Yoga and Asthma

Compiled by: Trisha Lamb

Last Revised: May 7, 2004

© 2004 by International Association of Yoga Therapists (IAYT)

International Association of Yoga Therapists
P.O. Box 2513 • Prescott • AZ 86302 • Phone: 928-541-0004
E-mail: mail@iayt.org • URL: www.iayt.org

The contents of this bibliography do not provide medical advice and should not be so interpreted. Before beginning any exercise program, see your physician for clearance.


**Backe, J.** Pranayama—a contribution to the therapy of bronchial asthma. *Krankenpf J*, Jul 1990, 28(7-8):400. [In German.]


**Bell, Baxter, M.D.** Yoga 911: How should you handle an in-class medical crisis? *Yoga Journal*, Nov/Dec 2000, pp. 135-137. (When a student experiences asthmas during class.)


**Beneficial effects of yoga therapy on asthmatics working as iron ore miners.** Swami Vivekananda Yoga Research Foundation, http://www.vkyogas.org.in.

**Benefit for body, mind from gentle art of yoga.** *The Press* (Christchurch, New Zealand), Jun 30, 1998. (Contains quote from a Yoga teacher whose asthma has “all but disappeared” since she began practicing Yoga.)


Eighty-nine percent of patients responded to yogic treatment procedures, out of which 73% gave good and fair responses.


Abstract: There is growing interest on the part of both patients and providers in the use of complementary and alternative medicine (CAM) therapies to treat allergy, otitis media, and asthma. Research efforts investigating CAM are increasing in frequency and quality. Studies suggest possible efficacy for some vitamin and mineral supplements for allergic diseases; results are less clear in asthmatic patients. The use of polyunsaturated fatty acids appears particularly promising for treatment and even prevention of allergy and asthma conditions. Studies also suggest that probiotic preparations have a role in the treatment of allergic conditions. Xylitol gum, syrup, and lozenges have shown efficacy in treatment of acute otitis media, as have some naturopathic herbal remedies. Preliminary results with studies of yoga and various relaxation therapies for treatment of asthmatics suggest that these therapies may have a role, but further work would be needed to document efficacy and delineate the specific types of interventions most appropriate for particular asthmatic populations.


Written by a respiratory physiotherapist with over 25 years’ experience of breathing pattern disorders and a physiotherapist who also works as a manipulative therapist.


Discusses the Buteyko Technique and its relation to pranayama and asthma.


The author is a Yoga practitioner, life-long asthmatic, and exponent and teacher of the Buteyko Method.


Abstract: Background: Patients with asthma are interested in the use of breathing exercises but their role is uncertain. The effects of the Buteyko breathing technique, a device which mimics pranayama (a yoga breathing technique), and a dummy pranayama device on bronchial responsiveness and symptoms were compared over 6 months in a parallel group study. Methods: Ninety patients with asthma taking an inhaled corticosteroid were randomised after a 2 week run in period to Eucapnic Buteyko breathing, use of a Pink City Lung Exerciser (PCLE) to mimic pranayama, or a PCLE placebo device. Subjects practised the techniques at home twice daily for 6 months followed by an optional steroid reduction phase. Primary outcome measures were symptom scores and change in the dose of methacholine provoking a 20% fall in FEV1 (PD20) during the first 6 months. Results: Sixty nine patients (78%) completed the study. There was no significant difference in PD20 between the three groups at 3 or 6 months. Symptoms remained relatively stable in the PCLE and placebo groups but were reduced in the Buteyko group. Median change in symptom scores at 6 months was 0 (interquartile range -1 to 1) in the placebo group, -1 (-2 to 0.75) in the PCLE group, and -3 (-4 to 0) in the Buteyko group (p=0.003 for difference between groups). Bronchodilator use was reduced in the Buteyko group by two puffs/day at 6 months; there was no change in the other two groups (p=0.005). No difference was seen between the groups in FEV1, exacerbations, or ability to reduce inhaled corticosteroids. Conclusion: The Buteyko breathing technique can improve symptoms and reduce bronchodilator use but does not appear to change bronchial responsiveness or lung function in patients with asthma. No benefit was shown for the Pink City Lung Exerciser.


“The Yoga of Healing, an anthology of articles published in *The Hindu* examines eight systems of healing—allopathy, Ayurveda, homeopathy, acupuncture, pranic healing, Reiki, Yoga, and psychoanalysis—their approach to sickness, their intrinsic healing power, and their limitations. Yoga expert T. K. V. Desikachar and allopathic surgeon Dr. Arjun Rajagopalan anchor a series of dialogues with specialists in the various fields. What emerges is the need for a synthesis—a mixing and merging of the positive aspects of all the systems, a need to discover a cohesive path towards holistic healing.” The second part of the book focuses on four common chronic conditions (asthma, backache, headache and high blood pressure), and panels of practitioners from the various disciplines outline how they would begin to treat these problems.


ESutra mailing list October 2000 thread on Yoga and asthma. For information on joining the ESutra mailing list, contact the list moderator Leslie Kaminoff at esutra@aol.com.


Recruited 36 patients to three parallel groups. The two active intervention groups received either yoga or physiotherapy breathing therapy and the control group received no therapy. Both intervention groups received 15 3-hourly sessions. The physiotherapy breathing exercises consisted of gymnastics, diaphragmatic breathing, expiration against resistance, coughing techniques, relaxation and home exercises. There were no details or description of the aims or methods used in the physiotherapy intervention. However, the pranayama breathing technique was used during the breathing exercises, which is similar to the technique used by R. Nagarathna and H. R. Nagendra, “Yoga for Bronchial Asthma: A Controlled Study,” *British Medical Journal (Clin Res Ed)*, 19 Oct 1985, 291(6502):1077-1079.


“This straightforward . . . guide shows readers how to take advantage of several easy breathing techniques and exercises to effectively reduce stress—the most common health complaint in North America—as well as a range of other health problems, including asthma, migraines, hypertension, hyperventilation, and psychosomatic disorders. The author presents simple breathing exercises anyone can do, any time . . .”

From asthma to astha. *Yoga Rahasya*, 1994, 1(2).


Goyeche, J. R. M. The basis of psychosomatic cure. Paper presented at the 5th World Congress of the International College of Psychosomatic Medicine, Jerusalem, Israel, 1979. (Discusses bronchial asthma.)


