

Physiology of Bhastrika

Understanding the Bellows Exercise

David Coulter

Students of yoga hear many mysterious statements about breath that cannot be explained by modern biochemistry and physiology: Breathing absorbs prana into the body; prana controls the universe; prana is the vehicle of cosmic consciousness. Even though biomedical science stands helpless before such statements, scriptures from all over the world echo with similar mystery. The *Prashno-panishad* says, "Prana springs from the Atman and is as inseparable from the self as the shadow is from he who casts the shadow." Genesis 2:7 reads, "God formed man from the dust of the ground, and breathed into his nostrils the breath of life, and the man became a living being." We find in John 20:22 "He breathed on them, and said 'Receive the Holy Spirit.'"

Breathing is also one of the most remarkable functions of anatomy and physiology. It is the only biological activity which can be brought under full conscious control and yet functions semi-automatically 24 hours a day. It operates between two biological features of our being: (1) the conscious operation of the skeletal muscles, and (2) the unconscious operation of internal organs and the autonomic nervous system.

Controlling the Breath

Our practical concern here is the control of willful, habitual, and semi-automatic actions of the skeletal muscles of respiration. These are the same kinds of muscles that we use for walking, running, and speaking. By contrast, the lungs are internal organs—delicate, spongy receptacles for the breath of life. They are passive and can receive and expel air only because the surrounding skeletal muscles of respiration expand the semi-rigid chest cavity for inhalation and permit its contraction for exhalation.

Centers in the brain stem and spinal cord act to control the muscles of respiration. Many physical and mental factors have an effect on those centers. Some of the factors are environmental, such as altitude, humidity, and airborne noxious agents. Some are mental, such as excitement, anxiety, and boredom. Some factors feed back directly from the internal environment of the body, such as levels of oxygen and carbon dioxide in the blood and cerebrospinal fluid. Other factors, such as volition and long-established habits of breathing and posture, link the motor centers of the cerebrum directly to the brain stem and spinal cord.

Of the various factors that influence the control centers, volition is always at our disposal. Just as we can choose how many times to chew a bite of food or how to adjust our stride walking up a hill, we can also choose how we breathe. Although most of the time we run on automatic (allowing input from internal organs to regulate the rate and depth of our breathing), yogis emphasize choice. They have discovered the value of learning to regulate respiration consciously, to breathe evenly and diaphragmatically for meditation, to hyperventilate for bellows breathing, and to suspend the breath at will. In this column we will try to resolve at least part of the mystery surrounding bellows breathing by looking at some of its physiological aspects.

Oxygen and Carbon Dioxide

If you were swimming underwater, or trying not to breathe exhaust fumes when bicycling, or running short of air

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in a collapsed mine shaft, your main problem would be getting enough oxygen. The reason is simple. If the supply of oxygen to your brain is interrupted, the brain will suffer cellular damage in less than a minute and death of the tissue in about five.

Hyperventilation brings extra oxygen into the lungs and expels more carbon dioxide than usual. This raises the blood content of oxygen and lowers the blood content of carbon dioxide. Except for special circumstances, the extra oxygen obtained from hyperventilation is not harmful. So why do we hear of hyperventilation causing panic attacks? Why not have as much oxygen and as little carbon dioxide as possible?

The problem is that hyperventilation creates a paradoxical situation. Although it increases the level of oxygen in the blood, it results in a decreased supply of oxygen to the actual tissues of the brain and spinal cord. This occurs indirectly. The decrease in blood carbon dioxide that accompanies hyperventilation causes constriction of the small arteries and arterioles of the brain and spinal cord. (An arteriole acts something like an adjustable nozzle on the end of a garden hose. The nozzle can open to emit a lot of water, or clamp down to permit only a fine spray.) The decreased carbon dioxide causes the encircling smooth muscle cells of arterioles to contract. The blood supply is choked down, and if blood cannot get to the brain tissue it doesn't matter how well it is oxygenated.

