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Asthma Answer

By Barbara Benagh

Following is adapted from Babara Benagh's full article: *Asthma Answer*. To read the article in its entirety please visit: www.yogajournal.com.

Breathing Lessons

Respiration, like other essential bodily functions, is involuntary. Our bodies are programmed from birth to perform these functions automatically, without having to think about them. Respiration is unique, however, since it can be voluntarily modified by the average person. This capability is the basis for breathing techniques that have been part of the yoga tradition for thousands of years. For asthmatics, these techniques can be the foundation for a program of breath retraining that can help them manage their disorder.

Breathing is ideally a process of maximum efficiency with minimum effort. Its efficiency depends on the correct functioning of the diaphragm, a strong sheet of muscle that separates the heart and lungs from the abdomen. Each breath starts in response to a message from the respiratory center in the brain which causes the diaphragm to activate. It flattens into a disc, making the lower ribs swing out and thus increasing the volume of the chest cavity. The lungs follow this expansion, creating a partial vacuum that pulls air into the lower lungs, much like a bellows.

When we exhale, the diaphragm simply relaxes. The lungs have a natural recoil that allows them to shrink back to their regular size and expel air. The abdominal muscles and muscles of the rib cage can enhance this process, but it is the release of the diaphragm and the recoil of the lungs that are the crucial elements in the exhalation. After a pause, the breath cycle begins again, a pumping rhythm we can all easily feel. When our breathing apparatus is working efficiently, we breathe six to 14 times per minute at rest. In a healthy person, this rate increases appropriately when the physical needs of the body require it.

Waiting to Exhale

Like other involuntary bodily functions, breathing is usually controlled by the autonomic nervous system, which enables the human organism to run like a well-oiled, self-correcting machine. There are two branches to this system: the parasympathetic and sympathetic. The parasympathetic branch, known as the "relaxation response," controls resting functions of the body. It slows the heart and breathing rate and activates digestion and elimination.

The sympathetic branch has the opposite effect. It rouses the body and regulates active functions related to emergencies and exercise. When emergencies arise, the sympathetic branch floods the

body with adrenaline—the well-known "fight or flight" response. The heart rate goes up and breathing rate increases to supply the body with an infusion of oxygen. If the danger is real, the increased energy is used. If not, the body stays in a state of overstimulation which can become chronic, causing a number of symptoms including anxiety and hyperventilation (overbreathing).

Since few of us are immune to the constant stresses and strains of modern life, the alarm bells of the sympathetic nervous system are constantly being rung. It is a real juggling act to maintain a healthy autonomic balance, a challenge at which asthmatics generally fail.

Although most asthmatics are unaware of it, we tend to chronically breathe at a rate two to three times faster than normal. Paradoxically, instead of providing more oxygen, overbreathing actually robs our cells of this essential fuel. We do take in more oxygen when we overbreathe; but, more importantly, we also breathe out too much carbon dioxide.

Most of us learn in school that when we breathe we expel carbon dioxide as a waste gas, but we don't learn that expelling just the right amount of CO2 is critical for healthy breathing. If CO2 levels get too low, the hemoglobin that carries oxygen through the blood becomes too "sticky" and doesn't release sufficient oxygen to the cells.

Eventually, starved for oxygen, the body takes drastic measures to slow breathing so CO2 can build back up to safe levels. These measures produce the classic symptoms of an asthma attack: Smooth muscles tighten around the airways, the body further constricts them by producing mucus and histamine (which causes swelling)—and we're left gasping for breath.

Catch Your Breath

Once I understood that breaking the cycle of overbreathing is essential to overcoming asthma naturally, I could draw on all my years of experience with pranayama. I experimented with breathing techniques to see what would restore my natural breath rhythm. Over time I settled on a handful of exercises that were both simple and effective at slowing my breath rate and reducing the incidence and severity of my asthma.

There are certain precautions to consider as you embark on this program. Please do not stop taking your medications. The program may ultimately reduce your dependence on medication or enable you to do away with it altogether, but this should not be done hastily or without the approval of a doctor. If you have diabetes, kidney disease, or chronic low blood pressure, have had recent abdominal surgery, or are pregnant, you should consult with your physician before doing these exercises. I also strongly suggest that asthmatics avoid additional breathing exercises which call for rapid breathing (kapalabhati/bhastrika), retention of the inhalation (antara kumbhaka), or tightening the throat (strong ujjayi). Asthmatics must realize that many breathing exercises which are quite beneficial for a normal breather may have a paradoxical impact on an asthmatic.