Abstract: While the standard physiological and even certain psychological characteristics of asthmatic patients are well known, the current diagnostic and therapeutic approach to asthma remains inadequate, as it neglects certain interrelated somatopsychic factors vital to an optimal
diagnostic-therapeutic programme. These include the role of skeletal muscle tension and posture, the role of the “voluntary” respiratory musculature, especially the diaphragm, as well as anxiety, emotional suppression and excessive self-consciousness, all of which may be precipitants rather than the outcome of the onset of asthma. On the basis of these neglected factors and others, implications for an optimally effective therapy are discussed. The physical medicine or physiotherapeutic, as well as other recent therapeutic approaches, are reviewed and evaluated. It is concluded that all of these therapies are too “specific,” and that a more holistic approach is necessary (which is provided in “Asthma: The Yoga Perspective, Part II-Yoga Therapy in the Treatment of Asthma”).


Abstract: The integral yoga approach to asthma (and other psychosomatic disorders) is briefly outlined as meeting all of the requirements for an optimal, holistic, somatopsychic therapy (as outlined in Part I), including correction of distorted posture and faulty breathing habits, teaching a system of general muscle relaxation, techniques for the release of suppressed emotion and for reducing anxiety and self-conscious awareness, as well as special methods for the expectoration of mucus. Yoga practices are described in detail and the available psychophysiological research on yoga practice, as well as clinical-therapeutic studies on yoga as asthmatic therapy, are reviewed. It can therefore be concluded that yoga therapy is most effective with asthma.


Gruber, W., E. Eber, and M. Zach. Alternative medicine and bronchial asthma: A review from a pediatric perspective. Monatsschrift Kinderheilkunde, 1997, 145(8):786-796. [In German.] (Reviews the following methods: acupuncture, homeopathy, yoga, hypnosis, autogenic training, muscle relaxation treatment, manual medicine, ionization of air, and bioresonance.) [See abstract online at http://link.springer.de/link/service/journals/00112/bibs/7145008/71450786.htm.]


Respiratory re-education through yoga techniques as a prevention of asthma and other lung diseases. Athens, Greece: International Association of Yoga Science Centres, 2000. Email: yogscience@otenet.gr, URL: http://www.yoga.org.mk.

Heginbotham, Rodney. Yoga for asthma: A student’s question in a Yoga class prompted a quest for Yoga answers to asthma. A case study. Spectrum Review, Spring 2003, pp. 11-13. See also the letter to the editor by Janet Brindley entitled “Dangerous Asthma Advice” in the Summer 2003 issue, p. 38, in response to this article.


“This CD-ROM provides . . . insight on asthma, its causes, symptoms and diagnosis. It also delves into the commonly asked questions on asthma and the respiratory system. There are altogether 24 asanas explained and demonstrated with appropriate instructions. These asanas are divided into 6 groups: Standing, Sitting, Forward bends, Back bends, Inversions and Supine.”

“The main section of the CD-ROM consists of a description of 24 asanas to be performed with the help of props. Precise oral instructions accompanied by a visual demonstration systematically describe how the props are to be adjusted, how one gets into the pose, a clear explanation on what needs to be done while staying in the pose, followed by how to get out of the pose. Special instructions are also given for those suffering from additional problems or stiffness.”

Jaber, R. Respiratory and allergic diseases: from upper respiratory tract infections to asthma. Primary Care, Jun 2002, 29(2):231-261. Email: rjaber@notes.cc.sunysb.edu.

From the abstract: For the motivated patient [with asthma and allergic rhinitis], mind-body interventions such as yoga, hypnosis, and biofeedback-assisted relaxation and breathing exercises are beneficial for stress reduction in general and may be helpful in further controlling asthma.

Abstract: Forty six young asthmatics with a history of childhood asthma were admitted for yoga training. Effects of training on resting pulmonary functions, exercise capacity, and exercise-induced bronchial lability index were measured. Yoga training resulted in a significant increase in pulmonary function and exercise capacity. A follow-up study spanning two years showed a good response with reduced symptom score and drug requirements in these subjects. It is concluded that yoga training is beneficial for young asthmatics.


Jepsen, Cara. Power Yoga with Beryl Bender Birch and Thom Birch. *YOGA Chicago*, May-Jun 1999, p. 28. (This article mentions how *uddiyana bandha* helps children with asthma by driving the breath into the thoracic cavity.)

Jervidalo, Franz. [Shoulderstand for asthma]. *Bindu*, no. 6, p. 18.


Joslin, Gail. Personal communication on how Yoga aids her in coping with asthma. Jan 19, 1998.


Abstract: “The concept of yoga is helpful for the treatment of Bronchial Asthma,” has created a great interest in the medical research field. In order to investigate whether autonomic functions and pulmonary functions are improved in asthma patients after short term yoga training, a study was conducted with nine diagnosed bronchial asthma patients. Yoga training was given for seven
days in a camp in Adhyatma Sadhna Kendra, New Delhi. The autonomic function tests to measure the parasympathetic reactivity (Deep Breathing test, Valsalva Manouever), Sympathetic reactivity (Hand Grip test, Cold Pressure test), and pulmonary function tests FVC, FEV1, PEFR, PIF, BHT and CE were recorded before and after yoga training. The resting heart rate after yoga training (P < 0.05) was significantly decreased (89.55 +/- 18.46/min to 76.22 +/- 16.44/min). The sympathetic reactivity was reduced following yoga training as indicated by significant (P < 0.01) reduction in DBP after HGT. There was no change in parasympathetic reactivity. The FVC, FEV1, PEFR did not show any significant change. The PIF (P < 0.01), BHT (P < 0.01) and CE (P < 0.01) showed significant improvement. The results closely indicated the reduction in sympathetic reactivity and improvement in the pulmonary ventilation by way of relaxation of voluntary inspiratory and expiratory muscles. The “comprehensive yogic life style change programme for patients of Bronchial Asthma” [has] shown significant benefit even within a short period.


Krusche, F. Yoga respiratory therapy helps children with asthma. *Fortschr Med*, Feb 1999, 117(5):44. [In German.]


