heart rate, lowering blood pressure, and easing respiration. There is also evidence that yoga practices help increase heart rate variability, an indicator of the body's ability to respond to stress more flexibly. A small but intriguing study further characterizes the effect of yoga on the stress response. In 2008, researchers at the University of Utah showed that among control subjects and yoga practitioners, by functional MRIs, that yoga practitioner had the highest pain tolerance and lowest pain-related brain activity during the MRI. The study underscores the value of techniques, such as yoga, that can help a person regulate their stress and, therefore, pain responses.[62] Tooley *et al.*[63] found significantly higher plasma melatonin levels in experienced meditators in the period immediately following meditation compared with the same period at the same time on a control night. It was concluded that meditation can affect plasma melatonin levels. It remains to be determined whether this is achieved through decreased hepatic metabolism of the hormone or via a direct effect on pineal physiology. Either way, facilitation of higher physiological melatonin levels at appropriate times of day might be one avenue through which the claimed health promoting effects of meditation occur. In another study, Harinath *et al.*[64] evaluated the effects of 3 month hatha yoga practice and Omkar meditation on melatonin secretion in healthy subjects. Yoga group subjects practiced selected yogic asanas for 45 min and pranayama for 15 min during the morning, whereas during the evening hours these subjects performed preparatory yogic postures for 15 min, pranayama for 15 min, and meditation for 30 min daily for 3 months. Results showed that yoga practice for 3 months resulted in an improvement in cardiorespiratory performance



and psychological profile. The plasma melatonin also showed an increase after 3 months of yogic practice. Also, the maximum night time melatonin levels in the yoga group showed a significant correlation with well-being score. These observations suggest that yogic practices can be used as psychophysiologic stimuli to increase endogenous secretion of melatonin, which, in turn, might be responsible for improved sense of well-being. In some other studies, it has been found that subjects trained in yoga can achieve a state of deep psychosomatic relaxation associated with highly significant decrease in oxygen consumption within 5 min of practicing *savitri pranayama* (a slow, rhythmic and deep breathing) and *shavasana*.[\[65\]](#)

In a German study published in 2005, women who described themselves as “*emotionally distressed*” are treated with 90-min yoga classes a week for 3 months. At the end of 3 months, women in the yoga group reported improvements in perceived stress, depression, anxiety, energy, fatigue, and well-being. Depression scores improved by 50%, anxiety scores 30%, and overall well-being scores by 65%. Initial complaints of headaches, back pain, and poor sleep quality also resolved much more often in the yoga group than in the control group. Another 2005 study examined the effects of a single yoga class for inpatients at the New Hampshire psychiatric hospital, 113 participants among patients with bipolar disorder, major depression, and schizophrenia it is found after yoga class, tension, anxiety, depression, anger, hostility, and fatigue dropped significantly. Further controlled trials of yoga practice have demonstrated improvements in mood and quality of life for elderly, people caring for patients with dementia, breast cancer survivors, and patients with epilepsy.[\[66\]](#)

Cancer

Earlier reviews have reported that yoga is beneficial for people with cancer in managing symptoms such as fatigue, insomnia, mood disturbances and stress, and improving quality of life.[\[67\]](#) However, until now the size of the effect has not been quantified. But in some studies, it is found that yoga may have positive effects on psychological health of cancer patients [\[Figure 3\]](#). Many cancer patients experience cancer-related psychological



symptoms, including mood disturbances, stress, and distress.[67] Ledesma and Kumano[68] showed mindfulness-based stress reduction programs may indeed be helpful for the mental health of cancer patients. Thus, yoga may have long-term psychological effects for patients with cancer. According to the some review,[30] no significant differences were observed on the measure of physical health. Because of the limited number of studies and different measurement tools, the effects of yoga on physical health in people with cancer remain unclear. Only one study[69] examined the effects of yoga on physical fitness; therefore, future study could include outcome measures that not only include subjective feelings in questionnaires but also include physical performance, physical strength, endurance, and flexibility. All studies included in the meta-analysis investigated participants with a diagnosis of cancer; however, the types of cancer varied among studies. Of the 10 included studies, 7 investigated breast cancer, 2 recruited mixed cancer populations, and 1 included patients with lymphoma. The result of Cohen's study on lymphoma[70] showed no significant differences between groups in terms of anxiety, depression, distress, or fatigue; thus, it has little influence on our result. Therefore, since the majority of studies focused on breast cancer, future research needs to examine the use of yoga among male cancer patients and female non-breast cancer patients. In addition, various factors are associated with the execution of the intervention such as yoga styles and treatment doses that may influence effect size. Four different styles of yoga were used among the included studies: restorative, integrated, hatha, and Tibetan. Treatment dose, including duration and frequency, and the adherence to yoga intervention and home practice may also affect treatment outcome. According to the Carson's study of yoga for women with metastatic breast cancer,[71] patients who practiced yoga longer on a given day were much more likely to experience less pain and fatigue and greater invigoration, acceptance, and relaxation on the next day. In summary, most of the studies show potential benefits of yoga for people with cancer in improvements in psychological health. But, more attention must be paid to the physical effects of yoga and the methodological quality of future research, as well as to improve these areas in the future.

