


Review Article

Can Yoga help in Preventive & Therapeutic Practice?

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Introduction

An old practice rooted in Indian philosophy, yoga integrates physical posture (asana), breathing techniques (pranayama), meditation (dhyana), and ethical fields to promote a general well. For thousands of years, yoga has been rooted in part in Indian philosophy and traditional Indian spiritual practices [1]. The role of yoga has recently expanded. Yoga is currently a popular method for physical and mental health, and is adapted to internationally complementary and integrative medicine [2]. In the latter environment, yoga most often includes physical posture, breath control, deep relaxation, and meditation/mindfulness techniques. In Western society, yoga is increasingly popular as a preventive and therapeutic practice, and is one of the treatments with the fastest increase in prevalence [3] as seen in study [4]. Over the years, yoga has gained global recognition for improving flexibility and relaxation, but also as a powerful preventive and therapeutic device for a variety of health conditions. Therefore, health service providers are increasingly presented to patients who use yoga to treat health conditions and those of interest [4]. Yoga-based initiatives are nowadays getting popular to promote wellness in communities, businesses, and schools and now Primary health care integration via AYUSH programs (India) is undergoing [5-7]. Let's look at important Preventive & Therapeutic functions of Yoga as seen from studies [5-7], Numerous positive advantages are also linked to yoga.

Yoga's role in Prevention

1. Yoga helps prevent illness by having an effect on:

a. **Cardiovascular function:** is enhanced by physical health.

b) increases the flexibility and strength of the **musculoskeletal system**

c) controls **metabolic and endocrine** functions.

d) bolsters the **immunological system**.

e) **Stress and anxiety** are decreased by mental health-as it encourages emotional equilibrium and enhances focus and the quality of sleep

f). **Changes in Lifestyle:** It promotes healthy life and awareness; aids in weight control helps people quit using drugs, alcohol, and tobacco.

Yoga's role in Therapeutics

Yoga is being utilized more and more as a supplemental therapy to help people recover from chronic illnesses. Its advantages are supported by clinical evidence in:










- a) **Cardiovascular Conditions:** It can reduce blood pressure enhance the lipid profile increase the variability of heart rate
- b). **Insulin sensitivity** is enhanced by diabetes mellitus. So, it aids in glycaemic management lessens oxidative stress
- c). **Circulatory Conditions:** enhances lung function in people with COPD and asthma. makes the breathing muscles stronger. lessens anxiety and dyspnoea
- d. **Disorders of Mental Health:**
Good at treating generalized anxiety, PTSD, and depression improves emotional control and self-awareness
- e. **Conditions Affecting the Muscles-** It is beneficial for fibromyalgia, arthritis, and back pain increases pain tolerance and joint mobility
- f. **Cancer rehabilitation:** It lessens emotional distress, discomfort, and exhaustion. enhances life quality both during and after treatment.

Integration of the mind and body:

Encourages balance between mental and physical well-being
Reduces inflammation by lowering inflammatory indicators such as IL-6 and CRP.

The Yoga's Healing Mechanisms [5-9]

In essence, NCDs which include rheumatological disorders, heart disease, and stroke are inflammatory conditions that prolong inflammation in various sites, such as vascular or joint spaces. The exact process by which yoga brings about these positive changes has not yet been established. Neural, endocrine, immunological, cellular, genetic, and epigenetic systems are implicated, nevertheless, according to a plethora of clues.[8] A plethora of pointers indicates that neural, endocrine, immunological, cellular, genetic, and epigenetic mechanisms are at play [9] as shown also in Box-1

| Box -1 Depicting Possible Mechanism of Actions of Yoga on Body | |
|---|--|
|  | Yoga-cortisol and serotonin levels are balanced by neuroendocrine regulation and |
|  | Yoga-Enhances parasympathetic activity and digest mode through autonomic control. |
|  | By blocking the NFκB pathway, regulating epigenetic modifications, and maintaining telomerase length, it lowers inflammation, which in turn lowers GCS levels and raises glucocorticoid receptor sensitivity. |
|  | By stimulating the mTOR pathway and increasing BDNF gene expressions, yoga enhances neuroplasticity and increases cortical thickness in areas of the brain linked to mood, consciousness, and cognition. |
|  | Additionally, yoga increases PNS activity and decreases SNS activity, both of which are important for reducing stress and preserving a healthy cardiovascular profile. |
|  | If done correctly, this could slow the development and progression of several cardiovascular diseases. |
|  | Yoga has also been shown to minimize endothelial dysfunction and reduce oxidative stress, which helps to avoid coronary artery disease and early atherosclerosis. |
|  | Numerous studies have documented how yoga can reduce the burden of arrhythmias in atrial fibrillation by reversing atrial remodeling and triggering PNS activation. |
|  | We will get closer to understanding the as yet undiscovered brain-heart axis mechanism that causes abnormal cardiovascular pathology with the help of more recent research on yoga practitioners that --- investigate proteomic and genomic sequencing in addition to sophisticated neurological imaging. |

Research studies from Literature documenting role of Yoga in Therapeutics [10-18]:

Yoga practices in the Indian subcontinent were already in 3000 BC. chr. Documentation. The word yoga comes from the Sanskrit root, like York's word. It means using discipline and ways of life. There are several types of yoga; two are Hatha and Raja yoga, the most commonly practiced in the West. [10] Study [11] has also revealed that Yoga treatment is a generally novel and developing clinical teach inside the wide category of mind-body pharmaceutical,

whose development is reliable with the burgeoning notoriety of yoga in the West and the expanding around the world utilize of elective pharmaceutical.

