

ASTHMA

Structural Yoga Therapy Specialty Paper

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1 - Case study

a – Initial intake

BP is a 54 year old woman. She started yoga after the sudden unexpected death of her husband in 2001. She reports she was born with asthma. She later had medicines “which were horrible,” and made her feel like she was “on a see saw.” She says she was on a huge dose of steroids, but “I want to know what I am taking and why.” She reports her asthma now “does not affect me as long as I take my current medicines. I almost never get asthma unless I am sick. Then I start to feel the effects. I don’t wheeze; but it is hard to breathe. Tests show I don’t exhale as much compared to how much I inhale.”

She attends one yoga class 4-5 days a week. She saw Mukunda once. Mukunda recommended she begin breathing with even breaths, then as she increased her repetitions, do longer exhales. She reports she did not continue with his routine at home because she felt it got incorporated into her yoga classes.

X-rays showed that one lung was not clearing up. The MD increased her medicines. She now takes a corticosteroid, which is a natural anti-inflammatory substance found in the body. This helps to treat asthma by decreasing the airway inflammation. She also takes a long-acting bronchodilator (opens narrow pathways) to prevent and relieve bronchospasm, making it easier to breath.

b - Physical assessment

5-20-04 Initial SYT Exam

3-17-05 Final SYT Exam

Bodyreading in standing

Right scapula elevated and protracted.

Right scapula in normal alignment

Right SI joint did not move.

Right SI joint moving normally (up ¼ inch)

Thoracic spine forward and rounded

T-spine minimally forward and rounded

ROM lower body prone

Knee: flexion left 140, right 140 with tight hamstrings bilaterally (N=135-150).

Same
Hamstrings no longer tight

ROM upper body supine

Shoulder

External rotation left 82, right 86 (N=90).

Same

Muscle tests lower body supine

Hip: flexion with rectus femoris/psoas

left 3, right 4. Same
Hip flexors with abdominis rectus left and right 2. Same

Muscle tests lower body prone

Spinal muscles: lower/upper erector spinae,
all 3. Same

Muscle tests upper body supine

Shoulder External rotators-
post deltoid, teres minor, infraspinatus left 3, right 4. Left 5, right 5

Respiration

Breathing rate:
3 second inhale, 4 second exhale 5 second inhale, 8 sec exhale

Seated in comfortable Sukhasana
(Crossed Legs Posture) she is observed
in kyphotic posture (forward slumped
thoracic spinal flexion) with minimal
thoracic extension on inhale. Minimal kyphotic posture
Moderate thoracic extension
on inhale
No spinal groove C4-T8 Same

c – Summary of Findings

Joint to mobilize:

1. SI joint

Muscles to stretch:

1. Lower and upper erector spinae
2. Hamstrings (biceps femoris, semitendinosus, semimembranosus)
3. Left shoulder external rotators (post deltoid, teres minor, infraspinatus)

Muscles to strengthen:

1. Hip flexors (rectus femoris, psoas) with abdominis rectus
2. Spinal muscles (lower, upper erector spinae)
3. Shoulder external rotators (posterior deltoid, infraspinatus)
4. Intercostals
5. Diaphragm

d – Recommendations

May 24, 2004

1. SI stabilization exercises to mobilize the SI joint properly.
12 repetitions, 3 times a week.

2. Joint freeing series coordinated with rhythmic breathing. (To improve circulation of blood and prana as stated in SYT text (p 17) and to “check in with your body.” (p 121). Six repetitions per movement, three times a week.
3. Dandasana (Stick) to stretch passive hamstrings, open (stretch) chest, externally rotate the shoulders (stretch and strengthen). Strengthen psoas, rectus femoris. OK to flex knees. Thoracic extension is focus (strengthen lower and upper erector spinae). Six inhales/exhales, at least three times a week.
4. Bhujangasana (Cobra) to strengthen erector spinae. Thoracic extension is focus. Six inhales/exhales at least three times a week.
5. Urdhva Prasarita Padasana (Upward stretched legs) to stretch passive hamstrings. Strengthen psoas, rectus femoris. Hip flexion is focus. She cannot maintain hip flexion. Therefore instructed to do six repetitions pumping legs towards chest dynamically. Exhale as legs move towards chest, inhale as legs move away from chest. At least three times a week.
6. Salabhasana (Locust) to strengthen erector spinae. Thoracic extension is focus. Six inhales/exhales, at least three times a week.
7. For all poses, breathe through nose,* inhale, think about opening up the chest. She has focused more on diaphragm, so chest is sunken and caved in appearance. Recommend for her, more motion in chest vs low back. (SYT Q & A dated 1-23-05 states chest breather indicates an overactive upper intercostals motion. However, in BP’s case, she is not using intercostals efficiently).

* Breathing through the nose slows down the breathing rate. The mucous membrane lining filters, warms and moistens incoming air.

June 3, 2004, two weeks later, based on discussion, given exercises below to strengthen intercostals and diaphragm. Recommendations:

1. Intercostal breathing. Seated, hands push ribs on exhales, (hands should come closer together) ribs push hands on inhales (hands should move further apart). Once motion is understood, progress to intercostal breath without use of hands. Six repetitions, at least three times a week.
2. *Variations to Structural Yoga Therapy Asanas with intercostal breathing:
 - a. Jathara Parivartanasana (Supine Abdominal Twist). Left leg over right, left hand pushes ribs on exhale. Hand pressure is below the sternum at ribs 7-10 under the pectoral muscles. Slightly flex spine as exhale. Ribs push hands on inhale (hands resist and ribs expand the hands). Reverse legs and hand. Six repetitions, at least three times a week.
 - b. *Apanasana (Energy Freeing). Inhale, arms straighten as knees move slightly away from abdomen. Relax, and expand abdomen. Exhale, elbows bend a little, knees move closer to abdomen, abdomen contracts. Six repetitions, at least three times a week.
 - c. *Savasana (Corpse). Relaxed hands placed on abdomen. Inhale and expand abdomen into hands. Inhale lifts the hands. Exhale abdomen contracts, hands sink. Focus breathing below the hands. Then move hands to side and follow the breath. Maintain breath awareness and then sink into Savasana. This strengthens the diaphragm and brings awareness to full torso breathing, stimulates the parasympathetic nervous system into relaxation. Six repetitions, at least three times a week.

