

Breathe Beyond Existence

"A more useful science than the science of respiration, a more beneficial science than the science of respiration, a greater friend than the science of respiration has never been seen nor heard." – Shivagama

"Breathing may be considered the most important of all the functions of the body, for, indeed, all the other functions depend upon it." – Ramacharaka

"Pranayama is what heart is to the human body." - B.K. Iyengar

Why Is Oxygen So Vital?

Oxygen is very critical to our well-being, and any effort to increase the supply of oxygen to our body and especially to the brain will pay rich dividends. Yogis realized the vital importance of an adequate oxygen supply thousands of years ago. They developed and perfected various breathing techniques. These breathing exercises are particularly important for people who have sedentary jobs and spend most of the day in offices. Their brains are oxygen starved and their bodies may be just 'getting by'. They feel tired, nervous and irritable and are not very productive. On top of that, they sleep badly at night, so they get a bad start to the next day continuing the cycle. This situation also lowers their immune system, making them susceptible to catching colds, flu and other 'bugs'.

Oxygen is the most vital nutrient for our bodies. It is essential for the integrity of the brain, nerves, glands and internal organs. We can do without food for weeks and without water for days, but without oxygen, we will die within a few minutes. If the brain does not get proper supply of this essential nutrient, it will result in the degradation of all vital organs in the body.

The brain requires more oxygen than any other organ. If it doesn't get enough, the result is mental sluggishness, negative thoughts and depression and, eventually, vision and hearing decline.

For a long time, lack of oxygen has been considered a major cause of cancer. Even as far back as 1947, work done in Germany showed that when oxygen was withdrawn, normal body cells could turn into cancer cells.

Similar research has been done with heart disease. It showed that lack of oxygen is a major cause of heart disease, stroke and cancer. The work done at Baylor University in the USA has shown that you can reverse arterial disease by infusing oxygen into the diseased arteries.



Breathe Beyond Existence

Oxygen Purifies the Blood Stream

One of the major secrets of vitality and rejuvenation is a purified blood stream. The quickest and most effective way to purify the blood stream is by taking in extra supplies of oxygen from the air we breathe. The breathing exercises described in here are the most effective methods ever devised for saturating the blood with extra oxygen.

Oxygen burns up the waste products (toxins) in the body, as well as recharging the body's batteries (the solar plexus). In fact, most of our energy requirements come not from food but from the air we breathe.

By purifying the blood stream, every part of the body benefits, as well as the mind. Your complexion will become clearer and brighter and wrinkles will begin to fade away. In short, rejuvenation will start to occur.

Medical Science Verifies Oxygen's Importance

Scientists have discovered that the chemical basis of energy production in the body is a chemical called Adenosine Triphosphate (ATP). If something goes wrong with the production of ATP, the result is lowered vitality, disease and premature ageing.

Scientists have also discovered that oxygen is critical for the production of ATP; in fact, it is its most vital component.

Yoga permits us to tap into this vital nutrient.

What's Wrong With The Way We Breathe?

Generally our breathing is too shallow and too quick. We are not taking in sufficient oxygen and we are not eliminating sufficient carbon dioxide. As a result, our bodies are oxygen starved, and a toxic build-up occurs. Every cell in the body requires oxygen and our level of vitality is just a product of the health of all the cells.

Shallow breathing does not exercise the lungs enough, so they lose some of their function, causing a further reduction in vitality.

Animals which breathe slowly live the longest; the elephant is a good example.

We need to breathe more slowly and deeply. Quick shallow breathing results in oxygen starvation which leads to reduced vitality, premature ageing, poor immune system and a myriad of other factors.



Breathe Beyond Existence

The Medical Viewpoint on Fast, Shallow Breathing

Modern science agrees with the ancient yogis on the subject of shallow breathing. An editorial in the Journal of the Royal Society of Medicine suggested that fast, shallow breathing can cause fatigue, sleep disorders, anxiety, stomach upsets, heart burn, gas, muscle cramps, dizziness, visual problems, chest pain and heart palpitations.