Decreases in blood levels of carbon dioxide could cause you to pass out, which is why lifeguards do not let swimmers hyperventilate vigorously before swimming underwater. Lowered carbon dioxide and cerebral vasoconstriction are also the main reasons hyperventilation causes obvious neural and neuromuscular symptoms such as increased excitability of nerves and muscles, tingling, numbness, twitching, and muscle cramps. Hyperventilation can also cause general symptoms such as fatigue, irritability, light-headedness, inability to concentrate, and panic attacks. (The folk remedy for panic attacks is to breathe into a paper bag; this increases carbon dioxide levels and opens the cerebral circulation.)

If beginning students start to practice the bellows exercise excessively they are likely to experience at least some of these symptoms—especially irritability. Over time, however, it is possible to expand your practice and gradually become less sensitive to decreased carbon dioxide. To understand how this comes about, we need to look at two of the many reflexes that control breathing.

The Chemoreceptors

One reflex originates from peripheral chemoreceptors, specialized receptors in the carotid arteries. These monitor oxygen in arterial blood and are one connecting link between the internal organs and the skeletal muscles of respiration. They send sensory information to the brain, but instead of feeding into autonomic nervous system circuits that regulate internal organs, they feed into the controlling circuits of the nervous system that regulate breathing. The peripheral chemoreceptors do not respond significantly to small decreases in blood oxygen, but they become extremely sensitive as values for blood oxygen plunge. For example, if you hold your breath long enough to cut your arterial oxygen in half, your subsequent rate and depth of breathing will quadruple the amount of air delivered to the lungs.

A second reflex originates from central chemoreceptors on the surface of the brain that are sensitive to carbon dioxide in the cerebrospinal fluid. These strongly stimulate the rate and depth of respiration in response to increased levels of carbon dioxide. Because it takes a while for the carbon dioxide in cerebrospinal fluid to come to a state of equilibrium with the carbon dioxide in the blood, the stimulating effects of holding your breath or the retarding effects of hyperventilation are not felt as quickly as when the carotid artery chemoreceptors react to severely diminished supplies of oxygen.

High Altitude and the Bellows Breath

We can best understand responses to breathing exercises such as *bhastrika* if we look at our responses to high altitudes. Sudden exposure to high altitudes can be dangerous because: (1) There is less oxygen in the atmosphere. (2) Levels of inspired and arterial oxygen are decreased. (3) Hyperventilation results from the stimulation of peripheral chemoreceptors; this compensates for decreased blood levels of oxygen, and would be fine but for one serious problem. (4) Hyperventilation soon lowers the partial pressure of carbon dioxide in the cerebrospinal fluid, and the sorely needed continuing hyperventilation (for the sake of oxygen) is reduced because of decreased carbon dioxide. (5) To make matters worse, cerebral vasoconstriction accompanies the lowered blood carbon dioxide and causes ischemia (insufficient blood flow to the brain). (6) Finally, one can die before cerebral ischemia causes the buildup of enough carbon dioxide in the brain to dilate the arterioles and increase the oxygen supply to the cells.

If you acclimatize to high altitudes gradually over a period of days, however, bicarbonate levels in the

cerebrospinal fluid are reduced, thereby increasing its acidity. This has an effect that is similar to elevating the level of carbon dioxide—it restimulates the central chemoreceptors and causes hyperventilation to continue. With gradual acclimatizing to high altitudes the cerebral arterioles also become less sensitive to lowered carbon dioxide and permit adequate perfusion of blood to the capillary beds of the brain.

This same mechanism will operate if you practice the bellows exercise at ordinary altitudes. It also will enable you to breathe faster and more deeply at high altitudes and at the same time allow you to handle decreased carbon dioxide gracefully. Carrying these and other compensatory mechanisms to their limits, a few people have now climbed Mount Everest (altitude 29,000 feet) without bottled oxygen, and they were able to continue extreme hyperventilation—in an atmosphere containing the equivalent of only 5 percent oxygen at sea level (rather than the usual 21 percent)—while their arterial carbon dioxide dropped to one-fifth of its normal value. This appears to be about the limit of human ability to adapt to high altitudes. The untrained subject who has not developed this capacity to handle greatly decreased levels of carbon dioxide will lose consciousness at an altitude of 29,000 feet in less than two minutes.