* A person with advanced asthma should not do exercises supine, but instead do them seated, because fluid could fill in the lungs. (BP does not have advanced asthma).

June 17, 2004, two weeks later, based on discussion, recommendations:

1. BP reported that abdominal twists with intercostal breathing “is weird feeling.” She prefers supine and seated postures. Jathara Parivartanasana (Abdominal Twist) deleted from her yoga routine since do not want to cause anxiety during poses.
2. Mukunda recommended Kapalabhati. The following is Kapalabhati instructions. Rapid abdominal breathing stimulates lung tissues, relaxes chest muscles and energizes the body. With each abdominal breath, add a sharper abdominal contraction. Pacing is one per second, steady and slow. Three sets: first set 15 seconds, second set 20 seconds, third set 25 seconds. 45 second rest between sets. After final set, slow exhale. Inhale very slowly and exhale even slower. Then sit quietly about 45 seconds, eyes closed and notice effects of calmness.

July 15, 2004, one month later: she reports she does not take time during the day to do specific recommendations, except kapalabhati. “I feel like all these suggestions get incorporated into the classes I attend.”

Dec 9, 2004, five months later:

1. I gave her Breathe Deep Tea on the recommendation of a fellow SYT student. This tea has licorice, basil, eucalyptus, ginger. She says the tea tastes good, but she can not tell if this helps her or not. “I don’t have asthma symptoms since I take medicine, so I do not notice a difference.”
2. She reports she is no longer attending any formal yoga classes since the price of classes has increased. She is following a Shiva Rea DVD three times a week. She is mindful of incorporating what we have discussed when she follows the DVD.
3. She is primarily following a vegetarian diet (occasionally eats meat) and has eliminated all dairy products. She is not strictly following the Ayurveda diet. However, “when I cook I use the spices that the ayurvedic guy recommended. I make fruit smoothies in the morning with the sweet spices he recommended.” She is following a “Fit for Life” diet. She says this diet recommends “70-80% of what you eat is raw fruit and vegetables; never eat a starch with a protein.”

March 17, 2005, three months later: Seen for final evaluation. She had intestinal flu the previous two weeks so has not practiced any yoga, but now feels well enough to be tested for final evaluation. We discussed other asthma management recommendations from the Bihar, India yoga text. (5) This includes:

1. Neti pot to remove obstructions from the nasal passages to facilitate nasal instead of mouth breathing. She reports she tried this once. “I had to get in the shower because the salt pours everywhere all over. I felt like my nose swelled up inside so I quit.”
2. Drinking black coffee as a bronchodilator. The heat from the coffee has a soothing effect on the stomach, throat and lungs. She reports she tried this once when she was in the desert, and “it did not help at all.”
3. Directing positive thoughts to the lungs, ribcage, spinal cord, vertebrae and nervous system to send healing energies to these areas. “Yes, I try to do this.”
4. Relaxation as the key to curing asthma. This can be done through natural harmonious living combined with relaxation, exercise and a positive attitude to life combined with yoga and meditation. “I try to relax as best as I can.” She is still mourning the loss of her husband, and especially feels lonely at night. She is trying to connect with more people and volunteer organizations to keep her busy

and to keep her mind off her loss. Her married daughter with three children has Multiple Sclerosis which is getting worse. She frequently visits her daughter to help with the grandchildren. She will soon (Sept 05 in six months) participate in a Multiple Sclerosis fundraiser walk as a support person and has been training for the walk.

5. The following techniques are irrelevant to her. These techniques should only be done with expert guidance: Kunjal kriya (drinking warm salty water and regurgitating it); sutra neti (catheter passed through one nostril and pulled out through the mouth, then repeated for the other side); vastra Dhauti (swallowing a strip of fine muslin 2.5 centimeters wide and up to three meters long. "If the strip of cloth is soaked in midstream urine before swallowing, it is said to be even more powerful.") (5) p 37. Mukunda stated these recommendations do work and he had experience eliminating asthma with vomiting regularly for one client. "They are last resorts but most effective. I have done all of them except swallowing cloth."

e – Summarize the results of your recommendations

She mindfully followed the intercostal breathing exercises and kapalabhati. She did not strictly follow through with the other recommended asanas in a home practice. She stated she was able to incorporate these specific asanas in the yoga classes she attended, and when following her DVD yoga tape.

Breathing rate improved two seconds on inhale and four seconds on exhale. She reported when she last saw her MD for her asthma, the MD told her that her exhale has improved but is not normal. However, the MD thinks she is at the normal rate expected for her.

Per our phone conversation one week following her final evaluation, she said she would like to establish a yoga routine based on her needs. She was instructed that the specific asanas given to her were based on evaluating her ROM and muscle strength. "Oh, I guess I should concentrate on doing those."

Structurally, the right scapula and right SI joint returned to normal alignment. The thoracic spine is less forward and rounded (thoracic extension minimally improved), hamstrings (biceps femoris, semitendinosus, semimembranosus) are no longer tight, shoulder external rotators (posterior deltoid, infraspinatus) now have normal strength (left improved two muscle grades, right improved one muscle grade). No strength change noted in hip flexors with abdominis rectus, or lower and upper erector spinae. I suspect since these asanas were more challenging, she decided not to do them.

