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## REVIEW ARTICLE

# UNDERSTANDING REGULARITY ON FOLLOWING YOGA THERAPY IN HUMAN HEALTH: A NEGLECTED DOMAIN OF LIFE

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### ABSTRACT

There are many ways to relieve stress, such as 1) Taking regular exercise by going for a walk, 2) Considering supplements like taking herbal and natural supplements ( lemon balm, turmeric, ashwagandha, omega-3-fatty acids) 3) Connecting with nature (spending outside i.e. away from home) 4) Aromatherapy (taking nice smell or calming scents from rose), 5) Journaling (writing positive finding in your life), 6) Listen to soothing music, 7) Singing, 8) Laughter, 9) Connect with friends, 10) Just say "No" , 11) Avoid procrastination, 12) Petting a dog or cat, 13) Mindfulness & Meditation, 14) Practice abdominal breathing, 15) Yoga practices, 16) Serving others or helping others, 17) Joining with morning or evening prayer 18)Eating satvic diet 19) Avoiding on telling lie and 20) Reducing caffeine intake. Above twenty steps are included in Yoga therapy. Yoga therapy is a type of therapy that concentrates on yoga exercises, practices, and philosophies, to improve mental and physical health. While the practice of yoga is commonly associated with stress-relief, yoga therapy can be helpful in the treatment of several other mental health conditions as well. Let us look on beneficial aspect of yoga therapy. Parasympathetic of autonomic is stimulated, resulting hardening characteristics of the arteries are reduced, heart rate comes down, blood pressure is reduced, respiratory rate is reduced and adequate perfusion of body tissues are noted. Beneficial effects of yoga therapy are many but there are very few who can understand. There are very few who can follow yoga therapy regularly. Reason is very clear; people do not have time to spend for this only (lack of time) Second most common reason people stop their practice is because they are just not seeing the results. Third one is absence of motivation. Motivation is rarely the cause of accomplishment and is so often the cause of inaction. When you are motivated, everything is easy. Developing a consistent practice takes discipline; it takes faith, takes self-control and deep concentration. Above all it takes DETERMINATION. Sometimes availability of finances can be another important reason behind keeping away from following yoga therapy. Staying with a consistent practice is not an easy task, but it is one of the best things we could possibly do for our overall health and wellbeing. The purity of thought is possible only with a faith in God bordering on definite experience.

## INTRODUCTION

Yoga therapy is a self-empowering process, where the care-seeker, with the help of the Yoga therapist, implements a personalized and evolving Yoga practice, that not only addresses the illness in a multi-dimensional manner, but also aims to alleviate his/her suffering in a progressive, non-invasive and complementary manner. Depending upon the nature of the illness, Yoga therapy can not only be preventative or curative, but also serve a means to manage the illness, or facilitate healing in the person at all levels." Yoga therapy is the application of yoga practices to alleviate physical and mental health conditions with the view of promoting self-care and encouraging overall well-being (1).

Whilst the practice of yoga in general aims to cultivate the body and mind and hence has the potential for therapeutic effects, in yoga therapy we are using specific yoga practices and their known benefits to help alleviate or improvement mental and physical ailments. The modern term, 'Yoga therapy' was coined by Swami Kuvalyananda in the 1920s who believed the changes it would be possible to measure the physical and physiological changes that occurred through yoga practice. His passion brought foreigner researchers to India to study yoga's effect, a magazine, an entire yoga institution and a new field. Swami Kuvalyananda made it possible to start applying the specific effects of yoga to medical conditions.

These days yoga therapy has become so popular, that many doctors are now supporting it. Various medical journals reveal research as to yoga’s multi-tiered benefits. Likewise those in the field of mental health often recommend yoga to clients or may even integrate aspects into their work. At The Mindful Institute we train many mental health professionals to bring yoga therapy into clinical practice.