Bhastrika, the Bellows Exercise

Now we can understand some of our responses to an exercise such as bellows breathing. Try taking 40 moderately vigorous bellows breaths in 15 seconds. Your blood oxygen rises and your blood carbon dioxide drops. When you stop, your rate and depth of breathing will decrease for a few moments in response to decreased stimulation of the peripheral chemoreceptors. This will be a minor reaction, but you can still feel it.

If you try six rounds of this exercise, with 15 seconds intervening between each round over a period of three minutes, it will lower carbon dioxide not only in your arterial blood but in your cerebrospinal fluid as well, and you will notice a decrease in the rate and depth of your breathing for a longer time. There is probably little point in bothering with the exercise unless you stimulate this much reaction. If you do it once a day you will not need to worry about acclimation, but if you overdo the practice in the beginning you may start causing the same problem that occurs with sudden altitude changes. Until the bicarbonate levels in your cerebrospinal fluid adjust, your central chemoreceptors will retard your breathing in response to lowered carbon dioxide. In time, you will be able to hyperventilate vigorously without creating problems for yourself.

Besides helping us acclimatize to high altitudes, the bellows exercise can give us many everyday benefits. If you are chronically sleepy and short on energy, for instance, it may be because you are surviving with less oxygen and more carbon dioxide than is optimal. (Remember, the peripheral chemoreceptors are not very reactive to small decreases in blood oxygen, and you may not notice that you could use more.) If you would like to remedy this by using conscious habits of breathing, practicing the bellows exercise will increase the level of oxygen in your blood and accustom you to decreased levels of carbon dioxide. This will give you the benefits of greater alertness as well as a new sense of well-being, thus resetting your standards for energy and enthusiasm.

Yoga International, now Yoga + Joyful Living
Jan/Feb 1995
Issue 22

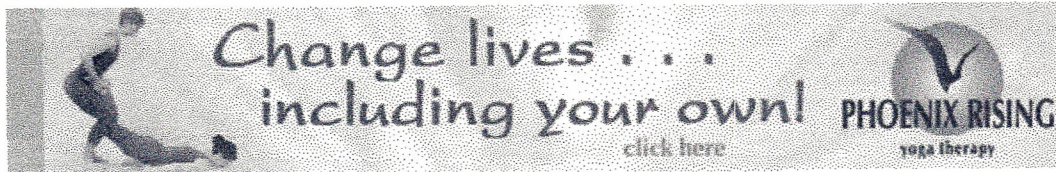
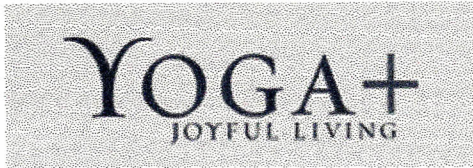


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Clearing Your Head: The Practice of Kapalabhati

Pranayama

Kevin Hoffmann

Kapalabhati will be a welcome change for those of you who are impatient with subtle pranayama practices and their even subtler effects. With kapalabhati, you can immediately feel that something is "really" happening. Kapala is the Sanskrit for skull, and bhati is derived from a Sanskrit word meaning "to shine." This vigorous cleansing exercise has significant benefits, not the least of which is clearing the nasal passages and providing a bath of freshly purified blood to the brain.

Kapalabhati consists of a forceful, vigorous exhalation, followed by a passive inhalation. You practice this sequence slowly at first, gradually gaining the proficiency to do it rapidly. The classical manuals on hatha yoga list kapalabhati as one of the six cleansing exercises (*shat kriyas*), because the emphasis on exhalation enhances the ability of the lungs to expel wastes and toxins. Kapalabhati also helps develop the strength and stamina needed for other hatha yoga practices.