Scientists have also found that a lot of people who believe they have heart disease are really suffering from improper breathing.

Importance of Breathing Through The Nose

The first rule for correct breathing is that we should breathe through the nose. This may seem obvious, but many people breathe principally through the mouth. Mouth breathing can adversely affect the development of the thyroid gland. It can retard the mental development of children.

The nose has various defence mechanisms to prevent impurities and excessively cold air entering the body. At the entrance to the nose, a screen of hairs traps dust, tiny insects and other particles that may injure the lungs if you breathe through the mouth. After the entrance of the nose, there is a long winding passage lined with mucus membranes, where excessively cool air is warmed and very fine dust particles that escaped the hair screen are caught. Next, in the inner nose are glands which fight off any bacilli which have slipped through the other defences. The inner nose also contains the olfactory organ-our sense of smell. This detects any poisonous gases around that may injure our health.

The yogis believe that the olfactory organ has another function: the absorption of prana from the air. If you breathe through the mouth all the time, as many people do, you are cheating yourself of all this free energy (prana). The yogis say this is a major factor in lowered resistance to disease and impairs the functioning of your vital glands and nervous system. Add to this the fact that pathogens can enter the lungs via mouth breathing, and you can see that it's impossible to be healthy, not to mention vital, if you breathe through the mouth.

It is easy to break the habit of breathing through the mouth. Just keep your mouth closed and you will automatically breathe through your nose!

Summary: Benefits of Deep Breathing

We will now summarize the benefits of deep breathing. Deep breathing produces the following benefits:

- Improvement in the quality of the blood due to its increased oxygenation in the lungs. This aids in the elimination of toxins from the system.



Breathe Beyond Existence

- Increase in the digestion and assimilation of food. The digestive organs such as the stomach receive more oxygen, and hence operates more efficiently. The digestion is further enhanced by the fact that the food is oxygenated more.
- Improvement in the health of the nervous system, including the brain, spinal cord, nerve centers and nerves. This is due again to the increased oxygenation and hence nourishment of the nervous system. This improves the health of the whole body, since the nervous system communicates to all parts of the body.
- Rejuvenation of the glands, especially the pituitary (growth/blood pressure/childbirth/sexual functions/metabolism/temperature and water levels) and pineal (wake/sleep) glands. The brain has a special affinity for oxygen, requiring three times more oxygen than does the rest of the body. This has far-reaching effects on our well being.
- Rejuvenation of the skin. The skin becomes smoother and a reduction of facial wrinkles occurs.
- The movements of the diaphragm during the deep breathing exercise massage the abdominal organs - the stomach, small intestine, liver and pancreas. The upper movement of the diaphragm also massages the heart. This stimulates the blood circulation in these organs.
- The lungs become healthy and powerful, a good insurance against respiratory problems.
- Deep, slow, yoga breathing reduces the work load for the heart. The result is a more efficient, stronger heart that operates better and lasts longer. It also means reduced blood pressure and less heart disease. The yoga breathing exercises reduce the work load on the heart in two ways. Firstly, deep breathing leads to more efficient lungs, which means more oxygen is brought into contact with blood sent to the lungs by the heart. So, the heart doesn't have to work as hard to deliver oxygen to the tissues. Secondly, deep breathing leads to a greater pressure differential in the lungs, which leads to an increase in the circulation, thus resting the heart a little.
- Deep, slow breathing assists in weight control. If you are overweight, the extra oxygen burns up the excess fat more efficiently. If you are underweight, the extra oxygen feeds the starving tissues and glands. In other words, yoga tends to produce the ideal weight for you.
- Relaxation of the mind and body. Slow, deep, rhythmic breathing causes a reflex stimulation of the parasympathetic nervous system, which results in a reduction in the heart rate and relaxation of the muscles. These two factors cause a reflex relaxation of the mind, since the mind and body are very interdependent. In addition, oxygenation of the brain tends to normalize brain function, reducing excessive anxiety levels.