The Upanishad reveals that our being has five distinct sheaths: annamaya, pranamaya, manomaya, vighnamaya and anandmaya. The outermost sheath is our gross body called annamaya-kosha, ‘anna-maya’ means ‘made of anna’, the food. To keep this sheath harmonised, we need to eat right food in right quantity at proper times. The next sheath, the pranamaya-kosha is subtler than the earlier one and made of prana, the breath which accounts for all physiological functions-metabolism, respiration, and excretion. We need to regularly walk, exercise and do pranayama to keep this kosha harmonized. Subtler than this is monomaya-kosha, the body made up of moods, feelings, and phobias. To harmonise this kosha, we wought to cultivate a heart which is humble and prayerful. The process in yogic language is called bhav-shuddhi. The fourth one, called vighnamaya-kosha, is made up of our values, cognition, memory, and faculty of analysis. Critical thinking happens here, we can harmonise this kosha through vichar-shuddhi, by questioning the vercity of our beliefs and values. The innermost, anandamaya-kosha, bliss body is the most sublime too. It is the purest part of our being. When our thinking, vighnamaya-kosha, and emotions, monomaya-kosha, do not eclipse our anandmaya-kosha, we experience uninhibited bliss. Anand is never created. It is our very nature. Pervading these five sheaths and yet remaining beyond, Lies the self, the consciousness, the field of oneness. We have to rediscover this space within us. The secret of abiding anand lies in harmonizing the panch-koshas, leading one to one’s own innate nature, the blissful field of oneness. All five kosha are put together in Yoga therapy. Understanding and following are very much needed to get scientific results. Yoga has a reputation for being one of the best ways to take care of your body, mind, and spirit. Or in other words, yoga incorporates holistic wellness. Its practice originated in India over 5,000 years ago, and its ancient techniques have reaped all kinds of wellness benefits for people in modern day society.

## DISCUSSION

The vagus nerve is an important major component of autonomic nervous system (ANS), has an important role in the regulation of metabolic homeostasis and also has a key role in the neuro-endocrine-immune axis to regulated homeostasis through afferent and efferent pathways. Mindful meditation/ Prayer can modify central autonomic network, resulting increase concentration of oxytocin which inhibits HPA axis and stimulate vagal nuclei, more acetylcholine, secreted from the nerve ending. Anxiolytic & anti-depressive behavior have been noted (Figure-1).

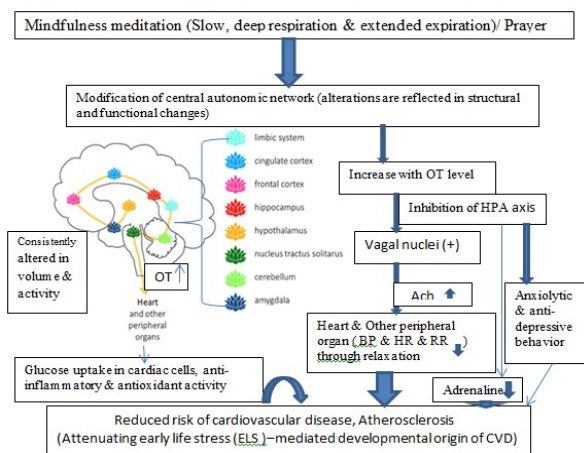


Figure 1. Role of vagus in anti-depression, cardiovascular responses and metabolic homeostasis

Another very important finding when vagus is stimulated is consistent increase with the volume and activity of some of the important centers in central nervous system (Figure-1). Animal and human studies have shown that vagus nerve stimulation (VNS) influences the activity of norepinephrine, serotonin and other neurotransmitters implicated in mood disorders. Like other antidepressant therapies, VNS increases the expression of the neurotrophin brain derived neurotrophic factor and activates its receptor and also stimulates hippocampal neurogenesis. Oxytocin level is increased in limbic system, cingulate gyrus, frontal cortex, hypothalamus, nucleus tractus solitarius (NTS), cerebellum and amygdala (Figure-1). Effects are there and scientifically proved but we common people, even doctors with large numbers are unable to understand the effect of yoga therapy. Hydrogen sulphide (H<sub>2</sub>S) & Oxytocin are increased or more secreted in a person who follows regular physical exercise, meditation, Yoga asanas, participating in prayer daily, taking satvic food, resulting involvement/stimulation of vagus (Parasympathetic) of ANS. Blood pressure becomes normal, tissue perfusion in the body is improved which can reduce atherosclerotic plaque formation and inflammation (Figure-2). Effect of following Yoga therapy on reducing hardening characteristic of the arteries:

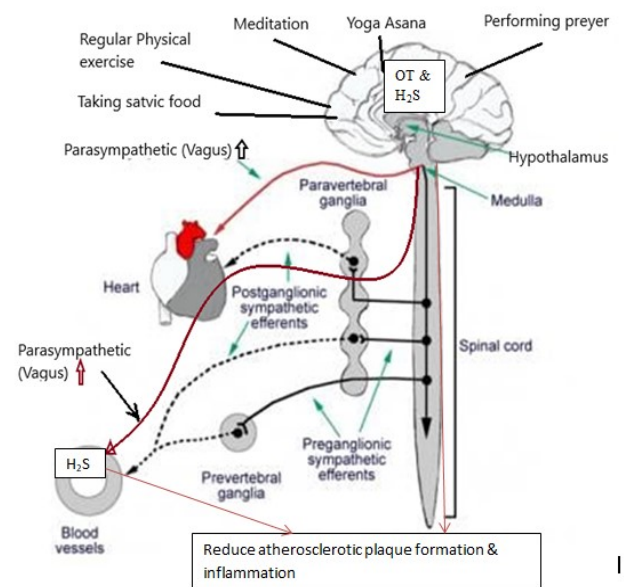
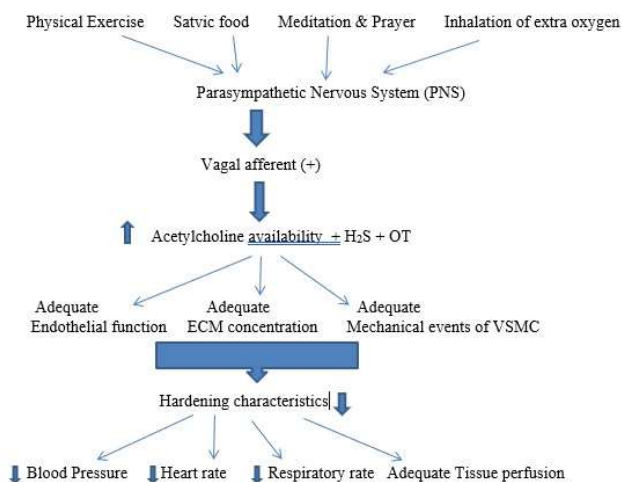


Figure 2. Showing the advantages of performing regular exercise, participating in prayer etc. (component of panchakosha)

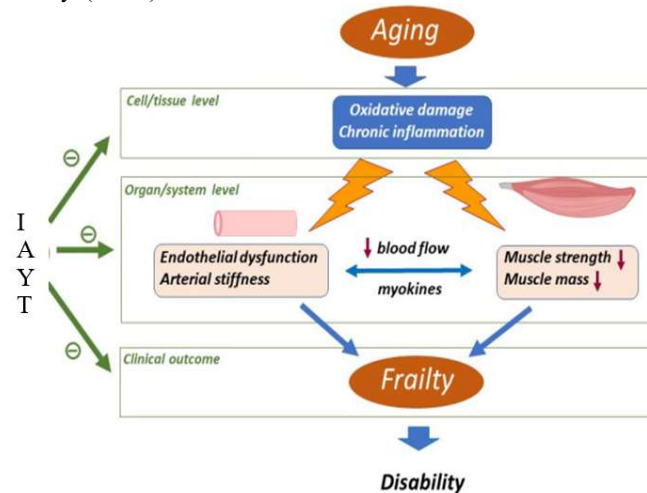
Components involved in developing hardening characteristics are the involvement of extracellular matrix (ECM) with increase in vascular collagen and decrease in vascular elastin, collagen & elastin disarray and increased vascular smooth muscle stiffness and numbers. Adequate concentration of ECM, mechanical events of vascular smooth muscle contraction and endothelial function are noted with involvement of vagus nerve stimulation (VNS), explained with the help of flow chart (Figure-3). As per this chart, hardening characteristics are reduced with adequate physical and chemical component of blood vessel which possible if vagus is stimulated (Figure-3). Impairment in skeletal muscle and the cardiovascular system, two interrelated systems, results in compromised functional status in aging. Increased oxidative stress and inflammation in older subjects constitute the background for skeletal muscle and cardiovascular system alterations (Figure-4). Aged skeletal muscle mass and strength impairment is related to anabolic resistance, mitochondrial dysfunction, increased oxidative stress and inflammation as well as a reduced antioxidant response and myokine profile. Arterial stiffness and endothelial function stand out as the main cardiovascular alterations related to aging, where increased systemic and vascular oxidative stress and inflammation play a key role. IAYT arise as modifiable determinants of functional outcomes in older persons. Exercise enhances antioxidant response, decreases age-related oxidative stress and pro-inflammatory signals, and promotes

the activation of anabolic and mitochondrial biogenesis pathways in skeletal muscle.



**Figure 3. Effect of daily physical exercise, taking satvic food, performing meditation, participating in prayer and pranayama on cardiorespiratory parameters**

Additionally, exercise improves endothelial function and arterial stiffness by reducing inflammatory and oxidative damage signaling in vascular tissue together with an increase in antioxidant enzymes and nitric oxide availability, globally promoting functional performance and healthy aging. This review focuses on the role of oxidative stress and inflammation in aged musculoskeletal and vascular systems and how physical activity/exercise influences functional status in the elderly (13-21).