Reversing Habitual Breathing Patterns

In most breathing exercises, inhalation is active and exhalation is passive. Passive exhalations are never as complete as they could be. To exhale completely, you must use the abdominal muscles near the end of exhalation. Try it: Sit upright and inhale; don't move your chest and shoulders. The sensation of effort that you feel represents the active contraction of the diaphragm muscle. Feel the effort of the diaphragm? Now exhale completely. Notice how the first portion of the exhalation is effortless, but to force out more air, you have to contract the abdominal muscles. Do this a few times until you can feel when you begin to use the abdominal muscles to complete the exhalation.

Kapalabhati reverses the usual pattern of active inhalation and passive exhalation, and this reversal takes a little getting used to. The exhalation in kapalabhati is short, powerful, and complete, and it takes some practice to perfect. Begin by establishing a baseline of deep, even, nasal breathing. At the end of a normal exhalation, contract the muscles that form the front wall of the abdomen--from just below the ribs to the pelvis--strongly and quickly, forcing the air out of the nostrils. Contracting these muscles will move the abdomen toward the spine and push the diaphragm up into the chest cavity, compressing the lungs. This results in the expulsion of air through the nostrils, provided there is no other movement and no obstruction of the nostrils. Only the abdomen moves--keep the rest of your body completely still. Each exhalation should be as complete as you can comfortably achieve in one short, powerful blast.

Without pausing, relax the abdominal wall and you will automatically inhale. Allow the abdomen to return to its resting position. Do not inhale actively. Initially, this is the most difficult part of learning kapalabhati and requires practicing slowly and deliberately.

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You must develop the ability to breathe using the abdominal muscles alone, contracting them quickly during exhalation and relaxing them completely for each inhalation. The diaphragm should remain passive through both inhalation and exhalation. Think of kapalabhati as an abdominal exhalation exercise. The mobility of the diaphragm will partially determine the effectiveness of each exhalation. A relaxed, supple diaphragm will allow rapid and complete exhalation in response to the inward movement of the abdomen. If you maintain tension in the diaphragm, it will create resistance both to the expulsion of air and to free inhalation.

The passive inhalation takes longer than the strong and forceful exhalation, so in practice, inhalation will be about twice as long as exhalation. Throughout the practice, emphasize exhalation and wait for inhalation. Repeat the exercise slowly, at first at the rate of about 1 to 1.5 exhalations per second.

How to Sit

Practicing kapalabhati requires a firm, stable posture because, as you progress, the muscular contractions during exhalation become very powerful; an unstable posture may allow movement, which will disrupt the practice.

The head, neck, and trunk must be held in vertical alignment. When the spine is properly aligned, the capacity of the lungs is slightly expanded. Try this for yourself. As you are reading this, purposely slouch, bringing your shoulders toward your hips. Take a few breaths. Notice the difficulty during inhalation? Now sit upright and continue breathing evenly. Notice the difference?

Pay particular attention to the head position. Bring the chin back over the breastbone and extend the neck upward. This positions the head directly over the hips. Relax the shoulders--you needn't lift them or pull them back. Now try moving back into the slouched position and then back to the upright position a few times to fully experience both. Notice how the rib cage opens when you sit upright? This open attitude of the thoracic cavity is essential for the proper practice of any pranayama

Correct alignment of the head and spine enables you to relax the abdominal muscles, which is imperative for proper inhalation in kapalabhati. Therefore, the best posture is one in which you can sit comfortably and firmly with your head, neck, and trunk aligned. The best asanas include *padmasana*, *swastikasana*, *vajrasana*, *siddhasana*, or sitting upright and forward in a chair.

Progression of Practice

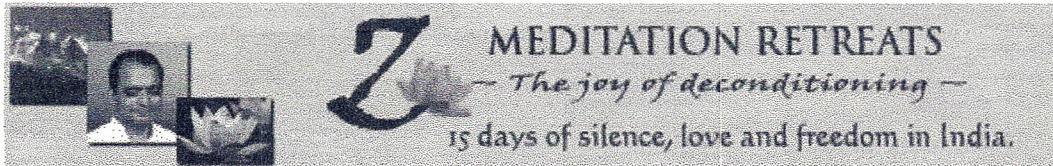
There are three things to keep in mind when practicing kapalabhati: the duration of practice (the number of repetitions), the force applied to the exhalations, and the rhythm and speed of respiration.