Abstract: Asthma can be affected by stress, anxiety, sadness, and suggestion, as well as by environmental irritants or allergens, exercise, and infection. It also is associated with an elevated prevalence of anxiety and depressive disorders. Asthma and these psychological states and traits may mutually potentiate each other through direct psychophysiological mediation, nonadherence to medical regimen, exposure to asthma triggers, and inaccuracy of asthma symptom perception. Defensiveness is associated with inaccurate perception of airway resistance and stress-related bronchoconstriction. Asthma education programs that teach about the nature of the disease, medications, and trigger avoidance tend to reduce asthma morbidity. Other promising psychological interventions as adjuncts to medical treatment include training in symptom perception, stress management, hypnosis, yoga, and several biofeedback procedures.


Discusses the benefits of Yoga for individual children with asthma, allergies, apraxia, obsessive-compulsive disorder, ADHD, and Asperger’s syndrome.

Levy, Alison Rose. A new attitude about asthma: Asthma doesn’t have to be a life sentence; a few yoga techniques can help you breathe easier. Yoga Journal, Sep/Oct 2002, p. 35.


Maevskii, A. A. A complex of breathing exercises (hatha yoga) to arrest the developing attacks of dyspnea in bronchial asthma. Klin Med (Mosk), 1995, 73(4):87-88. [In Russian.]

_________. Hatha yoga in combined ambulatory treatment of bronchial asthma. Klin Med (Mosk), Nov 1990, 68(11):31. [In Russian.]


Manocha, Ramesh. Researching meditation: Clinical applications in healthcare. Unpublished ms. See section on asthma. (Recounts positive effects of sahaja yoga meditation technique on asthma.)

_________. Sahaja Yoga in asthma. Thorax, Sep 2003, 58:825-826.


BACKGROUND: Sahaja Yoga is a traditional system of meditation based on yogic principles which may be used for therapeutic purposes. A study was undertaken to assess the effectiveness of this therapy as an adjunctive tool in the management of asthma in adult patients who remained symptomatic on moderate to high doses of inhaled steroids. METHODS: A parallel group, double blind, randomised controlled trial was conducted. Subjects were randomly allocated to Sahaja yoga and control intervention groups. Both the yoga and the control interventions required the subjects to attend a 2 hour session once a week for 4 months. Asthma related quality of life (AQLQ, range 0-4), Profile of Mood States (POMS), level of airway hyperresponsiveness to methacholine (AHR), and a diary card based combined asthma score (CAS, range 0-12) reflecting symptoms, bronchodilator usage, and peak expiratory flow rates were measured at the end of the treatment period and again 2 months later. RESULTS: Twenty one of 30 subjects randomised to the yoga intervention and 26 of 29 subjects randomised to the control group were available for assessment at the end of treatment. The improvement in AHR at the end of treatment was 1.5 doubling doses (95% confidence interval (CI) 0.0 to 2.9, p=0.047) greater in the yoga intervention group than in the control group. Differences in AQLQ score (0.41, 95% CI -0.04 to 0.86) and CAS (0.9, 95% CI -0.9 to 2.7) were not significant (p>0.05). The AQLQ mood subscale did improve more in the yoga group than in the control group (difference 0.63, 95% CI 0.06 to 1.20), as did the summary POMS score (difference 18.4, 95% CI 0.2 to 36.5, p=0.05). There were no significant differences between the two groups at the 2 month follow up assessment. CONCLUSIONS: This randomised controlled trial has shown that the practice of Sahaja yoga does have limited beneficial effects on some objective and subjective measures of the impact of asthma. Further work is required to understand the mechanism underlying the observed effects and to establish whether elements of this intervention may be clinically valuable in patients with severe asthma.


Mody, Amrish. From asthma to astha. Yoga Rahasya, [n.d., second issue], pp. 31-32.


Abstract: Fifty three patients with asthma underwent training for two weeks in an integrated set of yoga exercises, including breathing exercises, suryanamaskar, yogasana (physical postures), pranayama (breath slowing techniques), dhyana (meditation), and a devotional session, and were told to practise these exercises for 65 minutes daily. They were then compared with a control group of 53 patients with asthma matched for age, sex, and type and severity of asthma, who continued to take their usual drugs. There was a significantly greater improvement in the group who practised yoga in the weekly number of attacks of asthma, scores for drug treatment, and peak flow rate. This study shows the efficacy of yoga in the long term management of bronchial asthma, but the physiological basis for this beneficial effect needs to be examined in more detail.


Abstract: One hundred and ten episodes of airway obstruction in 86 bronchial asthmatics were treated by a special eight stepped yoga chair breathing procedure consisting of very simple neck muscle relaxation movements and asanas with breathing exercises. Seventy percent of the episodes have been successfully relieved within a mean time of 30 mts. The patients gained great confidence and tried this technique before resorting to drugs. The reduction in panic anxiety elements, cutting the vicious circle of aggravating bronchial obstruction appear to work in relieving the acute episodes.

__________, H. R. Nagendra, Sudha, and S. Telles. Reduction of stress and anxiety levels in bronchial asthma by anuloma viloma pranayama. Swami Vivekananda Yoga Research Foundation.

__________, H. R. Nagendra, and S. Telles. Comparison of the beneficial effects of special pranayama techniques (SAV, CAV & NS) in anxiety neurosis, back pain, bronchial asthma, chronic pain, diabetes mellitus, obesity and hypertension by clinical, autonomic and bio-chemical studies. Swami Vivekananda Yoga Research Foundation.

__________, H. R. Nagendra, and S. Telles. Psychological evaluation of the beneficial effects of 3 types of special pranayama (SAV, CAV & NS) in anxiety neurosis, back pain, bronchial asthma, chronic pain, diabetes mellitus, obesity and hypertension. Swami Vivekananda Yoga Research Foundation.


Abstract: After an initial integrated yoga training program of 2 to 4 weeks, 570 bronchial asthmatics were followed up for 3 to 54 months. The training consisted of yoga practices—yogasanas, Pranayama, meditation, and kriyas—and theory of yoga. Results show highly significant improvement in most of the specific parameters. The regular practitioners showed the greatest improvement. Peak expiratory flow rate (PFR) values showed significant movement of patients toward normalcy after yoga, and 72, 69, and 66% of the patients have stopped or reduced parenteral, oral, and cortisone medication, respectively. These results establish the long-term efficacy of the integrated approach of yoga therapy in the management of bronchial asthma.


