

# The Yogic Effect of Respiratory Disorder

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**Abstract:** *Yoga has a wide-ranging and everlasting effect on the human body system. Because our bodies are interrelated, practising yog asana and pranayama will help every organ. The most important system in the human body is the respiratory system. The external environment (pollution, smog) and modern lifestyle, particularly city lifestyle, have a negative impact on our bodies. The effect of yoga on the respiratory system is described in this article.*

**Keywords:** Yoga, Yogasana and Pranayama

## I. INTRODUCTION

Bronchial asthma is a type of chronic inflammatory airway disease. It's often linked to airway hyperresponsiveness, which causes recurring episodes of wheezing, dyspnea, chest tightness, and coughing, especially at night or early in the morning. Increased vagal tone is one of the several etiopathogenic characteristics of asthma. Asthma symptoms such as breathlessness, according to the Global Asthma Report (2014), can cause worry, emotional, and psychological suffering in asthma sufferers. The stigma associated with an asthma diagnosis is one of the most significant roadblocks to effective asthma management. Yoga and Pranayam practises regulate the autonomic nervous system, modulate breathing rate, and so affect a variety of physiological factors. They also have an effect on the asthmatic patient's psychological state and help to reduce the stigma associated with asthma. Reduced sympathetic reactivity and relaxation of voluntary inspiratory and expiratory muscles are the main causes of these alterations. The impact of breathing strategies on asthma has been studied in a number of ways. Several studies have shown that using various yogic breathing exercises might help asthmatic patients [5-7]. The current study was undertaken with the goal of increasing the quality of life of asthmatic patients by involving them in various yoga activities.

Chronic obstructive pulmonary disease (COPD) is a leading cause of morbidity and mortality in the United States, and it is a major public health issue. COPD is expected to be the third biggest cause of death worldwide by 2020, with a fifth-place socioeconomic impact. COPD is marked by irreversible airflow obstruction, a steady deterioration in lung function, lung tissue loss, decreased quality of life, and high mortality rates. Reduced symptoms, complications, and exacerbations, greater exercise tolerance, improved health status, and lower mortality are all part of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) management. Pulmonary rehabilitation is largely acknowledged as the most effective non-pharmacotherapy in the management of COPD, according to recent evidence-based clinical practise guidelines and declarations. Various exercises, such as upper extremity exercise, Tai Chi, and yoga training, have been shown to reduce dyspnea, enhance lung function, and improve COPD patients' quality of life in studies. Furthermore, intensive flexibility training with a physical therapist that focuses on stretching and rib cage mobilisation can greatly increase flexibility. Walking distance of 6 minutes

Yoga is thought to have originated in ancient India and to represent the unification of the individual and transcendental selves. Asanas (postures) and pranayama (breathing exercises) cleanse the body's organs and systems (controlling the breath). Yoga asanas and pranayama, as well as meditation, have become popular in the West, and the practise of yoga has been "westernised." Postures are taught as means to an aim, such as healing an ailment, reducing stress, or improving one's appearance. People with asthma, heart illness, diabetes, TB, mental disorders, osteoarthritis, and pleural effusion have all been proven to benefit from yogic activities.

A number of clinical trials have suggested that yoga training can help people with COPD improve their pulmonary function, although the quality of these research has not been comprehensively assessed. As a result, we conducted a systematic review and meta-analysis of existing randomised controlled trials (RCTs) to determine the efficacy of yoga training on pulmonary function and other clinical outcomes in COPD patients.

Yoga is an ancient Indian practise that promotes physical, mental, and spiritual well-being. Swami Vivekananda introduced it to the United States in 1893, and since then, yoga practise has turned toward the goals of health, beauty, and bodily therapy, ushering in the modern yoga era. As the popularity of modern yoga grew, the focus switched to mind-body activities. Standard yoga commonly involves asana (posture), pranayama (breathing), and meditation, with pranayama being used by 89.9% of yogis and meditation being used by about half of them (54.9%). Asana is a type of whole-body movement that includes multi-joint stretching and strength-building motions of varied degrees of difficulty, as well as other fitness-related activities. Puraka (inhalation), Kumbhaka (retention), and Rechaka (breath holding) are the three phases of pranayama, which entail voluntary control of respiratory muscles and involve varied breathing speeds, shortening and elongation of breathing, and breath holding (exhalation).