The duration of the exercise • Kapalabhati is usually practiced in a series of rounds. Its best to begin with 10 to 15 repetitions per round, three rounds per sitting, and one sitting per day. Separate each round by deep, even breathing until breathing equilibrium is re-established. Increase the number of repetitions per round by about five repetitions per week. One hundred and twenty repetitions per round is considered a vigorous practice for most people.

Force of the exhalations • Make each exhalation as forceful as possible without strain or undue effort. If this is your first exposure to this exercise, you might experience some soreness of the abdominal muscles, much like the soreness that develops after an occasional physical workout. If you practice consistently and proceed slowly, this will pass in a few days. Gradually increase the force of the exhalations as your practice develops. Strive for short, explosive exhalations that are comfortably complete. Aim for exhalations that last for less than 1/4 of a second.

The rhythm of the exhalations • The rhythm should be regular and consistent, like the ticking of a clock. When you begin, do one exhalation per second until the motions become second nature. A week should be sufficient, but it may take longer. Gradually increase the speed of the exhalations to two per second.

I've seen people practicing this exercise very rapidly, three or more exhalations per second. Such rapid practice may look impressive, but it sacrifices the effectiveness of the exercise. Such rapid exhalations become shallow, thus reducing the volume of air being moved. The more complete each exhalation and inhalation, the more air is moved out and into the lungs, and the more lung capacity is used. When you have increased the speed of the exhalations to two per second, focus on increasing the completeness of each exhalation. When you find the rhythm faltering, stop. Accept that number of repetitions as your current limit, and remain at that level for a week or more before increasing the number of repetitions.



Tempering the Mettle: The Practice of Bellows Breathing

Pranayama

Michael Grady

There was a time when you didn't have to go far to find a blacksmith working his bellows, drawing and pushing blasts of air across glowing coals to generate the heat needed to bend metal. While the era of the blacksmith is gone, the image of his bellows remains as an appropriate metaphor for the vigorous breathing practice called *bhastrika*, which means "bellows" in Sanskrit.

In this breathing technique, the action of the abdominal muscles and diaphragm pushes and draws air in and out of the lungs like the blacksmith's bellows, generating heat within the body by vigorously working the cardiovascular system. The bellows breath squeezes blood in and out of the digestive organs, toning the liver, spleen, stomach, and pancreas and increasing digestive capacity. Stoking the pranic fire with *bhastrika* enhances health and vitality--tempering the mettle.

Preparation

To begin the practice of *bhastrika*, sit in a steady, comfortable posture with the spine straight and the shoulders rolled back. Beginners can sit in a simple cross-legged pose or in a kneeling position. More advanced students can sit in *siddhasana* (the adept or accomplished pose) or *swastikasana* (the auspicious pose). If none of these poses is comfortable, try sitting on the edge of a firm chair with your back straight, feet resting flat on the floor, and hands resting palms down on the thighs. Resting your back against the chair or hunching the shoulders and rounding the back in any position compresses the abdomen and inhibits the motions of both inhalation and exhalation. Be sure to practice in a well-ventilated room. In the winter, opening the window even a crack will freshen the air supply.

Technique

After establishing the correct posture, take a slow, deep inhalation. Let the abdomen fully expand. This first slow inhalation ensures that you begin with plenty of oxygen and works against the tendency to exhale more than you inhale, a common mistake made by beginners. After the first inhalation, both exhalations and inhalations should be forceful: exhalation is produced by quickly contracting the abdomen. Inhalation is quick and diaphragmatic.

The challenge in *bhastrika* is to coordinate the action of the diaphragm and abdominal muscles so that air moves quickly in and out of the lungs like a bellows. As the abdominal muscles relax at the end of an exhalation, the diaphragm actively contracts to begin inhalation. As the diaphragm begins to release its contraction after the peak of inhalation, the abdominal muscles begin to contract. Coordinating these two opposite muscle groups in rapid bellows breathing takes time and attention. Monitor the strength of the exhalation and inhalation and try to make them roughly equal in force.