Contents: Bronchial asthma & nasal allergy—an introduction, Anatomy and physiology of respiratory system, The cause of asthma & nasal allergy, Management of asthma, Yoga—a panacea for modern man, The basis of an integrated approach of yoga therapy for bronchial asthma & nasal allergy, Appendices: The science of illnesses, Breathing practices, Shitkilikarana Vyayama, Yogasanas & Suryanamaskar, Special features of yogasanas, Pranayama, Breathing & Pranayama, Kriyas, Meditation & the science of emotion culturing, Yoga-chair—breathing, Reminiscences of participants


Nair, B. Studies on bronchial asthmatics undergoing integrated approach of yoga therapy. VKYTRC/DIS/00284. Vivekananda Kendra Yoga Research Foundation.


Reports on Dr. Ramesh Manocha’s meditation research. “The Royoal Hospital for Women’s research shows that asthma sufferers practising meditation improved more than those doing relaxation techniques, such as breathing exercises.”


Psychological assessments of IAYT for bronchial asthmatics: Control study. Swami Vivekananda Yoga Research Foundation.

**Rai, Lajpat.** *Yoga and Bronchial Asthma.* Haryana, India: Anubhav Rai Publications. Email: Irai@ndf.vsnl.net.in.


**Relearning to Breathe.** *Proof! What Works in Alternative Medicine,* Apr 30, 1997, 1(3):3. (Summarizes results of studies on both Yoga and the Buteyko method.)


Richter, Rainer, and Bernhard Dahme. Bronchial asthma in adults: There is little evidence for the effectiveness of behavioral therapy and relaxation. Journal of Psychosomatic Research, 1982, 26:533-540


Abstract: Studies of relaxation training for adult asthma patients were reviewed for the period between 1980 and 2000. Six controlled and three uncontrolled studies were identified, employing a variety of methods, such as progressive relaxation, functional relaxation, autogenic training, or yoga. Most studies had low sample sizes and suffered from one or more methodological deficiencies, such as suboptimal data analysis, high dropout rates, problematic measurement procedures, or insufficient descriptions of methodology and results. Overall effects on parameters of lung function, symptoms, medication consumption, and health care use were generally negligible. Problems with the underlying rationale of relaxation therapy in asthma are discussed from a psychophysiological viewpoint. Examples are given of potential beneficial and detrimental effects of these techniques on lung function with respect to emotional processes, the musculoskeletal system, and ventilation as targets of a relaxation intervention. It remains to be demonstrated that relaxation training can significantly contribute to the standard treatment of asthma in adult patients.


Abstract: BACKGROUND: Preliminary studies investigating yoga and breath work for treating asthma have been promising. Several randomized controlled trials have shown a benefit from yoga postures and breathing vs control, but the control in these cases involved no intervention other than usual care. This study advances the field by providing an active control. OBJECTIVE: To determine the effectiveness and feasibility of a yoga and breath work intervention for improving clinical indices and quality of life in adults with mild-to-moderate asthma. METHODS: A randomized, controlled, double-masked clinical trial was conducted between October 1, 2001, and March 31, 2003. Random assignment was made to either a 4-week yoga intervention that included postures and breath work or a stretching control condition. Outcome measures were evaluated at 4, 8, 12, and 16 weeks and included the Mini Asthma Quality of Life Questionnaire, rescue inhaler use, spirometry, symptom diaries, and health care utilization. RESULTS: Sixty-two participants were randomized to the intervention and control groups, and 45 completed the final follow-up measures. Intention-to-treat analysis was performed. Significant within-group differences in postbronchodilator forced expiratory volume in 1
second and morning symptom scores were apparent in both groups at 4 and 16 weeks; however, no significant differences between groups were observed on any outcome measures. CONCLUSIONS: Iyengar yoga conferred no appreciable benefit in mild-to-moderate asthma. Circumstances under which yoga is of benefit in asthma management, if any, remain to be determined.

**Sadhakas, The.** *Yoga Therapy in Asthma, Diabetes and Heart Disease: Principles, Practice, Scientific Results.* Santa Cruz, Bombay, India: The Yoga Institute, 1987.


Abstract: Asthma is one of the common psychosomatic illness influenced by many factors. Bronchodilators give temporary relief and have side effects. The present study is aimed at finding the efficacy of a non-pharmacological approach of naturopathy and Yoga in bronchial asthma. A total no. of 37 patients (19 men, 18 women) with mean age 35.06 yrs. (men), 40.74 yrs. (women) admitted to INYS, Bangalore, for the period of 21 days. The treatment included 1. Diet therapy 2. Nature cure treatment and 3. Yoga therapy. The various parameters including lung function test were measured on admission and once a week. Results showed the significant improvement in PEFR, VC, FVC, FEV1, FEV/FEC %, MVV, ESR and absolute eosinophil count. The patients reported a feeling of well being, freshness and comfortable breathing. Naturopathy and yoga helps in inducing positive health, alleviating the symptoms of disease by acting at physical and mental levels.


**Schatz, Mary Pullig.** *Relaxation* audiotape. Iyengar Yoga Institute of San Francisco. URL: http://www.iyisf.org/resources/bookstore.html. 60 minutes.

“Visualization techniques especially suitable for those with hypertension, asthma, or other conditions affecting the circulatory and respiratory systems.”


From a review by Belleruth Naparstek, guided imagery expert: “There’s a very good book out now which, in spite of it’s annoying, over-promising title . . . can be very helpful to asthmatics. It’s an excellent, psychologically sophisticated program by Kathryn Shafer and Fran Greenfield that includes a lot of quickie, Gerald Epstein-style guided imagery. I would suggest using it to complement whatever therapies you already have in place, and to forget about counting the days.

I don’t believe asthma is simply a physical manifestation of psychologically based issues—there are many environmental and inherited, allergenic components to this condition—but this book helps you explore the emotional aspects and ameliorate them. It’s really well written, too.”


___________. Yoga therapy and asthma. Available online: http://www.yogalinks.net/Articles/YogaTherapyAndAsthma.htm.


Abstract: Seven asthmatic patients having nocturnal symptoms performed a yogic maneuver called Kunjal. Definite improvement was noticed subjectively and objectively in six patients during the week Kunjal was performed, and improvement in symptoms persisted into the third week in five patients.