## **II. YOGA**

Yoga is derived from the Sanskrit word 'Yuj,' which meaning 'to connect.' Yoga is a living science aimed at fully developing the sixth sense and enabling and equipping man to live a tranquil and joyous existence. Yoga is an ancient method that promotes body and mental balance. The Bhagavad Gita, the most well-known of all Indian philosophical texts, asserts, "Yoga is competence in action." Yoga is a holistic philosophy for living that includes not only exercises to improve the 'skill' of the body, but also strategies to affect the mind and emotions.

Patanjali, known as the "Father of Yoga," believed that each person is made up of matter (prakriti) and spirit (manas) (purursha). He defines yoga as "Yogah Chitha Vritti Nirodhah," which translates to "Yoga implies managing the activity of the mind."

Ashtanga Yoga, as taught by Patanjali, comprises eight aspects:

1. Yama, or the Moral Code
2. Niyama (nonattachment) is a Buddhist concept.
3. Asana (posture)
4. Pranayama (breathing control)
5. Pratyahara, or Sense Control
6. Dharana (concentration) is the sixth step.
7. Dhyana (meditation) is number seven.
8. Contemplation or Samadhi

## **III. PRANAYAMA**

To live is to breathe. Life is completely reliant on breathing; all living things, even plants, require air to survive. A Hindu saying says, "Life is nothing but a sequence of breaths." From the moment an infant fills its lungs to the last gasp of a dying man, breath is always present.

Pranayama is an important scientific and therapeutic part of yoga. Pranayama is the control of intake, exhalation, and the retention of essential energy during the breathing process. Prana is the life force that penetrates the entire universe. It is the bio energy that stimulates the human organism and the life within the seed that causes it to grow. It has a strong connection to the air we breathe, which is our primary source of prana. However, air is merely the physical medium via which prana is extracted and managed. 'Yama' means 'control,' and pranayama is a collection of methods aimed at stimulating or balancing vital energy. They cleanse and unblock the pranic body, allowing energy to flow freely. Pranayama provides more than just a mechanical benefit by exercising the lungs. It teaches us to use all of our lungs, stimulates lung tissue, relaxes chest muscles, and energises the entire system. Pranayama has a relaxing impact that works in tandem with meditation to provide us peace and harmony.

The 'prana shakthi' or 'Kundalini' is a dormant potential energy that contains all of the life force or Prana. The 'mooladhara chakra' is where it lives. This prana moves from the mooladhara chakra up the spinal column to the 'Ajna chakra,' which is located between the eyebrows, according to yoga. Prana is also disseminated throughout the body via a variety of nerve channels, ensuring that it reaches every particle.

Inhalation (puraka) stimulates the system and fills the lungs with fresh air; retention (kumbhaka) raises the internal temperature and aids in the absorption of oxygen; and exhalation (rechaka) causes the diaphragm to return to its original position, forcing toxins and impurities out through the contraction of intercostal muscles. The success of Pranayama is contingent on maintaining precise ratios between inhalation, exhalation, and retention.

The general sense of inadequacy is generated by air polluted by gasoline fumes and a lack of sunlight caused by a thick layer of immobile smoke hanging over cities caused by industries and other sources. The effects of temperature and climate on our bodies cause us to feel completely weary at the conclusion of each season of the year. When atmospheric pressure is very low or when there are sudden variations in temperature, we feel particularly fatigued and worn due to the build-up of toxins created by each physical or mental effort; we seem to lack air and vital energy drops, especially when the weather is hot. Pranayama can help to reduce the build-up of toxins in the body, which paralyses the muscles and nerves. Pranayama cleanses the body of impurities before replenishing it with therapeutic oxygen that stimulates circulation.

Pranayama is made up of two words: prana, which means breath, and ayama, which means to extend or expand. This refers to the ability to control one's breathing. The term pranayam, which literally means "control of prana," has come to be connected with the control of the act of breathing in practise. Throughout its life, every living being is observed to breathe air (pran vayu) in and out of its body. Pranayama (yogic breathing) is a technique for controlling pran-vayu and extending life. Puraka (inhalation), kumbhaka (breathing retention), and recaka (exhalation) are the three components of pranayama (expiration) In hatha-yoga, several intricate postural techniques of yogic breathing and mudras, bandha, are described. Suryabhedana and ujjayi (Hissing breath), sitkari, sitali (cooling breath), bhastrika (bellows breath), Bhramari, Murcha, and plavini are the eight forms of pranyama. anulom vilom (alternate nostril breathing technique) and kapalbhati are two other types of pranayam (frontal lobe cleansing technique)

#### **IV. EFFECT ON RESPIRATORY SYSTEM;**

One of the most important systems in the body is the respiratory system. The lungs, bronchial tube, nose, and air channels make up this system (larynx, pharynx, and trachea). It is primarily in charge of delivering oxygen and removing carbon dioxide from the body. It also enables us to communicate. Our life source is oxygen, and a lack of oxygen in the body might result in death. The hundred-billion cells that make up our body, particularly the brain, utilise the oxygen delivered by our Respiratory System.

