



THE INTERNATIONAL ASSOCIATION OF YOGA THERAPISTS

Research Summary for Yoga Therapists: Yoga Therapy for Respiratory Conditions

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Research Summaries for Yoga Therapists are a service provided by IAYT to help yoga therapists navigate the twists and turns of the research landscape. The full reference can be found here:

Bernardi, L., Bernardi, N. F., & Passalacqua, G. (2016). Yoga therapy for respiratory conditions. In: S. B. S. Khalsa, L. Cohen, T. McCall, & S. Telles (Eds.), *The principles and practice of yoga in health care*, 317–334. Pencaitland, United Kingdom: Handspring Publishing.

Definition of the disorders

Two respiratory conditions are described in this chapter:

1. Chronic obstructive pulmonary disease (COPD) is a chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. Chronic inflammation of the airways, lung tissue, and pulmonary blood vessels is a result of long-term exposure to inhaled irritants, such as tobacco smoke.

2. Asthma is defined as recurrent attacks of breathlessness and wheezing, varying in severity and frequency and usually reversible. It is often a result of complex interactions among airways, inflammation, lung mechanics, and breathing patterns.

Smoking and air pollution are major contributors to both respiratory conditions.

Usual treatment options

Usual treatment options involve inhaled corticosteroids and bronchodilators.

Prevalence (How common are the conditions?)

According to the World Health Organization, moderate to severe COPD affects 65 million people worldwide. In 2005, COPD was responsible for the deaths of more than 3 million people. It is projected to become the third leading cause of death worldwide by 2030.

As of 2007, 25.1 million American adults and 9 million children had been diagnosed with asthma, and it was responsible for 217,000 emergency room visits. Annually, asthma is estimated to cause 3,500–5,000 deaths in the United States.

Rationale for yoga

Yoga may assist in conditioning bronchial tone, facilitating deeper breathing, and heightening parasympathetic activity. The practice may affect breathing rates and diaphragm use and reduce skeletal muscle deconditioning.

It has been suggested that psychological stress can affect cortisol release as well as inflammatory mediators that increase airway inflammation and weaken immune regulation. Yoga has been purported to be an effective tool for stress management.

Asthma

General methods

A search of available randomized controlled trials (RCTs) was



conducted in MedLine using “asthma” and “yoga” as search terms. The search identified 13 RCTs for inclusion in this review.

Who was studied?

Participants diagnosed with asthma with an age range of 9 to 70 were included in the studies.

How were the studies conducted?

- Interventions include pranayama or regular breathing, yoga asanas, Pink City Lung Exerciser (PCLE; a mechanical device that mimics slow pranayama breathing), Sahaja Yoga, Buteyko Breathing Technique, and *dhyana* (meditation). Basic yogic approaches include control of breathing, relaxation, and physical posture control, all of which affect the mechanical aspects of ventilation and lung muscle control.
- Control conditions were “no yoga, medication only” (i.e., usual treatment, no change), PCLE, placebo, relaxation techniques, and stretching.
- Outcomes used were FEV1 (forced expiratory volume in 1 second), PEFR (peak expiratory flow rate), quality of life (QOL), medication intake, and number of asthma attacks.
- Sample sizes ranged from 17 to 276 participants (including controls), with a total of 960 participants for all studies.
- The duration of the yoga intervention ranged from 2 weeks to 6 months. Frequency of yoga classes ranged from daily to 3 times per week. Class duration ranged from 30 minutes to 2 hours.

What did the researchers find?

- Five out of 13 studies measured PEFR. Three studies found significant improvements compared to controls. Two studies only found significant improvements in the active group between baseline and post measures.
- Six of the 13 studies measured FEV1 as an outcome. Two studies found no effect, two studies found significant improvements compared to controls, and two studies found significant effects within the active group only, from baseline to postintervention.
- Two studies measured the number of attacks and found significant improvements compared to control groups.
- Two out of four studies measuring QOL found significant improvements in the yoga groups.
- Two out of four studies measuring medication intake found significant reductions compared to the control groups.

Were adverse events reported?

Adverse events were not reported in the chapter summary.

COPD

General Methods

A MedLine search of available evidence was conducted by using “yoga” and “COPD” as search terms. The search identified eight clinical trials for inclusion in this review. Five studies included a control group (four RCTs and one nonrandomized study). The remaining three studies were pre–post designs without control groups. For the purposes of this summary, we will focus on the five studies with control groups.

Who was studied?

Participants diagnosed with COPD were included in five studies. The age range was not reported in the chapter summary.

How were the studies conducted?

- Interventions included yogic breathing/pranayama, posture, and stretching. Style of yoga was not specified.
- Control conditions were physiotherapy, usual care, and standard care.
- Outcomes used were FEV1; FVC (forced vital capacity), QOL, 6-minute walking test, and dyspnea (shortness of breath) intensity.
- Sample sizes ranged from 24 to 75 participants (active participants and controls), with a total of 245 participants for all studies.
- The duration of the yoga intervention ranged from 2 to 9 months. Frequency of yoga classes ranged from daily to 2 times per week. Class duration ranged from 30 minutes to 1 hour.

What did the researchers find?

- Two out of four studies reporting FEV1 showed an increase at the end of the intervention compared to controls. Statistical significance for observed improvements was not specified. Two studies found no differences between the yoga and the activities assigned to the control groups, meaning researchers found no evidence that yoga was more effective than the control conditions (physiotherapy and usual care).
- Of the two studies measuring FVC, one found improvements and one found no change compared to controls.
- Two studies using the 6-minute walking test reported an increase in mean distance after yoga training compared to control groups; however, statistical significance was not specified.
- One study measuring dyspnea distress and QOL found improvements compared to the control group; however, statistical significance was not specified.

Were adverse events reported?

Adverse events were not reported in the chapter summary.

What were the limitations of the studies?

Sample sizes were small, reducing the certainty in the effects reported. Larger sample sizes are needed. Randomization processes were not clearly reported, reducing the ability to assess bias minimization. Variable outcomes, duration of the intervention, types of intervention and control group activities, and severity of diagnoses made it difficult to compare across studies to establish a body of evidence.

Take-away message

As with many areas of yoga research, the evidence is still in preliminary stages with the typical limitations found in study designs; however, these studies suggest some potential benefits for respiratory diseases in general and are a good starting point for future research.

Clinical relevance

Although higher quality research is needed, the data to date support the idea that at least some types of yoga may be useful as an adjunct to conventional treatment of both asthma and COPD. In asthma, some studies have found subjects practicing yoga had improved airflow rates, fewer acute attacks, and less need for medication. In COPD, some studies have found improved lung volumes and airflow rates in the groups practicing yoga; others documented improved exercise tolerance. As many different styles of yoga were tried and no comparisons were made between yogic approaches, pending further research, yoga therapists are advised to base their care strategies on their training and clinical experience.