Abstract: Air flowing through a pipe exerts frictional stress on the walls of the pipe. Frictional stress of more than 40 N/m2 (velocity equivalent of air 113 m/s) is known to cause acute endothelial damage in blood vessels. The frictional stress in airways during coughing may be much greater, however, since the velocity of air may be as high as speed of sound in air. We suggest that high levels of frictional stress perpetuate airway inflammation in airways which are already inflamed and vulnerable to frictional stress-induced trauma in patients with asthma. Activities associated with rapid ventilation and higher frictional stress (e.g. exercise, hyperventilation, coughing, sneezing and laughing) cause asthma to worsen whilst activities that reduce frictional stress (Yoga “Pranayama,” breathing a helium-oxygen mixture and nasal continuous positive airway pressure) are beneficial. Therefore control of cough may have anti-inflammatory benefits in patients with asthma.


Abstract: The effects of two pranayama yoga breathing exercises on airway reactivity, airway calibre, symptom scores, and medication use in patients with mild asthma were assessed in a randomised, double-blind, placebo-controlled, crossover trial. After baseline assessment over 1 week, 18 patients with mild asthma practised slow deep breathing for 15 min twice a day for two consecutive 2-week periods. During the active period, subjects were asked to breathe through a Pink City lung (PCL) exerciser—a device which imposes slowing of breathing and a 1:2 inspiration:expiration duration ratio equivalent to pranayama breathing methods; during the
control period, subjects breathed through a matched placebo device. Mean forced expiratory volume in 1 s (FEV1), peak expiratory flow rate, symptom score, and inhaler use over the last 3 days of each treatment period were assessed in comparison with the baseline assessment period; all improved more with the PCL exerciser than with the placebo device, but the differences were not significant. There was a statistically significant increase in the dose of histamine needed to provoke a 20% reduction in FEV1 (PD20) during pranayama breathing but not with the placebo device. The usefulness of controlled ventilation exercises in the control of asthma should be further investigated.


Statistics on Yoga and Asthma:

Yoga Biomedical Trust 1983-84 survey of Yoga practitioners: number of asthma or bronchitis cases: 226; percent claiming benefits from Yoga: 88%.

In a 2001 survey of some of its members, the American Academy of Pediatrics found that of the 733 respondents, 55 percent said they recommended Yoga as part of an asthma treatment regimen.

From Women’s Health Alternative Medicine Report, Mar 1999, 1(3):1—No. of Americans with asthma: approx. 15 million, 4 million of whom are under 18 years of age. Much of the incidence of increase worldwide in recent years is attributable to the increase in pollutants that affect the structure and function of the lung directly. In the U.S. approx. $6.2 billion are spent on asthma annually; $1 billion of that just for medication. The death rate from asthma has increased significantly, doubling between 1978 and 1988, leveling off somewhat since then, but continuing to rise in people between 5 and 34 years of age. People in urban areas, especially New York and Chicago, have the highest death rates, and the African-American death rate is three times that of white counterparts. Several medical reports have linked the increased death rate to improper use of medications and, even more importantly, to the overuse of beta-agonist inhalers.

From “Puzzling rise in asthma deaths: Cases, fatalities increase despite smog reductions,” San Francisco Chronicle, July 3, 1996 (http://www-camra.ucdavis.edu/sfchron.html): According to the NIH, 14.6 million Americans had asthma in 1994. The number of asthmatics grew by 6.2 million between 1984 and 1994, an increase of 74%. According to the National Center for Health Statistics, annual asthma deaths grew 59%, to 5,680, between 1984 and 1994. Potential reasons for the increase are discussed in the Chronicle article.

From Archives of Pediatrics & Adolescent Medicine, 2002, 156:1042-1044, as reported by Ivanhoe Newswire, 21 Oct 2002: “Research shows about 40 percent of American adults use
CAM for health problems. In this study, 160 inner-city high school students with asthma were surveyed. Of those, they found 33 percent reported having weekly symptoms from their condition and 14 percent had daily symptoms. Overall, 80 percent of the students reported using CAM for asthma.

“According to the study, asthma is the most prevalent chronic disease affecting adolescents in the United States. The study authors believe it is important for physicians who treat adolescents to know 80 percent are using CAM. Only 54 percent of the students reported telling their physician about their use of alternative medicines.

The list of alternatives ranged from herbal teas to prayer to massages and rubs. Close to a quarter of all the adolescents reported using Jarabe 7, an herbal preparation commonly sold in Puerto Rican communities. About 60 percent of the study participants felt the alternative methods helped and they would try it again.”

Steinberg, Lois. *Iyengar Yoga Therapeutics*. Champaign-Urbana, Ill.: BKS Iyengar Yoga Institute of Champaign-Urbana. (See pp. 1-21.)


Abstract: OBJECTIVE: An increasing number of patients with asthma are attracted by complementary and alternative medicine (CAM). Therefore, it is of importance that scientific evidence about the efficacy of this type of therapy is regarded. METHOD: We searched the electronic databases Medline, Embase and the Cochrane Library for controlled trials and systematic reviews to evaluate the evidence of the most popular alternative therapies, i.e. acupuncture, homeopathy, breathing techniques, herbal and nutritional therapies. RESULTS: Claims that acupuncture is effective for the treatment of asthma are not based on well-performed clinical trials. The role of homeopathy in the treatment of asthma needs further evaluation. Breathing techniques, e.g. improved control of breathing by yoga, may contribute to the control of asthma symptoms, but due to the small number of controlled trials and due to the small number of patients it is not possible to make firm judgments. Herbal remedies cannot be recommended based on the available evidence. Recommendations for a diet high in vitamin C and marine fatty acids are not harmful, but evidence for clinically meaningful effects is scant. CONCLUSION: Up to now evidence is lacking that alternative forms of medicine are more effective than placebo in asthma. However, lack of evidence does not always mean that treatment is ineffective, but it could mean that effectiveness has not been adequately investigated. High quality research as in conventional therapy should be fostered in complementary medicine.


Sudha, R. Nagarathna, H. R. Nagendra, and S. Telles. Effect of single and alternate nostril breathing in bronchial asthma. Submitted to *British Medical Journal* by Swami Vivekananda Yoga Research Foundation.