The health of the body is preserved. Blood purification is a process in which the blood is cleansed of impurities. The ability to absorb oxygen has improved. Strengthening the heart and lungs Blood pressure management, Nervous system regulation is a term used to describe the process of regulating the nervous system Assisting with the healing process and therapies Increasing infection resistance

#### **V. EFFECT OF PRANAYAM**

Pranayam is made up of three parts. Puraka, Kumbhaka, and Recaka are three different types of Puraka. Puraka is a Sanskrit word that means "inspiration." The heart rate slows during inhalation; with a slower pace, the heart's resting period is lengthened; the diastole is prolonged; the heart muscles enjoy more rest, while the cavities of the heart are filled with blood. More blood is pumped into circulation with greater force during the next contraction (systole), improving overall circulation.

Kumbhaka (retention of breath): Fresh air is not circulated during kumbhaka, resulting in a reduction in blood oxygen tension. As a result, some of the inactive capillaries that were previously crushed free up. As a result of the cerebral anoxia, cerebral vasodilation occurs, and circulation improves. Kumbhaka disrupts the brain waves and inhibits vital physiological rhythms. All brain rhythms can be controlled by regulating brain waves. It also has a physiological effect on the body by forcing the mental process to halt due to the vacuum formed inside the body.

Recaka (Expiration): Recaka is a slow expiration technique that uses conscious effort and the cerebral cortex of the brain. These inhibitory impulses from the cortex overflow into the next part of the hypothalamus that deals with emotions, quieting it down. As a result, a relaxing effect is produced.

The following are the effects of several types of pranayama.

##### **5.1 Pranayama Surya Bhedana**

Pranayama helps to aerate the lungs, eliminate mucus, and improve lung compliance. There was a large increase in O<sub>2</sub> consumption (17%), a significant decrease in digit pulse volume (45.7%), and a significant increase in systolic blood pressure (mean increase 9.4 mmHg).

Ujjayi pranayama (Hissing breath): Ujjayi or psychic breath expands the effective usage of lungs by increasing the pressure of air in the lungs. It improves blood flow throughout the body by increasing oxygen transport in the lungs while the body is calm. The carotid sinuses, which regulate blood pressure in arteries, are affected by ujjayi's throat spasm. Ujjayi provides a small pressure on the carotid sinuses, which decreases blood pressure over time, reducing stress and slowing the mind's cognitive processes. This procedure allows the alveoli in the lungs to open, allowing the lungs to absorb more oxygen. It helps the lungs.

## **VI. CONCLUSION**

According to this study, yoga reduces the number of asthma attacks, drug use, and improves peak flow rate. We suggest that a large-scale investigation on the effects of yoga on asthma be conducted. To enhance asthma patients' lives, community-based education initiatives should be used to instill positivity in them, and patients should be able to enjoy their psychosocially active lives in the community.

Pranayama aids in the remodelling of breathing habits and patterns by introducing conscious awareness to breathing. Slow and deep breathing is the essence of pranayama, which is cost-effective because it eliminates dead space ventilation. It also refreshes the air throughout the lungs, as opposed to shallow breathing, which just freshens the air at the base of the lungs. Pranayama unites the mind and body when practised on a regular basis. As a result, pranayama has a direct impact on the body's many physiological functions, providing favourable results. The respiratory muscles are strengthened through regular practise of various types of pranayama. Pranayama improves expiratory output and reduces pulmonary resistance. The voluntary breath holding time rises after practising pranayama. The chemoreceptor may have been accustomed to hyper apnea, which could explain this. Various types of pranayama aid in the detoxification of the lungs and respiratory tracts, as well as the increase in oxygen supply and purification of the blood. Pranayama is a breathing technique used in yoga. The result of pranayama is that it strengthens the lungs, increases lung volume, and improves overall health. This consequent effect of pranayama is excellent for lung strengthening, improving lung volumes and capacities in healthy people, controlling other physiological functions at some level, and lastly controlling prana manifestation even beyond the body.

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