Let me stress that patience and perseverance are required in this program. The disrupted breathing patterns common among asthmatics are deeply ingrained and can take a while to change. The truth is, it can seem easier to take a pill or use an inhaler than to spend 15 minutes a day on exercises that confront these stubborn patterns and bring up the fears and emotions that often surround the disease. I know the frustrations firsthand.

But I also know, from my experience, that if you make these behavioral changes a daily regimen, you'll gain valuable tools for managing your asthma.

Breath Retraining Tips
Here are a number of practical guidelines that will help your efforts be more successful.

At first, practice the exercises in order. You may eventually find you prefer a different sequence, and that's fine. (You may also have other exercises that have helped you in the past. Feel free to include them.) But whatever you do, I recommend you start each session with the Deep Relaxation exercise.

Don't be too ambitious. Resist the urge to do more even if you feel you are ready. Wait a few months before increasing your efforts.

The exercises work best on an empty stomach, but you should sip water to help keep your airways moist.

For optimal results wear warm, loose-fitting clothing and practice in a comfortable place where you have room to lie down on the floor. In this position, less effort is required for your diaphragm to move well. However, if you are experiencing asthma symptoms, lying down may be uncomfortable. In that case, try sitting on the edge of a chair and leaning forward onto a table. Rest your head on folded arms and turn your head to one side. But you don't need such ideal conditions to practice; I encourage you to do exercises whenever and wherever they come to mind. I often practice while I am driving.

If you feel anxious, nauseous, or short of breath while doing the following exercises, STOP. Get up and walk around. You are probably hyperventilating and need to burn off some energy. Don't try to continue your exercises immediately, but come back to them the next day.

Remind yourself often—especially if you get frustrated—that the way you breathe now is making you ill; that it's learned behavior; and that it can be changed.

Practice the exercises once or twice daily. When you are exhibiting symptoms, exercises 4 and 5 can be done more frequently.

There is one final guideline that may seem like a whole program in itself, since it can be so hard for an asthmatic to do: It is very important to breathe through your nose during all the exercises, even though asthmatics are often chronic mouth breathers. In fact, it is important to breathe through your nose most of the time. Air breathed in through the nose is filtered, warmed, and moistened, making it just right for sensitive airways. Nose breathing also promotes correct diaphragmatic action since it makes hyperventilation more difficult.

You may protest that you have to breathe through your mouth because your nose is always blocked. But did you know that a chronically blocked nose can be a result of poor breathing, instead of the other way around?

Here are a few tips to help unblock that schnozz and keep you breathing through it. After an exhalation, hold your nose and shake your head up and down for a few seconds, stopping when you need to inhale. This can be very effective, especially if you repeat it a few times. If you do Headstand in your asana practice, you may find that it helps, too. Using a mild saline solution to wash out your sinuses is also a great habit to develop. (Neti pots are designed for this purpose.)

When you're trying to breathe through your nose, don't pull the air into the nostrils; instead, open the throat. I do this by imagining my mouth is located at the hollow of my throat.

Exercise 1

Deep Relaxation
This exercise helps you establish a calm state before doing the other exercises. Begin by lying down with a firm pillow or a folded blanket under your head. Bend your knees and rest your feet flat on the floor. If that is not comfortable, place a bolster or rolled blanket under the knees. Feel free to shift your position and stretch if you become uncomfortable. Some people like to play calming music as well. Place your hands on your belly, close your eyes, and turn your attention inward. How do you feel? Are you uneasy, uncomfortable, buzzing, or distracted? Is it difficult to lie still? Is your mind racing? The goal is to let go of all that, which is not always easy. It may take several minutes (or several sessions) to relax deeply. Give yourself time.

With each exhalation, let your belly sink away from your hands and into the back body. After a gentle pause, can you feel the belly rise effortlessly when you inhale? This relaxed action cannot be rushed, so don't force the movement in any way; an easy rhythm will settle in as your state of relaxation deepens.

Exercise 2

The Wave
I call this exercise "The Wave" because of the soothing movement that ripples up and down the spine when the body settles into your natural breath. This movement helps unlock the diaphragm and massages the abdomen, chest, and spine, releasing tension that can interfere with healthy breathing.

After Deep Relaxation, place your arms on the floor alongside your torso. Close your eyes and turn your attention to the belly and the way it melts into the pelvis each time you exhale. Begin The Wave by gently relaxing the lower back into the floor as you exhale, and then lift it a couple of inches as you inhale. The hips stay on the floor as the lower back rises and falls. This need not be a big movement, and the pace of breathing should be slow and easy. Allow yourself to settle into and slightly amplify this rhythmic wave, and notice if you can feel movement all the way up and down the spine. Repeat this exercise 10 or 15 times before continuing to the next technique.