Includes: Breathing exercises, Sithilikarana Vyayama (loosening exercises), Yogasanas, Pranayama, Meditation (Dharana, Dhyana), and Kriyas


___________. *Yoga for Asthma* video. Bangalore, India: Swami Vivekananda Yoga Research Foundation.

**Take a deep breath! Have some fun! United Kingdom wakes up to the fact that Yoga can aid asthma patients.** *Yoga Life*, Oct 1999, 30(10):7-9. (On Avril Berry’s Yoga Bears therapeutic program for children with asthma.)


Abstract: Eleven patients with severe chronic airways obstruction were given training in yogic breathing exercises and postures. A matched group of 11 patients were given physiotherapy breathing exercises. Both groups of patients were followed up at monthly intervals for nine months with pulmonary function tests, tests of exercise tolerance, and inquiry into their symptoms. After training in yoga the mean maximum work increased significantly by 60.55 kpm; whereas no such rise occurred after training in physiotherapy. This objective improvement was associated with symptomatic improvement in a significantly higher number of patients given training in yoga.


**Telles, S.** Shifts in the autonomic balances: An exploration of the beneficial effects of an integrated approach of yoga therapy in bronchial asthma. National Conference on Yoga Therapy for Respiratory Diseases, New Delhi, India, Mar 1993.


**Therapeutic yoga for asthma and allergies [Integrative Yoga Therapy approach].** *Spirit of Healing Yoga Therapy Journal.* Article available online: http://www.iytyogatherapy.com.


Abstract: Adult asthmatics, ranging from 19 to 52 years from an asthma and allergy clinic in a university setting volunteered to participate in the study. The 17 students were randomly divided into yoga (n = 9) and nonyoga control (n = 8) groups. The yoga group was taught a set of breathing and relaxation techniques including breath slowing exercises (pranayama), physical postures (yogasanas) and meditation. Yoga techniques were taught at the university health center, three times a week for 16 weeks. All the subjects in both groups maintained daily symptom and medication diaries, collected A.M. and P.M. peak flow readings, and completed weekly questionnaires. Spirometry was performed on each subject every week. Analysis of the data showed that the subjects in the yoga group reported a significant degree of relaxation, positive attitude, and better yoga exercise tolerance. There was also a tendency toward lesser usage of beta adrenergic inhalers. The pulmonary functions did not vary significantly between yoga and control groups. Yoga techniques seem beneficial as an adjunct to the medical management of asthma.

Abstract: Yoga Breathing Techniques (YBT) have been claimed to be beneficial in patients with asthma during acute bronchospasm. This study was undertaken to verify this claim under controlled conditions using objective data. Six adult asthmatics (4 female, 2 male) in the age range of 23 to 48 years (mean age 34 years) volunteered to participate in this study. All the volunteers were taught YBT by a senior Yoga instructor over 2 sessions and were instructed to practice these sessions daily with the help of a prerecorded guiding tape over a period of 2 weeks. Subjects acted as their own controls. During the “control day,” their baseline vital signs were measured, including pulse rate (PR), blood pressure (BP), peak flow measurements (PEFR), and spirometry (PFT). They all then underwent exercise testing by climbing up and down 14 steps indoors with controlled temperature and humidity. Serial PFT, BP, and PR were measured and recorded at 1 minute, 7 minutes, and 15 minutes post exercise. On the “control day,” subjects sat on a chair resting after exercise. They were treated by bronchodilator aerosol if their PFT dropped 30% or more from their baseline values or if they complained of increasing difficulty in breathing during that period. On the “Yoga day,” subjects underwent similar baseline studies as well as exercise testing as outlined above, and all the subjects were requested to perform the YBT immediately after they had completed their exercise test. A drop of 20% in FEV1 (one of the PFT parameters measured) was considered as being consistent with exercise induced bronchospasm (EIB).

Three out of 6 subjects on the “control day” needed bronchodilator nebulizer treatments to relieve their EIB, whereas only 1 out of 6 subjects on the “Yoga day” needed a nebulizer treatment. The average time for the PFT to return to baseline from the post-exercise drop was shorter (18 mins. vs. 24 mins.) on the “Yoga day” compared to the “control day.” Five out of 6 subjects subjectively felt better after the YBT compared to none on the “control day.”

Conclusion: Yoga Breathing techniques (YBT) can be useful in relieving mild attacks of asthma.


Yoga beats asthma. *Yoga & Health*, Sep 2003, pp. 8-10.


Yoga Biomedical Trust. Asthma classes. URL: http://freespace.virgin.net/yogabio.med/ (click on “Yoga Therapy & How to Try It,” then click on “Index-Alphabetical,” then click on “Asthma”).


The Yoga for Health Foundation. Yoga for Breathing Disorders classes. For more information, contact: The Yoga for Health Foundation, Ickwell Bury, Ickwell Green, Biggleswade, Beds. SG18 9EF, Great Britain, tel: 01767 627261, fax: 627266, URL: http://www.yogaforhealthfoundation.co.uk/remedialyoga.htm#breathing.


The Yoga Science Box© was written after a pilot program with K-12 teachers in the San Francisco Unified School District. Program content complies with California Department of Education curriculum guidelines.

The 1999-2000 Yoga Science program includes Yogasthma©: Seven Steps to Asthma Control. It is designed to empower the children with the knowledge and skills to control their asthma. It includes yoga breathing and stretching exercises, an indoor garden to produce fresh air and a series of fun workshops conducted with St. Luke’s Hospital.

Yoga therapy [for asthma]. Article available online: http://www.asthmacure.com/Therapy/asthma_yoga.htm.

“The Asthma patients have a strong feeling that Asthma is incurable and that they will die. So Roopa starts treatment with counseling, two sittings daily for one hour to build confidence and change the patient’s mindset.

“Roopa [Muralidhar, a Yoga and Naturopathy expert] said Asthma and constipation go together. Asthmatics will have constipation, cough, Vaatha and Pitta. In three sittings, this will be cleared. Through Shakti Kriyas, nose and throat are cleared.

“The Kriyas are:

“* Jala Neethi: Nose will be cleaned through Jala Neethi where the patient is asked to suck salt added luke warm water through nose.

“* Suthra Neethi: Through nose a tube is inserted to throat and through light massage throat is cleaned.

“* Vamana Dhavathi: Salt added water is given to drink. Patient will vomit. This will help in removing 75 per cent of mucos.

“* Vastra Dhoti: 3-metre long 4 inch breadth thin cloth soaked in water is asked to swallow. In between the patient is asked to drink water. Once it is fully swallowed, after 5 minutes, it is slowly pulled out. It brings all “Kalmasha” stored in intestines.