Mukunda questioned whether SYT had helped her to change vs. yoga in general:

1. She told me she did not follow my recommendations in a specific practice at home, but incorporated SYT suggestions into class and when watching her DVD tape. She did enjoy and was trying to more regularly do JFS, and kapalabhati. I cannot say for sure that SYT was definitely responsible for the above changes she made. I can say that she did look forward to our meetings, as she got attention and TLC from me, and a nudge to incorporate SYT into her daily routine. Not only did we discuss asthma and SYT, but we also talked about her personal issues (death of her husband, daughter with MS).

Through the course of each meeting we also smiled and laughed, and we hugged hello and goodbye.

2. Asthma is a more complicated condition compared to a musculo-skeletal joint problem. I believe that SYT can help a person with asthma, but this may require a more experienced SYT practitioner, rather than a beginner. The JFS, breathing and relaxation techniques mentioned in this paper are applicable to people with asthma and other anxieties/stresses.

3. I am not sure if someone with asthma is more resistant to change, as she has had asthma and been on medications since early childhood. I would recommend that more experienced SYT practitioners do case studies on asthmatics to add to our understanding of how SYT can help this condition.

When this paper was presented at our April retreat, I received new insights from Mukunda and acted on them as follows:

1. For this particular type of person, keeping an ongoing relationship with this person is most effective. The need for tapas (discipline rather than heat) is crucial. The need to do the exercises daily, even if all she does is the JFS and kapalabhati, is crucial. The JFS helps to free up emotions; kapalabhati is a kriya to purify the respiratory system.

Following the April retreat, I met with her once a week for the next two weeks to provide positive reinforcement about doing the JFS and kapalabhati. More important to her was just our time spent together. We discussed her husband, family, and overall sense of her well-being. I also phoned her 2x/wk to “check in.”

2. For her, this is a kapha imbalance dealing with her heart. The structural yoga therapist must persist at giving things to her. A kapha imbalanced personality does not understand what is good for her. Her kama (sensual pleasure) is blocked with a kapha imbalance. The structural yoga therapist must give her hugs and support. It is not the client’s fault that she cannot let the love in. She is dying for love because she does not know how to receive it. The structural yoga therapist should listen to what she sees, not what the client says or does. The client is blocked to receiving goodness. The structural yoga therapist must ask, what makes her say “that was good”?

Following the retreat, I mentioned to her that she may benefit from an integral yoga guided relaxation tape for yoga Nidra. She responded that she has relaxation tapes and listens to them frequently. She especially enjoys them when she has trouble sleeping. I asked if we could listen to a tape together; so she played a tape meaningful to her. I gave her positive reinforcement in finding a way to help calm herself. I thanked her for sharing the tape with me, and told her this was a good thing to continue to do. She has since told me that she listens to relaxation tapes at least twice a week.

3. Her vata is in her kapha area. She should do exercises that bring her biological vata home, such as relaxation poses, kapalabhati, JFS. Svadhyaya (self study/observation aided through reflection on the scriptures), reading the yoga sutras, will help bring vata back to her home. Energy techniques on the second kosha and scripture study on the third kosha will bring vata back to its home.

Following the retreat, I mentioned to her that a daily devotional practice would also benefit her. She likes attending lectures on the sutras and likes attending kirtans, but she said she does not feel comfortable reading the sutras on her own. She had just returned from a Jewish meditation retreat which she loved. She is planning on converting to Judaism (she was pursuing this with her husband and is presently taking structured classes). I told her that my knowledge of sutras is basic, but I could share more of my Judaism with her, as I have done on numerous occasions with her, including having her to my home as my guest during Jewish holidays. We both attend the same synagogue, see each other frequently at temple Friday night services, at a monthly women's group, and weekly Hebrew lessons. I recommended a daily healing prayer which is sung at our temple every Friday night. She is familiar with this prayer, the Mi Sheberach. (see appendix). She agreed to recite this prayer daily. She has since told me that reciting this prayer daily "brings a sense of hope."

2- a - name and description

Asthma is an obstruction of the air flow either into or out of the lungs, or an inability of the lungs to efficiently exchange gases into and out of the bloodstream. (3) p 217

According to yoga tradition, asthma is linked to the digestive system. Improper digestion will lead to mucus and phlegm, which are produced in the stomach. This accumulates in the lungs. The accumulation occurs because structurally, breathing is inhibited due to weak respiratory muscles, rigid and inelastic structures of the chest and poor lung capacity. (3) p 217- 218

Attacks vary greatly from occasional periods of wheezing, slight labored or difficult breathing, to severe attacks that almost cause suffocation. Asthma can be classified into three types according to causative factors.

1. *Extrinsic asthma* is due to an allergy to antigens; usually the offending allergens are suspended in the air in the form of pollen, dust, smoke and automobile exhaust, and animal dander. More than half of the cases of asthma in children and young adults are of this type.
2. *Intrinsic or nonallergic asthma* is usually secondary to chronic or recurrent infections of the bronchi, sinuses, or tonsils and adenoids. There is evidence that this type of asthma develops from a hypersensitivity to the bacteria or, more commonly, viruses causing the infection. Attacks can be precipitated by infections, emotional factors, and exposure to nonspecific irritants.
3. *Mixed asthma* is due to a combination of extrinsic and intrinsic factors. (4) p 144

There is an inherited tendency toward the development of extrinsic asthma. It is related to a hypersensitivity reaction of the immune response. Secondary factors affecting the severity of an attack or triggering its onset include events that produce emotional stress, environmental changes in humidity and temperature, and exposure to noxious fumes or other airborne allergens. (4) 145

Normally, breathing is automatic, reflexive. The inhale phase is active, lasts about 2 seconds. The exhale phase is passive, lasts about 3 seconds. The normal rate of respiration for an adult is between 12 – 18 cycles per minute. (3) p 216. Dr. Nagendra from the Vivekananda Yoga Research Foundation reports that the average breathing rate per minute for a person with asthma is 23.4 breaths a minute. (7).