Poor breathing habits may confuse you and cause you to reverse the coordination of movement and breath, so pay close attention. If you find yourself feeling tense, take a few normal relaxing breaths between cycles.

Exercise 3

Softening the Inhalation
In this exercise you will try to soften the effort you use to inhale, and to decrease the length of your inhalation until it is shorter than the exhalation by as much as half. When you first try this exercise, you may feel an urgent desire to breathe in more. Instead, remember that overbreathing is a habit that perpetuates your asthma.

To identify your basic relaxed breathing rate, begin by counting the length of your exhalation, the pause afterward, and the following inhalation. After several minutes, start to modify your breath rhythm to emphasize the exhalation. Use the baseline length of your exhalation as the gauge for any modifications you make: In other words, don't struggle to lengthen your exhalation; instead, shorten your inhalation. With practice, this will become easier. In the meantime, take several of your baseline breaths between cycles if you feel anxious or strained.

Exercise 4

Complete Diaphragmatic Exhalations
An inability to exhale fully is a defining symptom of asthma. I practice this exercise frequently whenever I feel short of breath.

Lie on your back with your eyes closed and arms stretched out along your sides. Beginning with an exhalation, purse your lips and blow the breath out in a steady stream. You will feel a strong action in the belly as the abdominal muscles assist

the exhalation. Your exhalation should be longer than usual, but it is important not to push this too far. If you do, it will be difficult to pause after exhaling and your subsequent inhalation will be strained.

Pause for a few seconds after your exhalation, relaxing the abdomen. Then, keeping your throat open, allow the inhalation to flow in through the nose. Because of the stronger exhalation, you should be able to feel the inhalation being drawn down effortlessly into the lower chest. Count the length of the exhalation, the pause, and the inhalation. At first, try to make the exhalation at least as long as the inhalation; do this by shortening your inhalation, as in the previous exercise. (Unlike the previous exercise, in which you breathe at your normal resting rate, your breath here will be both longer and stronger.) Eventually, aim to make your exhalation more than twice as long as the inhalation and to make the pause after the exhalation comfortable rather than hurried. Since asthmatics find exhalation difficult, it may help you to imagine the exhalation flowing upward, like a breeze within the rib cage, as the breath leaves the body.

Repeat five to 10 cycles of this exercise. As with all the exercises, I recommend you take several normal breaths between cycles.

Exercise 5

Extended Pause
This exercise is designed to help regulate the CO2 levels in the body. It doesn't give the same quick fix as an inhaler, but it can turn an asthma attack around if you start it early enough. By pausing before you inhale, you give the body a chance to slow down and build up the level of carbon dioxide. An overbreather may find this to be the hardest exercise of all. At the outset it may be difficult to pause for even a few seconds, but if you keep trying you will notice improvement, perhaps even during a single practice session. Eventually, the pause can extend up to 45 seconds or even longer.

Position yourself as before: on your back, knees bent, with feet flat on the floor. In this exercise I recommend that you consciously shorten your inhalations and exhalations. (Your breath rate should not become rapid, though; the shorter inhalations and exhalations are balanced by the longer extended pause.) Inhale for one or two seconds, exhale for two to four seconds, and then pause. During the pause you may feel an urge to exhale a bit more, which is OK; in fact, the overall feeling of the pause should be like the natural relaxation that occurs as you exhale. You can extend the pause by consciously relaxing wherever you feel specific tensions.

As with all these exercises, patience yields better results than force. Repeat the exercise five to 10 times, and feel free to take normal breaths between cycles.

There are, of course, many other breathing techniques that can be beneficial in the management of asthma, but I can personally vouch for the transformative power of the exercises in this program. I am still an asthmatic, but I haven't been hospitalized or on prednisone for a very long time.

The results of my efforts have been nothing short of exhilarating. Though I continued to practice yoga throughout my worst asthma years, my practice has become stronger as a result of the breathing exercises, which have helped me develop a greater sensitivity to the role of breath in asana practice. Also, I've been able to return to cycling, a favorite pastime I'd given up for a decade. Less than one year after adopting this program, I was able to cycle over Colorado's Loveland Pass (11,990 feet) and to ride from Boston to New York City in a weekend without taking a single breath through an open mouth!