“* Shanka Prakshalana Kriya: Patient is asked to drink half bucket of water added with salt. It will serve as purgative. He will have 8-10 times loose motion.

“Now all the Kalmasha related to Asthma is removed. Simultaneously, patient is taught Yoga exercises—Pranayama, Dhyana, Ajjapajapa—relaxing techniques. Music (Naada Yoga) will also help to keep calmness.

“Tips:

“* Stop taking Bakery items and oily items that produce Cougha (Mucous).

“* Massage at umbalicus and spinal cord that helps producing warm. * herbal tea is given made up of Tulasi, Viledele (bettle-leaf), Pudina, Kottambari.

“* South Indian normal diet, fruits, raw vegetables help controlling weight.

“Roopa said generally asthmatics are stout because of medicines they take earlier. Yoga exercises will help reducing the weight.

“Besides Pranayama, Bhujangasana, Supta Vajrasana, Sashankasana and Naadishoda Pranayama will cure Asthma completely.”


**Of Related Interest**


Abstract: Life begins and ends with breath. Slight bodily changes are brought about by alteration in the mechanisms of breath. In addition, mental changes are also influenced by breath. Our general condition of well-being is dependent upon the rhythmic cycles of breathing within us. Similarly, emotions change the rhythm of breath and when we become overexcited, then we lose control over the breath. By gaining control of the breath then we gain mastery of mind and body. Not only that, we also establish a connection with the world around us, of which we are part, through the breath.

Two specific healing initiatives based upon breath are used as illustration of breath both as a subtle organizing property and as a material manifestation. The first example is the use of breath through singing to intentionally organize the physiological abilities of another person as they recover from coma. Singing is literally the intentional use of breath to heal realized through a particular therapeutic form, which is improvised music therapy. A fundamental property of breathing is that it has rhythm. In musical terms, rhythm has to have the property of intention otherwise it would be simply cyclic repetition or pulse. The second healing initiative is that of Qigong Yangsheng for the treatment of asthma. Breathing is used here also as an intentional activity, this time by the patient to improve his or her own breathing abilities and to heal what is essentially a breathing problem, the material manifestation of air-flow. In this latter example, the healer acts as a teacher and guide for the sufferer to influence her own breathing.


**Cadwalladr, Carole.** Failure to clean worsens asthma. *The Daily Telegraph*, July 29, 1997. (In addition to cleanliness, this article also mentions that the National Asthma Campaign in Great Britain will be assessing whether complementary therapies like yoga can ease symptoms of asthma.)

From Belleruth Naparstek’s Health Journeys website (www.healthjourneys.com): “A pilot study in Venezuela on 35 asthmatic children shows that 6 months of psychosocial intervention, teaching them relaxation, guided imagery and self esteem techniques, created impressive reduction in their asthmatic reactions. Nineteen children were assigned to the intervention group, and 16 to the control condition. Both groups received conventional treatment. During the 6 months of the study, the intervention group experienced significantly fewer asthmatic episodes, less use of bronchodilator medication and improved pulmonary function when compared with 6 months before the intervention. In addition, this group had a significant reduction in IgE responses against primary allergens, an increase in NK (natural killer) cells, along with other impressive changes in surface markers—in fact, these became similar to those of non-asthmatic kids from the same vicinity. None of these changes were seen in the controls.”


**Complementary therapies for asthma.** In *Alternative & Complementary Therapies*, Oct 1998, 4(5): 296-297, Jonathan Wright, M.D., of Kent, Washington, claims that 50% of the asthmatic children he treats with 1,000 mg of hydroxocobalamin (a natural form of B12) per day are no longer wheezing after 30 days of treatment. Nearly a dozen more practitioners and their recommendations for treating asthma, with everything from vitamins to herb to massage to chiropractic adjustments, are also included in this article.


Abstract: Breathing techniques are used by a large proportion of asthma sufferers. This systematic review was aimed at determining whether or not these interventions are effective. Four independent literature searches identified six randomized controlled trials. The results of these studies are not uniform. Collectively the data imply that physiotherapeutic breathing techniques may have some potential in benefitting patients with asthma. The safety issue has so far not been addressed satisfactorily. It is concluded that too few studies have been carried out to warrant firm judgments. Further rigorous trials should be carried out in order to redress this situation.


Girodo et al used methods for deep diaphragmatic breathing training. These consisted of 18 progressively more difficult physical and respiratory exercises designed to build up the abdominal musculature. The aim was to increase the transverse diameter of the thoracic cage, which would enable increased capacity for maximum lung efficiency during expiration. Emphasis was placed
on diaphragmatic respiration by the using and strengthening of abdominal, dorsal and oblique muscles.

**Hale, Teresa.** *Breathing Free: The Revolutionary 5-Day Program to Heal Asthma, Emphysema, Bronchitis, and Other Respiratory Ailments.* Harmony Books, 1999. (Based on the work of Konstantin Buteyko of the former Soviet Union.)

**Ivanhoe Newswire.** Harmonica therapy. Ivanhoe Broadcast News (www.ivanhoe.com), Mar 2001. For more information contact: Samantha Kearns-O’Lenick, Media Relations, Florida Hospital, 616 E. Rollins St., Suite 103, Orlando, FL 32803, 407-303-1917. (Using the harmonica as a successful form of breath therapy for those with asthma and emphysema.)


**Liebert, Mary Ann.** Natural alternatives for the treatment of asthma. *Women’s Health Alternative Medicine Review,* Mar 1999, 1(3):1-4. (Examines recent findings on antioxidants, vitamin B12, and herbal medicines.)

**Mansfield, John.** The asthma epidemic. Available online: http://www.positivehealth.com/ (click on Back Issues; then click on No. 25).