Inhalation muscles include the intercostals, diaphragm and accessory muscles (SCM, scalenes). When these muscles contract, the chest cavity “becomes deeper, longer and broader, and as a result air is sucked in. The relaxation of these muscles and the elastic recoil of the lungs forces the air out. . . When there is some obstruction to exhalation the expiratory process must become active. The wall of the abdomen contracts actively, forcing the diaphragm higher and pulling the ribs closer together than usual, forcing out additional air.” The muscles fatigue, mucus blockage builds up. This may increase breathlessness, poor lung function, anxiety or depression. (5) p 14-15.

b – gross and subtle body common symptoms

Asthmatic attacks are characterized by difficult or painful breathing and a wheezing type of respiration. The asthmatic usually assumes a classical sitting position, leaning forward so as to use all the accessory muscles of respiration. The skin is usually pale and moist with perspiration, but in a severe attack there may be cyanosis (bluish discoloration) of the lips and nail beds. In the early stages of the attack, coughing may be dry. As the attack progresses, the cough produces a thick, tenacious, mucoid sputum. (4) p 145

c - related challenges

Asthma is a chronic condition with an irregular pattern of remissions and exacerbations. Most asthmatics welcome the opportunity to learn more about their disorder and ways in which they can exert some control over the environmental and emotional events that are likely to precipitate an attack.

The asthmatic should avoid infections, nonspecific irritants such as cigarette smoke, emotional factors that trigger or intensify symptoms, and other factors that provoke attacks. Bronchodilators such as epinephrine and aminophylline may be used to enlarge the bronchioles, thus relieving respiratory distress. Other drugs that thin the secretions and help in their ejection (expectorants) may also be prescribed. A seriously ill asthmatic must receive special attention and medication to avoid excessive strain on the heart, and severe respiratory difficulties that can be fatal.

Some asthmatics develop a protective breathing pattern that is shallow and ineffective because of a fear that deep breathing will bring on an attack of coughing and wheezing. They need help in breaking this pattern and learning to breathe deeply to fully expand the bronchi and lungs.

They should be encouraged to drink large quantities of fluids. The extra fluids are needed to replace those lost during respiratory distress and seizures of coughing. The increased intake of fluids also can help thin the bronchial secretions so that they are more easily removed by coughing and deep breathing. Relaxation techniques can be very helpful, especially if they can find a method that effectively reduces tension. (4) p 145

3 - Ayurvedic assessment and Ayurvedic based yoga recommendations.

Mukunda class notes dated 3-14-04: Asthma is basically a kapha imbalance which causes allergies and congestion. So to treat an asthmatic, one should increase the tapas (heat), do headstands, eat pungent foods, and use a neti pot. Mukunda class notes dated 4-14-05: In general a person with asthma has increased mucous and increased kapha. If driven by pitta, this would lead to inflammation and bronchitis. The person has more vata if there is dryness. Most of the information on asthma focuses on kapha (mucous) so recommendations will increase pitta.

My particular case study client saw an Ayurveda practitioner. She was told her Prakruti (constitution she was born with) is Pitta 68%, Kapha 10%, Vata 22%. Her Vikruti (imbalances) are primarily vata, secondarily pitta/kapha. She has high prana as evidenced by insomnia, and high tejas as evidenced by being overly critical, low ojas as evidenced by chronic problems. To balance her Pitta she was instructed to use ghee with cardamom and cumin. This “caused a rattle in my throat, any milk products do, so I stopped and switched to goat’s milk. That did not help, so I stopped all dairy, and I have no throat rattle now.” She was told to use rose, coriander, cumin, fennel and turmeric, and to avoid spicy foods. She takes a spoon of chayvanprash (sweet jam paste of Indian gooseberry and herbs) “to balance and boost my immune system every day. He wanted me to self massage with oil and leave it on 20 minutes but I won’t do that.” She reports she was doing everything that was recommended, except self massage, and “I got pneumonia so I got angry. I did everything and still I got pneumonia.”

The Bihar, India School of Yoga classifies asthma “according to the predominant elements of the body – air, fire and water:

1. Air (vata) produces a dry asthma with coughing and wheezing but little mucus.
2. Fire (pitta) causes inflammation and produces asthma with bronchitis.
3. Water (kapha) is the most common form of asthma- a wet type with thick, heavy mucus accompanied by wheezing and coughing.

Asthma with a predominance of the water element often occurs in the cold months when the body builds up excessive amounts of mucus and cannot burn it off. That is, the body does not generate enough internal metabolic heat to handle the cold climate, and as a result mucus builds up and is not expelled from the body. This is combined with spasms of the bronchioles and bronchi (tubes of the lungs), preventing sufficient air getting out. Breathlessness, wheezing, gasping and coughing result.

This condition is aggravated by anything which produces mucus, such as cold, and excessively starchy foods (rice, sweets, milk products, etc). Ultimately this disease has its roots in the subtle body, i.e. the mind, as well as in the genetics of the body.” (5) p 10.

