

VOLUME 9 (SPECIAL ISSUE 2) 2023

ISSN 2454 – 3055

**Manuscripts under Special Issue are published under the
theme “Yoga Practices and Alternative Therapies on
Human Health”**

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**INTERNATIONAL
JOURNAL OF
ZOOLOGICAL
INVESTIGATIONS**

***Forum for Biological and Environmental
Sciences***

Published by Saran Publications, India



International Journal of Zoological Investigations

Contents available at Journals Home Page: www.ijzi.net

Editor-in-Chief: Prof. Ajai Kumar Srivastav

Published by: Saran Publications, Gorakhpur, India



ISSN: 2454-3055

Impact of Simplified Kundalini Yoga on Lung Functions Among COPD Patients

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Received: 17th March, 2023; **Accepted:** 5th May, 2023; **Published online:** 29th June, 2023

<https://doi.org/10.33745/ijzi.2023.v09ispl2.015>

Abstract: Yoga Sutra written by Sage Patanjali "Father of Yoga" is a guide book that provides inspiration for present yoga practices. Yoga originated in ancient India which promotes physical, mental and spiritual well-being. Yoga is a holistic philosophy for living that includes exercises to enhance the skill of the body and also strategies to affect the mind and emotions. To live is to breathe. Life is completely reliant on breathing, all living organisms even a single plant needs air to survive. Life is nothing but sequence of breaths. Yoga helps to maintain the state of equilibrium thereby health and strength of body and mind are acquired by enhanced prana. The prana shakthi or Kundalini is a dormant potential energy which contains all of the life force or prana. Yoga improves pranic energy tremendously in the body, which in turn cleanse and unblock pranic body, allowing energy to flow freely. Practice of pranayama make use of full lungs, stimulates lung tissues, relaxes chest muscles and energises the entire system. Pranayama has a relaxing effect that works in tandem with meditation and provides peace and harmony. Pranayama helps to aerate the lungs and improves lung compliance.

Keywords: Simplified Kundalini Yoga, Lung functions, Prana, Pranayama, Chronic obstructive pulmonary disease

Citation: Sreedharan B. and Nalini V.: Impact of simplified Kundalini Yoga on lung functions among COPD patients. Intern. J. Zool. Invest. 9(Special Issue 2): 71-74, 2023.

<https://doi.org/10.33745/ijzi.2023.v09ispl2.015>



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Introduction

A disorder that makes it hard to breathe is chronic obstructive pulmonary disease, or COPD. Emphysema, chronic bronchitis, and chronic asthma are all components of chronic obstructive pulmonary disease. The alveoli, also known as "air sacs," are damaged by emphysema. These sacs play a crucial role in the exchange of oxygen and carbon dioxide in the lungs. Inflammation

and mucus production persist for an extended period of time, sometimes many months out of the year, defining chronic bronchitis. It's most recognisable symptom is a persistent cough, sometimes called a "smoker's cough," that is particularly bad in the early morning and when the air is wet and chilly.

In those with chronic asthma, airway blockage

is a common symptom, and drugs that reduce muscle contractions may help. The term "lung function" is used to describe how effectively the lungs perform their role in the breathing process. As you breathe in, oxygen is drawn into your bloodstream and carried all throughout your body. Exhaled carbon dioxide is a by-product of cell metabolism that makes its way to the lungs. The respiratory system is one of the body's most vital organs. This system is comprised of the lungs, trachea, nasal passages, and bronchial tubes (larynx, pharynx and trachea). The spirometer measures FEV1 (forced expiratory volume in one second) and FVC (forced vital capacity) to characterise lung function. FEV1/FVC is a measure of how much air you can breathe out of each lung. With an increased proportion, the lungs are in better health. One hundred billion brain cells rely on oxygen supplied by the respiratory system. The Global Initiative Gold Criteria for Lung Function accurately characterises the progression of COPD through its several phases-- (1) Mild having two categories: (i) Mild (FEV1 80%) and (ii) Moderate (FEV1 100%); (2) Third-degree severe (FEV1 50-79%); (3) 30-49% of Predicted FEV1; and (4) Very Severe FEV1 <30%.

