Review Article

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The Impact of Selected Yoga Techniques on Pulmonary Disorders

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Abstract

Breathing supports life, Controlled breathing brings bliss and keeps sound. It clears the mind and quiets every one of the feelings thus it can help in the arrival of the vitalizing progression of energy inside us. Air contamination is liable for different respiratory infections like nasal sensitivity, asthma, chronic bronchitis and lung cancer. Several scientific studies had proven that yoga has improved pulmonary parameters in healthy as well as diseased individuals. It helps in expansion of vital volume, tidal volume, FeV1, Fev1/FVC Ratio, expiratory reserve volume, breath holding time and numerous other pulmonary parameters. These progressions propose an expected preventive and helpful part of yoga in pulmonary disorders. Past research studies report that numerous individuals with serious respiratory diseases have found solutions in yoga. It has been proven that the yogic research helps in prevention, control and recovery of numerous respiratory illnesses. Yogic techniques such as Asana, Pranayama, Kriyas and meditation helps in improving pulmonary health. Asanas includes Bhujangasana, Dhanurasana, Matsyasana and Sarpasana; Pranayama includes Anuloma-Viloma, Bhastrika and Bramari; kriyas includes Neti, Dhauti and Kapalabhati; Meditation includes OM meditation and SO-HAM meditation these techniques help in cleansing and enhancing the function of airway epithelium in innate immunity and host defence against chronic obstructive pulmonary disease (COPD), asthma, bronchitis, emphysema and cystic fibrosis.

Keywords: Breathing Timing Parameters, COPD, Pulmonary Diseases, Yogic Techniques and Pulmonary Rehabilitation.

Introduction

The human lung is exposed to airborne poisons and aggravations with every breath. Tobacco smoke, including aloof smoke openings, is a main source of the respiratory infection trouble, alongside air contamination and work environment openness to hazardous air. Contact with smoke from flames utilized in warming and cooking causes intense and persistent respiratory sickness. More than two billion individuals are routinely presented to the harmful impacts of indoor and outside air contamination, which is answerable for 3.5 million unexpected losses every year. Persistent obstructive respiratory sickness and cellular breakdown in the lungs are driving reasons for death around the world, and their numbers are rising. So, the respiratory recovery is a far-reaching intrusion that incorporates practice, preparing, training, and emotional balance, intended to improve the physical and mental state of individuals with pulmonary diseases like COPD.[1] The proof is expanding for the adequacy of a few sorts of activity preparing as a feature of aspiratory restoration pointed toward lowering dyspnoea and fatigue, just as improving wellbeing related personal satisfaction and exercise limit in people with COPD. Yoga has been incorporated as a part of activities recommended for some pulmonary rehabilitation programs.[2] It has been incorporated as a supportive exercise for recuperation treatment in mental and physiological recovery projects and proved to improve mind-body coordination. Investigations of momentary yoga practice have improved lung functioning[3],

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expanded diffusion limit, lowered the dyspnoea-related trouble[4] and improved emotional stability.

In India yoga is practiced from ancient times and indicates the relationship between the individual self and the supernatural self. The body's organs and frameworks are enhanced through asanas (postures) and pranayama (controlling the breath). Different yogic postures help in curing different diseases and lowers anxiety. Several scientific studies reveal that regular practice of yoga heals physiological disorders. Manocha and Sabina, in their experimental study had proven that, through the regular practice of selective yogic techniques mild to moderate asthmatic patients can be cured[5,6], another study by Jayasinghe has revealed that cardiovascular illnesses can be cured the yogic techniques[7], yoga can also be used in the management of diabetes[8], through the practice of particular yogic kriyas and pranayama bronchitis can be manage and cured[9], burdensome issues like anxiety and stress which are the root causes to several respiratory disorders have been cured through the yogic practices[10] and pleural effusion can also be managed through yoga.[11] A number of clinical trials have suggested that yoga training improves the pulmonary function of patients with respiratory diseases.

Role of Yoga in Life

Yoga is an ancient tradition practiced in India. The word yoga is taken from the Sanskrit word 'Yuj' which intends to join. Yoga practice comprises Asana (a specific posture of the body which assists mind and body steadiness). Pranayama (controlled breathing- purifies nadis and free flow of prana).[12] Yoga is an ancient science, which brings harmony of the body and mind. Apart from asanas and pranayama which strengthens body and mind, it also balances emotions and experiences inner bliss. Now a days public aware of the therapeutic application of yoga as it treats different illnesses and improves health at all levels (Annamaya, Pranamaya, Manomaya, Vijnanamaya and Anandamaya). Infirmity occurs when balance between mind and body is disturbed.[13] Yoga contains components that address issues at each level, for example, Asanas that relax and tone the muscles and strengthen the internal organs and Pranayama that controls breathing directs free flow of prana. Meditation calms the mind, balances the emotions and provides inner harmony. The aim of yoga treatment is preventive and therapeutic. The regular practice of yoga re-establishes emotional balance and provides physical, mental and spiritual well being.[14]

Role of Yoga in Respiratory Diseases

Previous studies reveal that many people with severe respiratory ailments have found a better solution in yoga. As the mind is relaxed the imbalance that causes diseases such as bronchial asthma and nasal allergy is reduced.[15] Yoga is considered as effective tool for maintaining proper health and also has a profound effect on the lung functions of the individuals. It has proven that yogic practices help in prevention, control and rehabilitation of many respiratory diseases.[16]