“According to Ayurveda, some of the causes of asthma are pollution, drinking very cold water, excessive sexual intercourse, excessive travel, excessive fasting, excessive use of spices, oil or tobacco, eating meat, heavy foods which are difficult to digest and fatty foods such as milk products, too many sweets, a strong blow to the chest and so on.

“The manifestations are pain in the chest, pain and constipation in the abdomen, lethargy, excessive dirt in the nasal passages, pain in breathing especially during the night.” (5) p 54

Ayurvedic treatments include: use a well-ventilated room, have warm food and drinks during the day, nothing cold. Apply heat to the chest to discharge phlegm. Eat a light evening meal so the asthmatic may sleep easier. Eat light foods during and after an attack i.e. grapes, raisins, apples, honey. In hot months take a cold bath and in cold months take a warm bath. Take open air walks in the early morning. Encourage perspiration with hot baths, saunas, sunbaths, blankets, hot drinks to remove phlegm and wind. "A good drink to give consists of equal parts of honey and ginger juice with some turmeric added. This removes phlegm and mucus and warms the body." (5) p 55

Herbs- for vata type asthma: bala, camphor oil rubbed on the chest, cardamom. For pitta type asthma: mullein, turmeric, red periwinkle, echinacea and dandelion root tea. For kapha type asthma: hot spices, apply cinnamon and eucalyptus oil, massage chest and back with mustard oil, balm of Gilead. (8) p 24

Diet and lifestyle changes- for vata type asthma: avoid raw, cold, rough and dry foods, nuts and dairy. Foods that help include moist, warm foods, sweet, sour and salty tastes. Increase fluid. Lifestyle changes include keep head, chest and back covered on cool days, avoid exposure to wind. Daily body sesame oil massage to add moisture and warmth. For pitta type asthma: avoid deep fried, red meat, spicy foods and sour, salty tastes. Foods that help include more fruits and vegetables, less meat and dairy; bitter, astringent and sweet tastes, drink water. Lifestyle changes include avoid eating after 10 pm. Meditation and breathing exercises to reduce stress and anger. For kapha type asthma: Avoid deep fried, oily, heavy foods, dairy, nuts, seafood, mucous creating foods, red meat, sour, salty and sweet tastes. Foods that help include warm rather than cold or raw food, astringent, bitter and pungent tastes, whole foods, lentils, hot water with honey. Lifestyle changes include daily exercise, keep chest, back and head covered on cold, wet and windy days, and avoid eating before 10 am and after 9 pm. (8) p 25

4 – common body reading

Typically the head will be forward, the shoulders and thoracic spine will be forward and rounded, (kyphotic) posture. Chest/heart area may be sunken. There is restricted chest and rib cage mobility. There is limited thoracic spine flexibility and tight pectoral muscles.

SYT p 103 Muscular imbalances revealed by posture:

Forward head has tight SCM and weak upper trapezius.

Round shoulders have tight pectorals and serratus anterior; weak middle and lower trapezius, and latissimus dorsi.

Kyphosis (hunchback) has tight rectus abdominis, pectorals and upper trapezius; weak thoracic erector spinae, middle and lower trapezius.

Ribcage tightness may be present. This affects tidal volume which is the amount of air you normally inhale and exhale when at rest. When tidal volume is decreased by ribcage tightness, there is a build up of carbon dioxide, or respiratory waste, in the bloodstream. Carbon dioxide irritates the nervous system, produces anxiety. (2) p 130-131

Fatigue and anxiety often accompany breathing difficulties. (2) p 136

Poor posture is caused by, and causes pranic disruption. (5) p 17

5 - contraindicated yoga practices

Avoid milk products as this produces increased mucous. Avoid starchy, processed foods. Avoid smoky environments as this irritates the respiratory tract. Yoga poses should not cause anxiety. People with asthma should modify improper diets; excessive physical exertion; lack of adequate physical exercise; poor posture; exposure to weather extremes, air pollution, tension and emotional stress. Asthmatics should avoid holding their breath or breathing through the mouth. Some asthmatics may need to avoid poses with a chin tuck as this could create difficulty breathing, i.e. sasangasana (rabbit).

6 - recommendations

a - therapeutic/free of pain

Develop a “yogic attitude . . . The person with asthma needs to make an honest self-appraisal to decide whether he really wants to be cured. He must then set his own health as a central priority in life. . . Set aside a fixed amount of time to practice each morning. . . The sufferer, who from a yogic point of view, is a self-healer, faces further tests of attitude and will. Old memories and volitions will begin to surface, bringing on tension and emotional suffering. These incidents may be a sign that cure is progressing. . . . The sufferer should remember that the most important thing is to remain aware all the times. . . Awareness at the simplest level is the noting of events without attachment or aversion. One ceases to be ‘the sufferer’ and becomes ‘the observer’, noting bodily changes, mental states, and feelings, without identifying with them.” (5) p 42.

Dr. Nagendra says the asthmatic must correct the inside. Do not say the problem is due to an outside source (e.g. pollution, spouse, work). We suffer because of our own design. Man is the maker of his own destiny. Asthma can be changed by changing our emotions. Once you change emotions, the problems on the inside will change the outside. (7).



“Yoga chair breathing to counter asthmatic attack. Taken from [A New Light for Asthmatics](#) by Dr. HR Nagendra and Dr. R Nagarathana.

When an acute asthma attack begins, sit on the floor in front of a chair.