Cigarette smoking, air pollution, tobacco smoke, cotton, grain, silica, coal, asbestos, and recurrent severe illnesses are all risk factors for chronic obstructive pulmonary disease (COPD). Depression, heart disease, lung cancer, high blood pressure in the pulmonary arteries, and respiratory infections are all possible outcomes of COPD. For patients with chronic obstructive pulmonary disease, simplified Kundalini Yoga exercises have been shown to relieve bronchospasm, strengthen the lungs, and increase lung capacity.

Simplified Kundalini Yoga (SKY):

Kundalini Yoga, in its simplest form, is the art of focusing one's life force on a specific goal during meditation. This practise of attuning one's mind and life force to one another allows for access to

the most delicate levels of energy, leading to greater clarity of thought and insight. The prana shakthi or Kundalini is a dormant potential energy which contains all of the life force or prana. The Mooladhara chakra is where it lives. This prana moves from there up the spinal to the Agna chakra. It also disseminates entire body via a variety of nerve channels ensuring that it reaches every particle.

Thathuvajnani Vethathiri Maharishi's Simplified Kundalini Yoga is the result of his years of yogic practise, meditation, study, and enlightenment, and it consists of the following: (1) Simplified Physical Exercises for the Body, (2) Mental Training Via Meditation, (3) Kayakalpa to increase vitality, and (4) Reflection to boost contentment.

Recommended SKY Practices to Improve Lung Function Among COPD Patients:

Simplified physical exercises have nine types namely Hand Exercises, Leg Exercises, Neuro Muscular Breathing Exercises, Eye Exercises, Kapalabathi, Makarasanam, Massage, Acupressure and Relaxation. Through the course of human evolution nature has given certain level of resistance to illness in the form immune system. When this system is weakened one is liable to contract illness. The five important factors such as food, work, rest, sexual gratification and use of thought force must be streamlined in order to keep perfect immune system to overcome pain and diseases. Physical Exercises helps to maintain the regulation in blood, heat and air circulations between the body and life energy.

Hand Exercises:

Hand exercises comprising of seven postures are advised to practice. Stretching of hands, rotation of hands in clockwise and anti-clockwise direction and twisting of the body towards front and back and movement of shoulders altogether makes free and more inflow of oxygen and thus lung capacity is increased. Circulation of blood, heat, air and life force in hands and arms becomes

normal and regular.

Neuro Muscular Breathing Exercises:

Neuro Muscular Exercises comprising of seven postures are advised to practice. Positive airway pressure due to constant partial contraction of the glutes and prevents closure of smaller bronchi towards the end of exhalation, improve oxygenation and empty the lungs more fully, thus allowing the next inhalation to be more effective. It also works to oxygenate the blood and control the endocrine system. It enhances the essential energy while also providing ventilation to the lungs. Even after working for an entire day without a break, there is no sign of fatigue. Contributes to an increase in expiratory reserve volume, vital capacity, tidal volume, FEV1/FVC ratio, breath holding duration, and many other pulmonary parameters.

Kapalbhati:

Kapalbhati in Sukhasana retaining Moolabandham till the end is recommended. Increases in muscular strength are seen in both the inspiratory and expiratory phases of breathing. The nose and sinuses will have any dust or other particles removed from them. The body experiences a surge of energy. The amount of blood that is supplied to the brain rises.

Acupressure:

Acupressure is a kind of alternative medicine in which pressure is administered to certain places on the body. It is a kind of touch treatment that draws on the concepts of acupuncture and traditional Chinese medicine, both of which are based on the application of pressure to specific points on the body. The term literally translates to "finger pressure." It is a means of communicating with the body via a kind of complementary and alternative medicine that is predicated on the idea that the body has a form of life energy that circulates through the meridians of the body.

Every area of the body that was experiencing

an electrical energy short circuit would have it cleared. It also serves to produce anti-inflammatory effects, relaxes the lungs, and dilates the airways. Finally, it contributes to the production of endorphins. Facilitates relaxation and provides relief from dyspnea. It has been shown to lower blood pressure, keep the neurological system in check, and protect against cardiac diseases.

