

A Brief Overview of Yoga for Respiratory Disorders

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Abstract

Yoga is increasingly being used for its benefits in promoting positive health as well as in preventing and treating certain disorders. There are certain respiratory disorders which have responded well to yoga. The most widely studied has been bronchial asthma. There are studies to suggest that following yoga practice persons with bronchial asthma have a reduced need for medication (inhaled or oral), better lung functions and reduced hypersensitivity to known irritants such as histamine. Chronic obstructive pulmonary disease was reported to benefit from moving meditative practices such as yoga, tai chi and qi gong, with patients having improved lung functions and mobility after these practices. Other chronic conditions which impact the respiratory system such as cystic fibrosis and Duchenne's muscular dystrophy did show positive outcomes following yoga, chiefly in slowing the progression of the illness and in bringing about a positive mental state in the patients. Hence yoga can positively impact respiratory disorders by improving lung functions, correcting autonomic nervous system abnormalities and by improving the sense of mental wellbeing. This is an area which would benefit from further studies using rigorous research methods and a deeper exploration of the mechanisms underlying the benefits.

Keywords: Yoga; Respiratory Disorders; COPD; ATT

Abbreviations

COPD: Chronic Obstructive Pulmonary Disease; ATT: Anti Tuberculosis Treatment

Introduction

Yoga includes several techniques including voluntary regulated breathing in which the practitioners alter various aspects of breathing such as the rate and depth among other factors [1]. While yoga was originally intended for mind control and spiritual growth yoga is increasingly being shown to be beneficial in promoting positive health, preventing and treating disease [2]. Among a wide range of disorders yoga has been found to be beneficial in respiratory disorders.

Early studies showed the benefits of yoga in bronchial asthma, in which participants reduced their need for medication while their peak flow rate improved [3]. There have been several studies after this which showed additional benefits in persons with bronchial asthma, including a reduced sensitivity to histamine as a challenge, in persons with mild bronchial asthma [4]. This randomized, cross-over trial was the first to use a placebo (a device which altered respiration and had active and placebo forms) in yoga research. The participants did show reduced sensitivity to the histamine challenge after two weeks of using the active device. Other studies attempted to study whether the findings were applicable in a cross-cultural setting [5]. Yoga was found to be effective in different populations with bronchial asthma in reducing bronchial hyper-reactivity. In order to understand the mechanisms underlying the benefits the often quoted

theory of an autonomic imbalance in bronchial asthma [6], in which vagal predominance is a cause. While most yoga techniques increase vagal dominance [7], a few techniques cause sympathetic dominance [8]. A study done by Khanam and others (1996) assessed the effects of yoga on the autonomic nervous system balance in persons with bronchial asthma [9]. This was followed by a recent study on the effects of a single cleansing technique on autonomic functions in persons with bronchial asthma [10]. These studies suggest that yoga may be reducing bronchial hyper-reactivity by altering an imbalance in the autonomic nervous system.

The therapeutic benefits of yoga have also been seen in other conditions. In cystic fibrosis while yoga practice does not influence respiratory functions adequately, there are psychological benefits such as reduced anxiety and a more positive mental state, with a decrease in overall discomfort [11]. Similarly in Duchenne muscular dystrophy where dysfunction of the muscles of respiration is associated with mortality, yoga practice for sixteen months delayed the onset of respiratory distress and in children with Duchenne's muscular dystrophy, both they and their caregivers had a more positive mental state [12].

In a meta-analysis [13] on the effects of yoga for chronic obstructive pulmonary disease (COPD), involving sixteen studies and 1176 patients, meditative movement including yoga, tai chi and qi gong were found to improve lung functions and physical activity, though more thorough studies were recommended.

Yoga was also found beneficial in patients with pulmonary tuberculosis [14]. The patients who were admitted in a sanatorium received conventional anti-tuberculosis treatment (ATT). Half the patients were randomized to receive yoga as well. After two months the yoga group converted from sputum positive to negative based on microscopy and sputum culture as well as changes in the X-ray. These results demonstrated the usefulness of yoga as an add-on therapy in a chronic, infectious pulmonary disease.

Apart from these examples which have covered the benefits of yoga practice in patients with diagnosed pulmonary disorders, yoga practice appears to prevent deterioration in lung capacities often associated with aging [15]. Hence there appear to be definite benefits of practicing yoga in a wide range of pulmonary disorders, with benefits ranging from improved lung functions and capacities, a positive mental state, correction of autonomic nervous system imbalance and improved immune functioning possibly through the effect of yoga practice on psycho-neuro-immune systems.

The results suggest that yoga is a promising mind-body intervention which should be investigated more extensively.

Conclusion

Yoga practice which includes yoga postures, cleansing practices, voluntarily regulated breathing and meditation, has been reported to be useful for a wide range of respiratory disorders. The earliest and most extensively studied is bronchial asthma. After practicing yoga, persons with bronchial asthma show reduced need for medication and decreased bronchial hyper-reactivity, with improved lung functions. Patients with COPD improved with moving meditative practices including yoga, tai chi and qi gong, showing improved lung functions and better mobility. In chronic conditions like cystic fibrosis and Duchenne's muscular dystrophy (in which involvement of the muscles of respiration is often fatal), patients improve with yoga practice, especially with a better quality of life, improved mental being and slower progression of the disorder. The mechanisms underlying the benefits include increased lung capacities and better lung functions, corrections of an imbalance in the autonomic nervous system, as well as changes in the mental state. These studies form the basis for further rigorously designed controlled trials as well as studies intended to explore the mechanisms underlying benefits seen.

Conflicts of Interest

The authors declare that there are no conflicts of interest to report.

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