Abstract: A chronic inflammatory disorder of the respiratory airways, asthma is characterized by bronchial airway inflammation resulting in increased mucus production and airway hyper-responsiveness. The resultant symptomatology includes episodes of wheezing, coughing, and shortness of breath. Asthma is a multifactorial disease process with genetic, allergic, environmental, infectious, emotional, and nutritional components. The underlying pathophysiology of asthma is airway inflammation. The underlying process driving and maintaining the asthmatic inflammatory process appears to be an abnormal or inadequately regulated CD4+ T-cell immune response. The T-helper 2 (Th2) subset produces cytokines including interleukin-4 (IL-4), IL-5, IL-6, IL-9, IL-10, and IL-13, which stimulate the growth, differentiation, and recruitment of mast cells, basophils, eosinophils, and B-cells, all of which are involved in humoral immunity, inflammation, and the allergic response. In asthma, this arm of the immune response is overactive, while Th1 activity, generally corresponding more to cell-
mediated immunity, is dampened. It is not yet known why asthmatics have this out-of-balance immune activity, but genetics, viruses, fungi, heavy metals, nutrition, and pollution all can be contributors. A plant lipid preparation containing sterols and sterolins has been shown to dampen Th2 activity. Antioxidant nutrients, especially vitamins C and E, selenium, and zinc appear to be necessary in asthma treatment. Vitamins B6 and B12 also may be helpful. Omega-3 fatty acids from fish, the flavonoid quercetin, and botanicals Tylophora asthmatica, Boswellia serrata and Petasites hybridus address the inflammatory component. Physical modalities, including yoga, massage, biofeedback, acupuncture, and chiropractic can also be of help.


**Psychosomatic Medicine,** 1992, 59:201ff., contains an article by Thomas Creer and Cynthia Stout on training asthmatics to detect resistance to air flow caused by constricted air passages in time to prevent an attack. [A summary of this article is available online at http://www-camra.ucdavis.edu/trainasthma.html.]


Abstract: Breathing retraining is used increasingly throughout the world by many patients with asthma in addition to their usual medical care. We undertook a systematic review of the literature in order to determine the effectiveness of breathing retraining in the management of asthma. Six randomised-controlled trials were identified that involved breathing retraining in asthma. Due to the variation in reported trial outcomes, limited reporting of study data and small number of included trials it was not possible to draw any firm conclusions as to its effectiveness. However, outcomes that were reported from individual trials do show that breathing retraining may have a role in the treatment and management of asthma. Further large-scale trials using breathing retraining techniques in asthma are required to address this important issue.


**Relief to asthmatics.** *The Hindu,* 07 Sep 2000. (On the physiological benefits of deep breathing for asthmatics.)


“Over 14 million Americans, or 7.2% of the adult population, reported having asthma in 2000 . . . and cost the nation an estimated $12.7 billion during 1998 . . . Based on responses from more than 180,000 people, the overall prevalence of lifetime asthma was 10.5%, and the overall prevalence of current asthma was 7.2%, indicating that an estimated 14.6 million American adults currently have asthma . . . Blacks reported a higher prevalence of current asthma (8.5%) than whites (7.1%) and persons of other race/ethnicity (5.6%).”

**Stalmatski, Alexander.** *Freedom from Asthma: The Revolutionary 5-Day Treatment for Healing Asthma With the Breath Connection Program.* Three Rivers Press, 1999. (The author trained with Konstantin Buteyko and brought Buteyko’s Breath Connection Program to the Hale Clinic in London.)


**Ongoing Research**

**Judith L. Balk, M.D.**
Research Assistant Professor
Division of Gynecologic Specialties
University of Pittsburgh
Pittsburgh, PA
Conducting research at Magee-Women’s Hospital on Yoga and peak flow rates in pregnant asthmatics. Funded by NIH (NCCAM).

**Geoffrey Barkley, Ph.D.**
Department of Social Work
University of Virginia Medical Center
1215 Lee Street
Charlottesville, VA 22903
gsb9b@virginia.edu
Is in the process of developing a pilot study for lifestyle intervention with asthmatics that would include Yoga practices. Contacted IAYT 5/24/05.

**Alyse Behrman, M.P.H.**
Study Manager
alyse.behrman@yalegriffinprc.org
Tel.: 203-732-1368
Conducting a CDC-funded study on asthma (URL: http://www.yalegriffinprc.org/asthma.html). It is a double-blind randomized controlled trial. Participants must have mild to moderate asthma, be on asthma medications, be over 18, not smoke, and not be pregnant to be involved. Participants are randomized to one of 2 groups: an Iyengar yoga class or a stretching control class. The class is held 2 nights a week for 4 weeks. Participants are given print and audio materials (and yoga props, if in the yoga group) to practice with at home. After the class is over, participants are expected to continue practicing the exercises they learned in class at home. They come in every 4 weeks for the next 3 months for a follow-up assessment, which consists of a
spirometry (breathing) test and filling out questionnaires on their asthma symptoms. They also keep a diary of their asthma symptoms and peak flow measurements for one week out of each month they are involved in the study. The 4th cohort is running right now (October 2002) and they are recruiting for a 5th. The study should be completed by late Spring 2003.

**Dr. Jasmin Diwan and Dr. Chinmay Shah**  
Department of Physiology  
Shree M. P. Shah Medical College  
Jamnagar, Gujarat 361008  
India  
dr_jasmin@rediffmail.com  
Planning research on the effect of Yoga on the respiratory system. Contacted IAYT 12/19/02.

**David L. Katz, M.D., M.P.H., F.A.C.P.M.**  
Director, Yale-Griffin Prevention Research Center  
Griffin Hospital  
130 Division St.  
Derby, CT 06418  
katzdl@pol.net  
Tel.: 203-732-1265

**Prem Kumar, M.D., M.R.C.P., F.A.C.P.**  
Professor of Medicine  
Chief, Section of Allergy and Clinical Immunology  
Director, Immunocytogenetics Laboratory  
Louisian State University School of Medicine, N.O.  
Conducting research on the effect of Yoga on asthma at Tulane University. Funded by NIH (NCRR).

**Ramesh Manocha, M.D., Director**  
Meditation Research Program  
Royal Hospital for Women, Sydney, Australia  
R.Manocha@unsw.edu.au  
Dr. Manocha is Barry Wren Fellow at the Royal Hospital for Women, where he initiated the Meditation Research Program in the hospital’s Natural Therapies Unit. Using the Sahaja Yoga meditation technique, the research has shown promising results for the treatment of asthma, headache, menopause and depression.

**P. K. Vedanthan, M.D.**  
Northern Colorado Allergy & Asthma Clinic  
1124 East Elizabeth  
Fort Collins, CO 80524  
PKV1947@yahoo.com  
Ongoing research on Yoga and asthma and Yoga and COPD. IAYT contacted Dr. Vedanthan 8/02.