1. Stretch the legs out under the chair, rest head and arms on the seat of the chair. Stretch through the entire body, toes to head, then relax from toes to head regionally.
2. Neck muscle relaxation:
 - a. Hold onto seat of chair, lift head, move head into extension and flexion slowly 5x
 - b. Repeat same movements, inhale deeply into extension, exhale into flexion 5x
3. Kneel in Vajrasana without support.
 - a. perform neck flexion and extension slowly 5x
 - b. repeat above, inhale on extension, exhale on flexion, 5x
4. Sasankasana while in Vajrasana
 - a. bend forward from the waist then backward (clasp hands behind back) 5x
 - b. repeat the above, exhale bending forward, inhale bending back, 5x
 - c. repeat the movements, chant “MMM” (Brahmari pranayama) while bending forward 5x
5. Stand in tadasana for about one minute
6. Tadasana (erect standing pose):
 - a. flex and extend neck slowly 5x
 - b. continue movement with inhale on extension, exhale on flexion 5x
 - c. repeat movements with breathing and Brahmari 5x
7. Pada-hastasana (forward bend) to Ardha chakrasana (backward bend) from tadasana
 - a. move into forward bend slowly, then to back bend 5x
 - b. repeat the above, exhaling into forward bend, inhaling into back bend 5x
 - c. repeat 5x using breath and use Brahmari on forward bend
8. Savasana
 - a. feel the abdominal movements 5 breaths
 - b. feel the breath movement 5 breaths
 - c. feel movement, breath, and use “AA” sound 5x

This should take 30-45 minutes initially. With practice, the time needed may be 20 minutes. Patients learn to relax their broncho spasm effectively, in most cases not needing drugs.” (8) p 26

Practice pranayama regularly after asana. Pranayama strengthens the lungs and nervous system and diminishes the possibility of future asthma attacks. Pranayama helps to master the body's energy systems, increases self confidence and mastery of mind. (5) p 39.

b - stabilize situation and make lifestyle change recommendations

Eliminate mucous forming foods. Establish a regular, healthy diet. Exercise to help the digestive tract move waste through the system. (5) p 28

Core ideas for respiratory conditions:

- a. Relax, alleviate and soothe the symptoms
- b. Develop the breath capacity for exhalation (see next paragraph)
- c. Achieve greater control of the diaphragm
- d. Where the breathing is structurally restricted, mobilize the rib cage
- e. Develop the capacity to expand the chest and abdomen on the inhale and pull in the belly on the exhale (see below) (3) p 218

To develop the exhale:

- a. Breathing re-education. Abdomen out on inhale (abdomen relaxed), pulled in on exhale (abdomen contracts)
- b. Improve the ability to deepen and control the exhale. Exhale is a technique of relaxation. Use simple postures that facilitate and help the diaphragm move fully upward (see poses listed below)
- c. Hold the breath after exhale (3) p 219

To develop the inhale:

- a. For restricted chest mobility, progressively expand the structures of the rib cage
- b. Strengthen the respiratory muscles (diaphragm, intercostals, abdominals)
- c. Deepen the capacity for the inhale
- d. As breath control improves, use stronger positions that place a greater demand on breathing capacity
- e. Then hold the breath after inhale (3) p 225

Poses: For anxiety, breathing awareness to different body parts for stretch, flexibility, strengthening.

- a. Relaxation poses with chest elevated to decrease anxiety. (Savasana/ Corpse Pose) (2) p 136
- b. Poses that open the upper respiratory tree which includes the throat, bronchial tubes, and upper lungs. (Gomukhasana/ Cow's Face, Ustrasana/ Camel) (1) xvi
- c. Poses that relieve indigestion and nausea by lifting the diaphragm off the stomach and liver (Supta Virasana/ Reclining Hero) (2) p 132
- d. Poses that bring breathing awareness to lower abdomen. These poses release tension, free the lungs, and open the front of the body so that the diaphragm is not restricted. (Sukhasana/ Supported Crossed Legs Pose) (2) p 134
- e. Poses that open the chest and improve flexibility of the upper back, and stretch the muscles of respiration (Urdhva Prasarita Padasana/ Elevated legs up the wall) (2) p 129

- f. Poses for lateral movement of lungs and ribs with each inhale and exhale. These poses improve flexibility of the upper back (Setubandhasana /Supported Bridge) (2) p 127
- g. Backbending poses to stretch diaphragm, intercostals, and abdominals. These poses allow easier excursion of rib cage. Backbending in mid back opens the front lower ribs, which then allows the lungs to open. These poses counteract slumped kyphotic (increased convex forward slumping/hunched curve in the thoracic spine) posture. (Bhujangasana/ cobra) (1) xvii
- h. Side lying poses to stretch intercostals. These muscles help to lift the ribs during normal inhale and draw the ribs down during strong exhale. If they are tight, movement of the ribcage is limited and so is respiration. By stretching intercostals, breathing is enhanced. (2) p 133 (Jathara Parivartanasana/Abdominal Twist)
- i. Poses to create more spine flexibility (2) p 122 (Bidasana-Marjaryasana/ Cat-Cow, Chakravakasana/ Sunbird)
- j. Poses to relax any emotional tension that restricts ability to breathe well (Savasana/ Corpse Pose) (2) p 122

c - maintenance of underlying issues at the root of the situation.

The best diet is fresh vegetarian food: “boiled, steamed or raw vegetables; fruit; honey; home-made whole grain bread and other forms of wheat such as chapatti, wheat germ; barley and other light grains; split peas, mung beans. Legumes like fresh peas, beans, nuts can be eaten when strength returns. . . It is important not to become too fanatical regarding diet. It is not what one eats occasionally but what and how much is eaten every day that is important.” (5) p 29

Massage to relax and rejuvenate. Sauna is also helpful. Sauna sends blood to the skin and opens the pores to remove impurities. Then take a cold shower to wash away the impurities, and constrict the outer blood vessels which sends blood to the internal organs. Continue for three rounds, ten minutes each. Cold water stimulates deep breathing. Or use a hot shower instead of sauna, and continue the three rounds with hot and cold water. (5) p 53-54.