Benefits and Evidences from the Clinical Trials:

Effect of Yoga on Pulmonary Function in COPD Patients:

The "Effect of Yoga on Pulmonary Function in COPD Patients," is presented by Rayan and Palekar (2019). Thirty people with COPD had their lung parameters measured before and after receiving Yoga treatment. Mean values were observed to change significantly ($p < 0.05$) between before and after the intervention. According to the findings of this investigation, yoga treatment may be used to restore a healthy autonomic balance, regulate breathing rate, and calm the respiratory muscles and centres under voluntary control. Yoga has been shown to boost lung capacity and pulmonary blood circulation by increasing the suppleness of lung tissues and the flexibility of surrounding muscles. Kapalbhati and Pranayama are only two of the many yogic breathing exercises shown to help with respiratory muscle strength, leading researchers to conclude that yoga is beneficial for those with chronic obstructive pulmonary disease.

Comparison of Yoga with Pulmonary Rehabilitation on body composition, inflammatory biomarkers and dyspnoea in patients with COPD:

A study comparing the effects of yoga and pulmonary rehabilitation on COPD patients' body composition, inflammatory biomarkers, and dyspnea was undertaken by Guleria *et al.* (2018). Thirty COPD patients were split evenly between the study's experimental and control groups, and all of them participated in a 12-week Yoga training programme. Dyspnea score, spirometry, serum CRP, and body composition were all

evaluated at the beginning and end of the 12-week period. They concluded that both Yoga and PMR are effective in reducing dyspnea in COPD patients. Better body composition changes may be made using PMR.

Effect of Yoga an Adjunctive Therapy on the Respiratory Function of COPD Patients with Mild to Severe Grades of Severity in a Tertiary Care Centre in Kerala:

This is according to "The Respiratory function of COPD patients with moderate to severe categories of severity," by Chee and Sin (2019). The respiratory function parameters forced expiratory volume in one second (FEV1), forced vital capacity (FVC), peak expiratory flow rate (PEFR), and forced expiratory volume in one second (FEV1/FVC) all improved significantly in 30 subjects who were chosen according to the Global Initiative for Obstructive Lung Disease. Static MIP and MEP (Maximum Inspiratory and Maximum Expiratory Pressures) respiratory pressures also showed significant improvement over the study period. The importance of rehabilitation centres in hospitals of all types has been highlighted by this research.

The effect of yoga on pulmonary function in COPD patients was studied by Rayan and Palekar (2019). The respiratory parameters of a total of 30 individuals diagnosed with chronic obstructive pulmonary disease (COPD) were assessed both before and after they received yoga treatment. It was determined that there was a statistically significant change ($p < 0.05$) between the mean values obtained before and after the intervention.

"Comparison of Yoga with Pulmonary rehabilitation on body composition, inflammatory biomarkers, and dyspnea in patients with COPD" is presented by Guleria *et al.* (2018). It was determined that COPD patients who practised Yoga or PMR showed an improvement in their dyspnea. PMR is superior in terms of its ability to improve body composition.

Chee and Sin (2008) studied the Respiratory function of COPD patients with moderate to severe grades of severity. According to the findings of this study, there was also a significant rise in MIP and MEP static respiratory pressures (Maximum Inspiratory and Maximum Expiratory Pressures). Their attention has also been drawn by this research to the need of rehabilitation centres in hospitals, regardless of the sector in which the hospitals are located.

Conclusion

Yoga decreases the frequency of asthma attacks, wheezing, and the need for medication. It also improves the degree to which the airway is obstructed, raises the amount of oxygen that enters the lungs, and thus raises the level of blood purification. As a result, healthcare as a whole is enhanced, patients become more self-sufficient in their day-to-day activities, and they experience an improvement in both hope and self-esteem.

References

- Chee A and Sin DD. (2008) Treatment of mild chronic obstructive pulmonary disease. *Int J Chron Obstruct Pulmon Dis.* 3(4): 563-573.
- Guleria R, Arora S, Tiwari P, Mohan A, Kalaivani M and Madan K. (2018) Comparison of yoga with pulmonary rehabilitation on body composition, inflammatory biomarkers and dyspnoea in patients with COPD. *European Respiratory J.* 52: PA835.
- Rayan SK and Palekar S. (2019) Effect of yoga on pulmonary function in COPD patients. *MedPulse. Int J Physiol.* 12(3): 64-66.