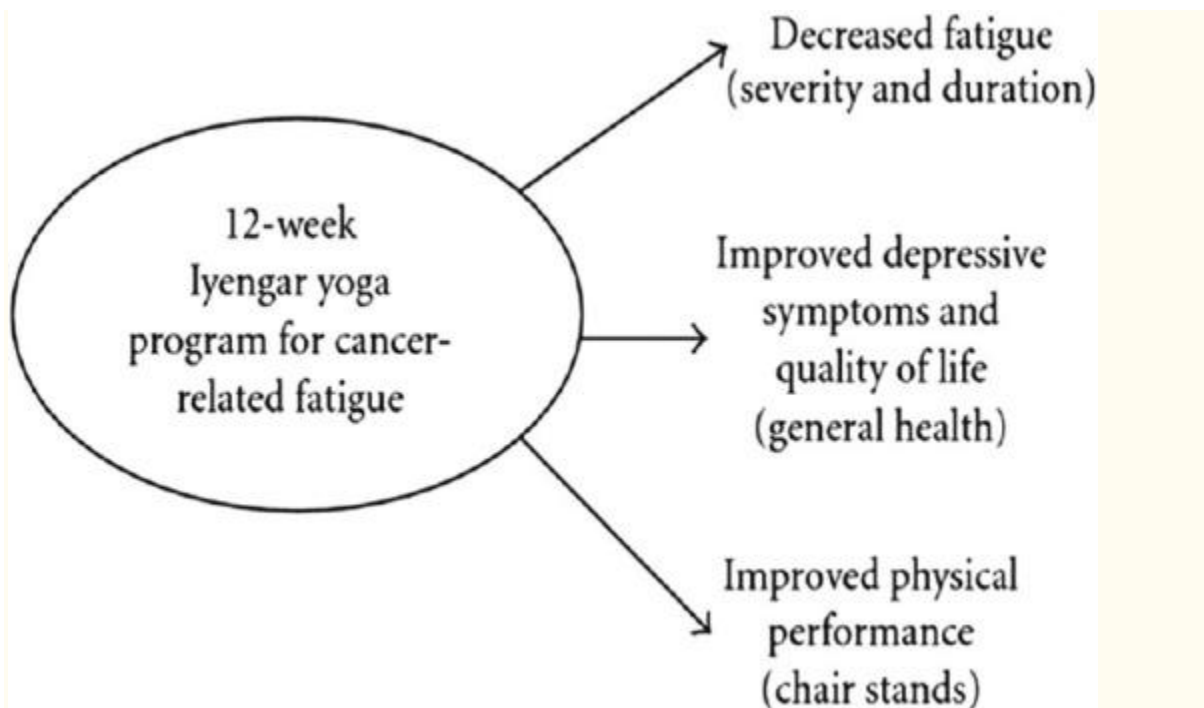


Figure 3

Demonstrates positive outcomes of Yoga program for cancer-related fatigue in breast cancer survivors

Although many forms of yoga practice are safe, some are strenuous and may not be appropriate for everyone. In particular, elderly patients or those with mobility problems may want to check first with a clinician before choosing yoga as a treatment option. Only one incident has been reported in the surveyed medical literature associated with the risks due to the practice of yoga. The serious case that has been reported is of a female practitioner developing thrombosis of vertebrbasilar artery due to an intimal tear and subsequent stroke. This was attributed to adopting an unusual neck posture during yoga practice.[72] Yoga, although not entirely risk-free, can be considered a safe form of exercise if practiced under the guidance and supervision of a qualified trainer. But for many patients dealing with depression, anxiety, or stress, yoga may be a very appealing way to better manage symptoms. Indeed, the scientific study of yoga demonstrates that mental and physical heal are not just closely allied, but is essentially equivalent. The evidence is growing that yoga practice is a relatively low-risk, high-yield approach to improving overall health.



In summary, this review postulates that mind-body exercise such as yoga couples sustained muscular activity with internally directed focus, producing a temporary self-contemplative mental state. It also triggers neurohormonal mechanisms that bring about health benefits, evidenced by the suppression of sympathetic activity. Thus, it reduces stress and anxiety, improves autonomic and higher neural center functioning and even, as shown in some studies, improves physical health of cancer patients. However, there is a definite need for more directed scientific work to be carried out to elucidate the effects and the mechanisms of such effects of yoga on the human body in health and disease. Considering the scientific evidence discussed thus far, it is fair to conclude that yoga can be beneficial in the prevention and cure of diseases

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