- In today's busy environment, yoga is a valuable tool for fostering mental health and general well-being as our scientific understanding grows (**Figure 01**). Many studies in which systematic reviews and neuroimaging research were done, have demonstrated the therapeutic benefits of yoga for mental health and in mental crisis situation: [12-13].
- Yoga has been demonstrated to lower blood pressure, blood glucose, and lipid profiles and it also helps in diabetes, hypertension, and obesity control [14].

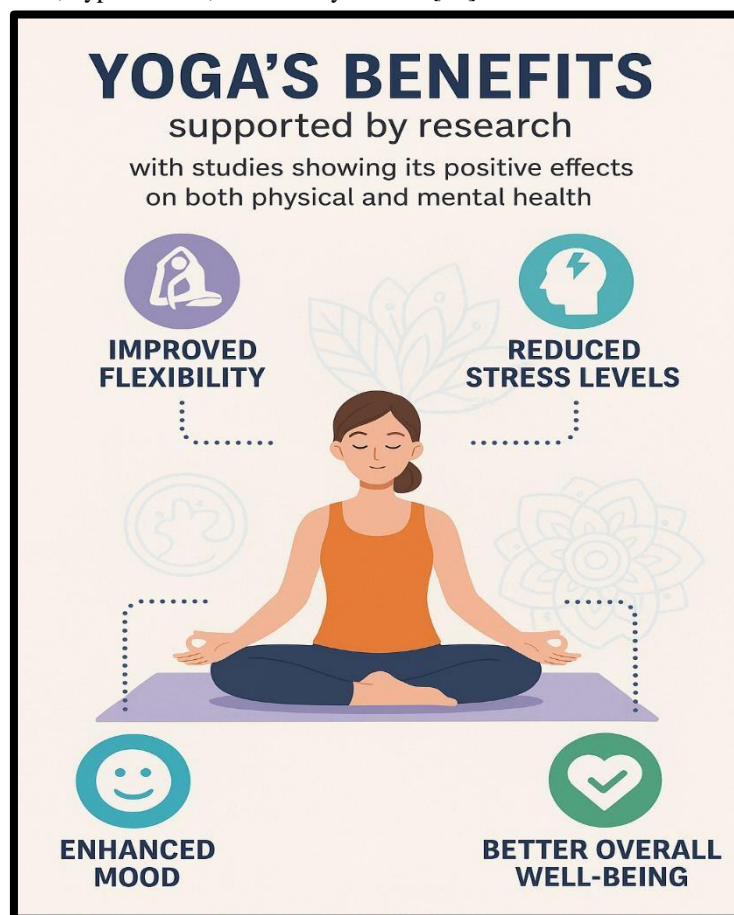


Figure 1 Multiple Benefits of Yoga as seen from many research studies.

Many studies [15-19] reveal Therapeutic Benefits of Yoga as seen from literature. Study [15] has also seen that by yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression, and chronic pain, improve sleep patterns, and enhance overall well-being and quality of life.

Study [16] has also revealed that the positive experiences were decrease in pain and flexibility, increase in sleep quality, development of positive personality traits, increase in self-esteem, and coping with anxiety and stress more effectively. Yoga also regulates the autonomic nervous system. - Increases GABA levels, reducing anxiety and depression. Effective for PTSD and mood disorders as seen from study [17]. One study [18] also indicated that YOGA offers promising early evidence that behavioral interventions like yoga may hold promise to mitigate age-related and neurodegenerative declines as many of the regions identified are known to demonstrate significant age-related atrophy and there is positive effect of yoga practice on the structure and/or function of the hippocampus, amygdala, prefrontal cortex, cingulate cortex and brain networks including the default mode network (DMN).

Challenges in use of Yoga for Prevention & Therapy:

One study [19] in Nepal which found that females, older people, people with access to health education and internet, associated with social organization, and receiving yoga-related training are more likely to practice yoga. The increased use of yoga nowadays also raises problems regarding the effectiveness and

security of yoga as a health therapy. Furthermore, the potential psychological and physiological mechanisms of action of yoga remain largely unknown, whether they are used as preventive and therapeutic modalities. Both efficacy and mechanisms need to be considered in detail to inform clinical decision-making and improve the quality of the study in relation to one of the most frequently used complementary patients.

Conclusion:

Yoga is a holistic, scientifically backed practice that can be used for both therapeutic and preventative reasons. Better population health outcomes, lower healthcare costs, and increased wellbeing for people of all ages can result from its incorporation into mainstream medicine and public health. More importantly, from the standpoints of both public health and individual health, yoga meets the current requirement as a lowcost, easily accessible, and successful therapeutic alternative during the pandemic and period of social isolation.

Conflicts of Interest – Nil

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