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You will hear both the inhalation and exhalation in the practice of bhasrika. This active, more complete inhalation is what distinguishes bhasrika from *kapalabhati*, a breathing technique in which only the exhalation is audible. The two techniques are similar both move air vigorously out of the lungs during exhalation by forceful contractions of the abdomen but in *kapalabhati* the inhalation is effortless and spontaneous, without the diaphragmatic muscle actively contracting. In bhasrika, the inhalation is forceful and is produced by an active contraction of the diaphragm.

Practice a minimum of seven breaths of bhasrika at a rate that is comfortable and that allows you to observe the motions of the diaphragm and abdomen. To begin, one breath every second is rapid enough. Later you can increase the rate to two breaths every three seconds. Athletes and people who regularly exercise may be able to comfortably start with fifteen to twenty breaths at the rate of one breath per second. Still, it's important to set a limit when you first begin to practice. Concentrate on perfecting the technique, and don't fall into the habit of doing too many repetitions that is, inhaling and exhaling until the breath becomes progressively weaker and less effective.

When you finish a round or one set of repetitions, take a few deep, diaphragmatic breaths, or do the complete breath and then let your breathing gradually return to normal. As you grow more proficient, you can do two or more rounds of seven or more breaths, using the deep, diaphragmatic breath to rest between rounds. Remember that it's better to do fewer repetitions with equal vigor than a greater amount in which the breath peters out.

Cautions and Precautions

One mistake some students make when beginning the practice of bhasrika is breathing paradoxically pushing the abdomen out with the exhalation and contracting the abdomen with the inhalation. Paradoxical breathing inhibits the action of the diaphragm, making it difficult for the lungs to expand downward. Paradoxical breathing may sound like bhasrika, but the effect is to create a vigorous suppressed inhalation that is inefficient as well as disturbing. To ensure that you do not fall into this habit, put your hand on the navel center and make sure the navel is moving toward the spine on the exhalation. Once you are confident that you are breathing correctly, you can rest both hands more comfortably on the thighs.

If you feel a stitch in the side or a sharp pain under the ribs (similar to the cramping action a long-distance runner sometimes experiences), stop practicing and return to simple diaphragmatic breathing. If you feel on edge and irritable, you may be practicing too aggressively, causing the carbon dioxide levels in the bloodstream to drop more quickly than your body can handle, resulting in hyperventilation. The body responds by decreasing the blood supply to the brain, resulting in temporary lightheadedness, anxiousness, and perhaps accompanying sensations of tingling in the fingertips and lips. The unpleasant symptoms will disappear with simple diaphragmatic breathing.

Similarly, feeling worn out or spacey is an indication that you are doing too much or not resting adequately between rounds. Practicing twice per day, up to three rounds at a time, you can safely add five repetitions per week to the number of repetitions per round. If week number one includes three rounds of 15 repetitions, week two can include three rounds of 20 repetitions, and week three, 25 repetitions. If you find your practice interrupted for several days due to illness or other circumstances, carefully watch your capacity when you start practicing again and be willing to decrease repetitions if necessary.

Because bhasrika increases intra-abdominal pressure, it is not an appropriate practice for women during menstruation or pregnancy or for women using an Intra-Uterine-Device (IUD). Likewise, it may be inappropriate for those suffering from ulcers, hiatal hernia, constipation, heart disease, or high blood pressure, or for anyone controlling blood pressure with medication. Consider consulting a physician before you begin practicing bhasrika if you suffer from any of these conditions. Since most physicians will not be familiar with the technique, make sure you carefully explain how it works and what its effects are. Bhasrika is difficult-to-impossible to perform with moderate to severe nasal congestion, and forcing mucus through the eustachian tube into the middle ear can cause an ear infection.

Variations

By turning the head from side to side in synchronization with the breath, you can channel the breath flow through a particular nostril. Turning the head to the right, for example, creates a mechanical pressure that encourages air flow through the left nostril. The movement of the head from side to side and back to center is coordinated with the breathing.