The reversible airway obstructive disease is asthma which is common in children. Around 300 million individuals are experiencing asthma globally.[17,18] About 10% of this asthma problem belongs to India. Yoga is appears to have beneficial impacts in asthma patients.[19] Similarly improved Pulmonary capacity in the patients, some clinical examinations have shown the significant improvement in Peak Expiratory Flow Rate (PEFR), Vital Capacity (VC), Forced Vital Capacity (FVC), Forced Expiratory Volume (FEV1), FEV/FEC %, Maximal Voluntary Ventilation (MVV), Erythrocyte Sedimentation Rate (ESR) and eosinophil count. The frequency of asthmatic attacks is reduced. There is decrease in usage of medicine, improvement also seen in symptoms score, intensifications, spiro metrical parameters with improved personal satisfaction and great effect on cell reinforcement level. The reduction of usage of medicine is sooner than that accomplished with regular treatment alone. Several studies have reported that yoga practice relieves pain, stress, anxiety and sleep disorders, both in patients and their caretakers. Individuals with severe respiratory illnesses have found a solution in yoga. If the lungs are permanently damaged in chronic bronchitis, yoga helps in improving mechanical efficiency of our breathing and increases the capacity of the lungs. Yoga has an impact on ventilator lung capacities, which rely upon consistency of lungs and chest, airway obstruction and strength of respiratory muscles. Yogic breath (Pranayama) comprises exceptionally lethargic, deep breaths with supported breath hold after every inhalation and exhalation. So, it is considered as a strategy for breathing and chest development work out. The Global Initiative for Asthma has considered yoga is useful in reducing asthma manifestation score and improves respiratory capacities in asthma patients.[20-28]

According to the WHO reports, there were 64 million individuals having COPD and 3 million individuals lost their lives with COPD in 2004.

WHO predicts that COPD will turn into the third driving reason for death worldwide by 2030. The Global Initiative for Chronic Obstructive Lung Disease (GOLD) the management of COPD to relieve symptoms and reduce risk of exacerbations, comorbidities, improved exercise resilience, improved wellbeing status, and decreased mortality.[29] Some of these objectives can be accomplished by starting breathing activities in these patients.[30] It is discovered that Yoga has been proved to be useful in patients having COPD.[31] Yoga additionally improves the diffusion limit in COPD patients. It has been discovered that yoga helps in chronic stress and nervousness and help in improving the quality of life.[32,33]

Effect of Yogic Techniques on Respiratory System

Yoga techniques comprises of kriyas, Asanas, Pranayama and Meditation through the proper practice of the following techniques, one can improve the proper function of the respiratory system and can get rid of the respiratory disorders and diseases.[34]

Kriya (once a week) means to cleanse the inner organ systems and the nadis. This facilitates free flow of prana[energy], thereby developing inner awareness; desensitizes hypersensitive reactions in the pathways.

Jala Neti

Neti pot is filled with Lukewarm saline water and insert the spout into either nostril and the saline water comes through the other nostril. This saline water removes dirt and mucus filled with bacteria, clears the blockages in the nasal path and destroys the disorders of phlegm. It relieves hypersensitivity, sinusitis and throat disorders.

Sutra Neti

A rubber catheter tube of 3mm radii and 15 inches length is inserted into the nostril and pulled out through the mouth. Then hold both the ends of the tube and gently move the tube forward and backward. It clears all the blockages of the nostrils and removes excess mucus from the nasal passages.

Jala Dhauti

By sitting in a squat posture and drinking 8 to 10 glasses of saline water until the stomach is filled. Then stand and vomit emptying the whole stomach. It removes excess mucus from oesophagus and relieves from asthma, bronchitis and other respiratory ailments.

Vastra Dhauti

Sterilised wet cloth of 5 & 1/2 cm width and 2 & 1/2 mts long cloth is swallowed by taking one end of the cloth into the month untill 30 cms of cloth is left outside, then vomit out the cloth completely. It removes excessive mucus from the stomach, oesophagus and throat.

Asanas: BhuJangasana, it strengthens the respiratory muscle strength. Dhanurasana, it expands the chest and increases breath capacity and Matsyasana, it strengthens the chest muscles.[35]

Pranayama: controlled breath, which is a useful adjunct treatment and can be an effective rehabilitation program for individuals with respiratory diseases.[36] Anuloma-viloma: strengthens the lungs and increases vital capacity.[37] Bhastrika: Increases oxygen level.[38] Ujjayi: removes excess phlegm from the throat.[39]

Meditation: Om meditation, which improves physical outcomes such as lung function, shortness of breath, and fatigue in those with COPD and psychological problems Reduces stress and anxiety.[40]

Conclusion

People suffering with COPD are emotionally unstable and feel anxiety. In these conditions, Yoga plays a major role in managing pulmonary disorders. yogic practices such as, Kriyas and Pranayama removes excess mucus from the lungs, increases vital capacity and improves diffusion capacity thus reduces shortness of breath. These techniques removes the blockages from the nasal passages and cleans all the nadis in the body that allows free flow of energy (prana). The asanas expand the chest region, improves respiratory muscle strength, strengthens the immune system and regulates the glandular secretion in the body. The meditation technique cures the mind (mental level) by removing the negative thoughts, provides emotional balance, relieves stress and anxiety which are most common in patients suffering with COPD. All these yogic practices helps in managing pulmonary disorders, that includes asthma, bronchitis, dyspnoea, emphysema and COPD.

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