Focus more on a positive attitude and thoughts. Send positive energy to areas of body that need healing. See a psychiatrist if emotional factors are overwhelming.

Practice Kapalabhati.

7 – Questions and Answers from archives www.yogaforums.com

Q-I have a student in a super-gentle group class for cancer patients, age 53, who has a long history of asthma, for which she has used a range of inhalers (Proventil, Asthmacort, others) and other oral medications. She developed bowel cancer a few years ago, and has had several surgeries and chemotherapy. Her asthma has since worsened and worries her more than the cancer.

The class is very gentle. We often do the Joint Freeing Series, with or without a few additional poses that we do in a very gentle way, with lots of resting between poses, or we'll do just a few gentle yogananas, restorative yoga, meditation, sometimes a bit of chanting. I always do a lengthy Savasana, sometimes using guided imagery, usually with soft music or the sound of Tibetan singing bowls, or I sing or play chants. During Savasana, this student cries quietly -- but she always leaves smiling and feeling better. She has recently begun to open to her spiritual potential, and appreciates readings along these lines; she has begun to find prayers that are meaningful to her. My concern is that she often wheezes and seems out-of-breath in class -- this might even happen when she moves from lying down to sitting up, though I always ask everyone to move very slowly as they get up. When she struggles with the breath, I ask her to rest and not continue moving w. the class. She is resistant and always wants to continue moving, though this exacerbates her symptoms. I would describe her as a pitta/vata. I would appreciate any suggestions you have for this student.

A-Sounds like you are doing a fine job for her given that this is a class not an individual session. Class context is to the group not for individual therapy. The fact that she is emotional shows that she is getting some release from the excess kapha symptoms, which are characteristic of the core issue for asthma. Should she seek that then one can open yourself to giving more? For therapy for asthma, I recommend you look at Yoga for Common Ailments by Robin Monro, and others trained from the Vivekananda Yoga Therapy center in Bangalore. They recommend a practice called chair breathing, done by sitting on floor and bending forward so head and arms are supported by seat of chair. This can stop asthma attacks. For training contact them via Website information on my links page of my site.

Q-A student, age 59, overweight, very dedicated Yogini (comes to class 3x/wk, does daily meditation & yoga almost daily; studies sutras; really has made yoga a major part of her life), is having difficulty with breathing in general, and especially during pranayama practice (which she loves) and chanting. She runs out of breath quickly, and needs to take breaths frequently. She says that she can't get enough air. There is no history of asthma or heart disease.

I have given her Wave Breath and chanting as two pranayamas to do daily, and she also does Nadi Shodhana (Alternate Nostril Breath). Have also taught her how to use her intercostal and abdominal muscles to make the most of her exhalation. In last night's class, I taught a pranayama (to the whole class) that involves progressively lengthening the exhalation, then, if comfortable for the students, introducing pauses of 2-4 'beats' (I use a metronome). She said she could have held her breath for longer (which I did not recommend for her because I observed that it shortened her inhalation even more) ... instead, I instructed her to work on the exhalation more.

Despite regular pranayama practice, she feels that she is not making progress -- and I have observed that her breathing is still belabored, for example when she ties her sneakers, or bends forward, but even when she is sitting in meditation posture. Any suggestions would be appreciated. Blessings, Hamsa

A-If she has no history of respiratory difficulty I would want to know if she has trouble with climbing or strong exertions. If so then perhaps she has not been diagnosed yet with something pending. If the difficulty is minor and only occurs during yoga and

chanting then I would suggest the use of mudra to open her lungs. One mudra that may help is Jyesththa Prana Nadi Mudra from Richard Miller's article on mudra. (www.nondual.com) He is a senior teacher in the Desikachar lineage. It is done by placing the thumbs into the base of the little fingers and wrapping the other four fingers around the thumbs with steady pressure. The hands are placed palm side downward on the thighs.

A variation is done with the palm side upward and the knuckles together in the lap. This is called Poorna Prana Nadi Mudra. Have her do both and see if either or both assist in providing more air to her lungs.

Q-I have a constriction in the heart area and wonder how breath might facilitate this?

A- As far as opening your heart I would recommend doing a full hand mudra in which the thumb is placed with its tip at the root of the little finger and all other fingers encircling it like in a fist. Then place the hands fingers down on the thighs. Richard Miller calls this Jyesththa Prana Nadi Mudra in his booklet - Mudra - Gateways to Self-Understanding (order through www.nondual.com). It tends to promote more expansion of the lung tissues it is hence also most beneficial for asthma and other respiratory challenges.

Q-I will be giving a private lesson to an 8 year old girl who has asthma and her mother and father will possibly join us. The intention for trying yoga, according to the mother, is to help the daughter to relax. She was described as hyper and gets stressed out easily. The asthma was only mentioned as an afterthought, as it has not presented too significant of a problem. Are there any particular breathing techniques to address mild asthmatic conditions? As far as the relaxation component, I plan to teach her the wave breath, broken down into its three different stages as well as JFS. I'm thinking that she may also benefit from some more static postures. Much of this I won't be able to know until I meet with her, but do you have any preliminary suggestions on how to approach this new student?

A-I would focus on strong abdominal contractions during exhalation. Also use the intercostal breathing method described in my book. Both will help promote lung capacity and kapha balancing. At such an early age I would hesitate to do more. I find playing with yoga more helpful until they feel fine with your loving relationships. If so then shoulderstand is wonderful you can even hold the child in the position from the ankles.