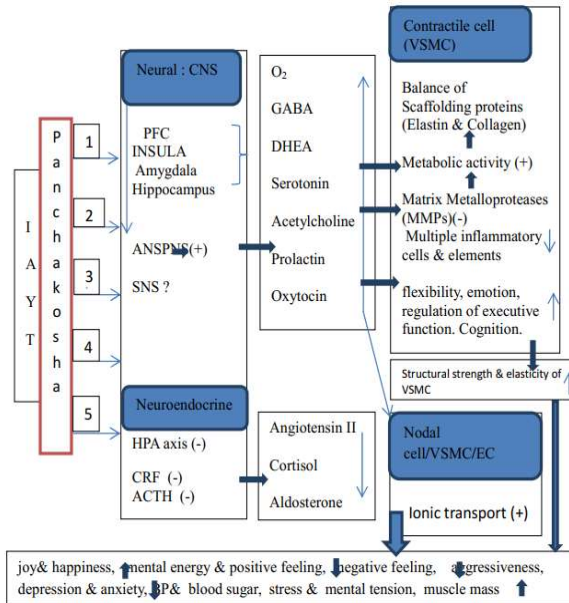
**Figure 4. Effect of IAYT in cellular level**

**How to reduce vascular stiffening?:** Regular exercise: Reduction on secretion of vasoconstrictors, endothelial mechanical-signaling associated with increased pulsatile flow and stretch and consequent enhanced nitric oxide stimulation. Reducing body weight: Significant reduction on stiffness can be noted, mechanism is still not clear. Many weight reduction diets can be preferred. Supplementation of n-3 polyunsaturated fatty acids (eicosapentaenoic acid and docosahexaenoic acid) increases systemic arterial compliance in dyslipidemic subjects, presumably by lowering of triglycerides and very LDL. Lowering Salt intake: High salt intake accelerates age-related changes in vasculature, by abnormal endothelial function, increased smooth muscle tone, intimal-medial thickening, and increased collagen, fibronectin, hyaluronic acid, and collagen cross-link formation. Vascular RAAS is also activated with a local increase in AT2 synthesis, whereas nitric oxide production decreases. Smooth muscle tone also increases because of endogenous Na pump ligands such as marinobufagenin or ouabain-like substances that increase with high-salt intake.

High dietary intake of isoflavones, nonsteroidal plant-derived compounds abundant in soy beans, is associated with a lower PWV.

- Avoid saying lie: Wrong statement will always stimulate sympathetic.
- Sound sleep: Person must be enjoying with complete sleep and should be 6 hours or more than 6 hours.
- Moderate alcohol or no alcohol consumption

**Reasons of neglecting**



**Figure 5. Effect of IAYT in brief**

**Few points to be noted behind this and these are**

- We hate yoga: There’s not something wrong with us if we hate yoga. Everyone has different preferences. With that being said, don’t knock it until you try it. Yoga can cause so many positive changes in a person’s life, so it’s important to give it a real try if you think you’re interested.
- We are in a hurry: people tend to stop their 90-minute practice is due to a perceived lack of time. It is not about how much time you really have in your day; it is about where you choose to spend it.
- Is expensive: Looking for a yoga teacher is very expensive. There are very few eligible yoga teacher available.
- Do not try to understand: Very difficult to understand actual scientific role of yoga or yoga therapy.
- I am just too tired after work or before work or at lunch: People always have a tendency to avoid due to lack of time, energy and money.
- Too old and too overweight: misconception is common. People think that Yoga is only for younger people.
- I am not good at yoga: Due to lack of confidence, Yoga is not being accepted primarily.
- Yoga is for white young women: Our idea is not clear. We are uneducated, not experienced.
- I eat meat and watch Bravo. I am not the Yogi type: Non-vegetarian people generally say that Yoga is for yogic people, not for them who are fond of taking meat.

**CONCLUSION**

And since yoga is gentle, almost anyone can do it, regardless of your age or fitness level. Yoga is a 5,000-year-old discipline from India. It was developed as a practice to unite the mind and body Effect of panchakosha include 1) increased level of oxygen, GABA, DHES, Serotonin, Acetylcholine, Prolactin, and oxytocin 2) decreased level of angiotensin II, cortisol, aldosterone 3) improves ionic transport in the cell 4) facilitate autophagy & mitophagy 5) reduce hardening characteristic of the arteries. The practice of yoga (IAYT) is not easy

or as quick as taking medication, but mounting evidence suggest it is worth the effort and investment. This is based on *Panchakosha* concept, helps one to reconnect with oneself. This can ultimately help to relieve one from the pressures and stressors which we receive almost daily. Neuroendocrine involvement is brought here and interactions between regulatory bodies and vascular functions have been elaborated. Only physical exercise or yoga did not show much beneficial. It is also should be noted that the field of yoga research encompasses the inherent dilemma of the wide variety of yogic practices used as interventional therapies. It has also been shown to have Psychological benefits, as the practice can help to increase mental energy, positive feeling and decrease negative feeling of aggressiveness, depression and anxiety. Keeping these in minds it is very much essential to understand the regulatory involvement and their basic interactions with vascular physiology in IAYT.

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