Begin by sitting in a comfortable posture facing forward. Slowly inhale to begin the practice. Then exhale and inhale forcefully. Immediately turn your head to one side. Exhale and inhale vigorously once, and then turn the head back to center and exhale and inhale vigorously for a second breath. Now turn the head to the opposite side for the third breath. Return to center and continue this pattern. Each breath should be completed before turning the head, but at the same time allow no discernible pause in breathing while turning the head. This may take a little practice, but it is possible to do this variation almost as quickly as regular bhastrika.

Another method for alternating breath flow through the nostrils during bhastrika is to close off one nostril as in alternate nostril breathing. Simply fold the index finger and middle finger to the palm while leaving the thumb, small finger, and ring finger extended. This hand position is called *vishnu mudra*, in which slight movements of the thumb or ring finger easily close or open a nostril.

Begin by raising the hand to the level of the nose rather than lowering the head to meet the hand. Fold the index finger and middle finger to the palm. Using the thumb or fourth finger, gently press the outside of each nostril, in turn, until it closes, while exhaling through the open nostril. Compare the relative ease of breathing through each nostril to determine which is more open. Usually you can tell which nostril is "active," because a greater amount of air seems to be exhaled through it. Now inhale deeply through both nostrils. Close off the restricted or passive nostril. Through the active nostril, exhale and inhale forcefully as in normal bhastrika. Then immediately close the active nostril and exhale and inhale forcefully through the passive side. Continue to alternate the breath flow from side to side.

In this practice, one of the nostrils is always closed. Vishnu mudra allows you to open and close the nostrils easily and quickly with no discernible pause in the breath, so you can practice at your normal rate. Since, unlike side-to-side bellows, you are completely closing off one nostril, don't do this variation if you have nasal congestion or a deviated septum.

The Benefits

Bhastrika can clear the nasal passages, sinuses, and lungs. It massages the abdominal organs, stimulates the liver, spleen, and pancreas, and can help to evacuate the bowels. Bhastrika stimulates the cardiovascular system, although it cannot really replace aerobic exercise. That is because it's generally not possible to practice bhastrika for the same length of time as aerobics, and therefore you can't get the same amount of exercise. Bhastrika may accelerate the heart rate to a level comparable to aerobic activity, but the respiration rate during the practice is considerably higher than during typical aerobic activities.

Imagine a person practicing bhastrika at the rate of two breaths each second. That's top speed for an experienced practitioner sixty breaths in just thirty seconds. That same person may take about twenty breaths in thirty seconds during light jogging. With bhastrika the breath rate is three times faster than during jogging. Even doing bhastrika at the beginning rate of one breath every second would mean breathing half again as fast as at a moderate jogging rate. This intense rate of respiration is why an individual can't maintain bhastrika as long as a typical aerobic activity. Breathing rapidly can be exhausting!

Even though it is not a substitute for aerobic exercise, a moderately intense regimen of bhastrika along with kapalabhati still exercises the cardiovascular system and helps keep it in shape despite lapses in regular aerobic activity. Once I had to stay in bed for weeks waiting for a blood clot in my leg to dissolve. I knew I would languish in bed without regular exercise, but fortunately I knew two invigorating techniques, kapalabhati and bhastrika. I had never worked with them consistently, but what better opportunity?

During the next five weeks of my confinement, I practiced two or three rounds of kapalabhati and bhastrika three times a day. Gradually I increased the number of repetitions. Instead of waning in health and vigor during this period, I experienced one of the most enjoyable and productive respites of my life.

Bhastrika is one of the most powerful breathing practices available to the student of yoga. It is not difficult to learn and does not require much time to practice, yet it yields considerable benefits. Just as the blacksmith learns to work the bellows efficiently to create heat, so, too, you can intensify the inner fire with bellows breathing.

But remember that overdoing it may leave you feeling edgy and irritable. Astute self-observation and a healthy respect for your limits are especially important. As you advance, you will tap a reservoir of energy that can bring more vitality into your life as well as greatly enhance your spiritual practice.

Michael Grady has been teaching yoga breathing practices for over a decade.

January/February 1994



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