Q & A from Matt Taylor's www.yogatherapy.com/yogatopics.htm

Q: I teach hatha yoga and a question came up about the effects of yoga on asthma. do you have any info you could send me on this subject?

A: yoga has been shown to be an effective adjunct in managing asthma...see "references" #33-35 at our site. While yoga is generally known for creating the relaxation or parasympathetic response, it's interesting that asthma is actually the result of bronchospasm of the airways...a parasympathetic response!!! I believe the staff at www.yogatherapy.org have special expertise as the founder cured his own asthma with YRx...Dr. Robin Munro. His book "yoga for common ailments " is listed in our bookshelf. Gary Kraftsow's book "yoga for Wellness" also covers the topic

well. It is one of the few areas where we have good scientific evidence of yoga's effectiveness.

Q: A student has asked me if there is any similarity or connection between ujjaye breathing and buteiko breathing for asthma. She says she finds the buteiko system really helps her. She's only recently been introduced to ujjaye breathing. Does anybody know of comparative work of this nature which I could have a look at?

A: It's Buteiko breathing, I find, not buteiko. The most useful site I found was this one: <http://www.wt.com.au/%7Epkolb/buteyko.htm>

But there are lots of others, esp. in Australia and New Zealand

It's a breathing retraining system which is designed to be helpful to asthmatics. It operates on a basic principle which has to do with the levels of carbon dioxide in the blood, to the effect that breathing TOO MUCH or TOO DEEPLY actually impedes the uptake of oxygen. Ujjaye is about deepening the breath but also about lengthening it - so maybe there is a correspondence there about slowing the breath down.

I have tried to find references to whether/how people could find buteiko breathing helpful them in sports training, which is the closest analogy to yoga, but all the stuff I've found refers to sports individuals who suffer from asthma and how this helps them manage the condition. Yet logically if they are right about the importance of carbon dioxide levels, that should be applicable to non-asthmatics just as much as to asthmatics.

A: are you talking about "“Doctor Buteiko’s Discovery”". The author is Altoukhov Sergei Georgievich. He is the disciple of academician Buteiko. "“?

I pulled the basic principles and pasted below. Here are the basic postulates of our theory: It is known that in deep breathing a large amount of CO₂ is removed from the organism and, consequently, its content is reduced in lungs, blood and tissue cells.

Deficiency of CO₂ caused by deep-type breathing produces pH alkaline shifts in tissue cells and in the blood. pH shift interferes with the activity of all proteins (approx. 1000) and vitamins (approx. 20) and brings about alterations in metabolic processes. Consequently, when pH reaches the value of 8 the metabolic disorders can produce a fatal result.

It is known that CO₂ deficiency causes spasms in the smooth muscles of bronchi, cerebral and circulatory vessels, intestines, biliary ducts and other organs. Late in the 19th century Werigo, a Russian researcher from the town of Perm, discovered a peculiar dependence: as a result of diminishing the CO₂ content in blood, the oxygen binds with the blood hemoglobin and impairs the transport of oxygen to brain, heart, kidneys and other organs. In other words, it can be described as follows: the deeper the breathing, the less amount of oxygen reaches the brain, heart, kidneys and other organs.

Brain oxygen starvation (hypoxia) caused by deep breathing promotes more intense bronchial and cardiac spasms. Hypoxia in vital organs is counter-balanced by the rise in arterial tension (artery hypertension), enhances blood circulation and the provision the organs with blood. CO₂ deficiency in the nerve cells excites all the structures of the nervous system thus making the process of breathing still more intensive.

As a result, oxygen starvation in nervous cells in combination with metabolic distortions and nervous system hyperexcitation brings about mental disorders,

destroys the nervous system (sclerosis of cerebral vessels) and, finally, causes a personality degradation.

You as the yoga teacher cannot "know" how any student or patient will respond to any technique or method you prescribe for any condition (back to a part mentality there...careful).

Oh no...what can I do? when you teach listen, sense at all five levels of the Koshas...don't just listen to words or diagnoses, be present, stay present to monitor and feedback awareness to the individual to empower them to then respond rather than react in order to make creative healthy choices rather than reactive, destructive choices. This doesn't negate the importance of studying and understanding science, for it gives us better guesses, but we must remain mindful as teachers/therapists that it's always a system of which we and the student are a part. Life calls on us to be open, present and creative, not fearful, controlling or deluded into the illusion that we the therapists are the healers...very tough, but exciting.

www.iayt.org:

no asthma links, but does mention site below

<http://asthma.nationaljewish.org>

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9 - Appendix – describe techniques not taught in this training or modified from the book.

Healing Prayers

MI SHEBERACH (words by Debbie Friedman)

*Mi Sheberach avoteinu
mekor habrakha l'imoteinu*
May the Source of strength
Who blessed the ones before us
Help us find the courage
To make our lives a blessing,
And let us say: Amen.

*Mi Sheberach imoteinu
mekor habrakha l'avoteinu*
Bless those in need of healing with *refuah shleima*:
The renewal of body,
The renewal of spirit,
And let us say: Amen

MI SHEBERACH BLESSING

Mi-Sheberach avoteinu v'imoteinu, Avraham v'Sarah, Yitzhak v'Rivkah, Ya'akov, Rachel v'Leah hu y'varekh et (insert names here) v'yavi aleihem refuat hanefesh u'refuat haguf yachad im kol cholei amo Yisrael. Barukh atah Hashem, rofeh ha'cholim.

May the One who was a source of blessing for our ancestors, bring blessings of healing upon (insert names here), a healing of body and a healing of spirit. May those in whose care they are entrusted be gifted with wisdom and skill, and those who surround them be gifted with love and trust, openness and support in their care. And may they be healed along with all those who are in need. Blessed are You, Source of healing.