Nadi Sodhana (Alternate Nostril Breathing)

If you don't do anything else, this is a simple yoga breathing exercise that can be done virtually anywhere, anyplace. You will be glad you did. It is simply dynamic!



Breathe Beyond Existence

The name alternate nostril breathing is due to the fact that we alternate between the two nostrils when we do the breathing. Yogis believe that this exercise will clean and rejuvenate your vital channels of energy, thus the name nadi sodhana (purification of nadis or channels).

With this exercise, we breathe through only one nostril at a time. The logic behind this exercise is that normal breathing does alternate from one nostril to the other at various times during the day. In a healthy person the breath will alternate between nostrils about every two hours. Because most of us are not in optimum health, this time period varies considerably between people and further reduces our vitality. According to the yogis, when the breath continues to flow in one nostril for more than two hours, as it does with most of us, it will have an adverse effect on our health. If the right nostril is involved, the result is mental and nervous disturbance. If the left nostril is involved, the result is chronic fatigue and reduced brain function. The longer the flow of breath in one nostril, the more serious the illness will be.

Benefits

1. The exercise produces optimum function to both sides of the brain: that is optimum creativity and optimum logical verbal activity. This also creates a more balanced person, since both halves of the brain are functioning properly.
2. The yogis consider this to be the best technique to calm the mind and the nervous system.

The Scientific Confirmation of Alternate Nostril Breathing

Medical science has recently discovered the nasal cycle, something that was known by the yogis thousands of years ago. Scientists have recently found that we don't breathe equally with both nostrils, that one nostril is much easier to breathe through than the other at any particular time and that this alternates about every three hours. The yogis claim that the natural period is every two hours, but we must remember these studies were done on people who do not have an optimum health level.

Scientists also discovered that the nasal cycle corresponds with brain function. The electrical activity of the brain was found to be greater on the side opposite the less congested nostril. The right side of the brain controls creative activity, while the left side controls logical verbal activity. The research showed that when the left nostril was less obstructed, the right side of the brain was predominant. Test subjects were indeed found to do better on creative tests. Similarly when the right nostril was less obstructed the left side of the brain was predominant. Test subjects did better on verbal skills.

Medical science has not quite caught up with the ancient yogis yet. The yogis went one step further. They observed that a lot of disease was due to the nasal cycle being disturbed; that is, if a person breathed for too long through one nostril. To prevent and



Breathe Beyond Existence

correct this condition, they developed the alternate nostril breathing technique. This clears any blockage to air flow in the nostrils and re-establishes the natural nasal cycle. For example, the yogis have known for a long time that prolonged breathing through the left nostril only (over a period of years) will produce asthma. They also know that this so-called incurable disease can be easily eliminated by teaching the patient to breathe through the right nostril until the asthma is cured, and then to prevent it recurring by doing the alternate nostril breathing technique. The yogis also believe that diabetes is caused to a large extent by breathing mainly through the right nostril.

Technique

In Anuloma Viloma you adopt the Vishnu Mudra with your right hand to close/open your nostrils. For Vishnu Mudra extend the thumb, ring finger, and little finger of your right hand and fold down your other two fingers into your palm. Rest the left hand on your left knee.

To start:

Inhale through both nostrils before closing the right nostril and exhaling fully through the left nostril.

Then:

1. Keeping the right nostril closed with your right thumb, inhale through the left nostril. Do this to the count of four seconds.
2. Immediately close the left nostril with your right ring finger and little finger, and at the same time remove your thumb from the right nostril, and exhale through this nostril. Do this to the count of eight seconds. This completes a half round.
3. Inhale through the right nostril to the count of four seconds. Close the right nostril with your right thumb and exhale through the left nostril to the count of eight seconds. This completes one full round.

To progress:

Once you are comfortable with the above practise introduce breath retention. After each inhalation close both nostrils and retain the breath. The ratio to use is 1-4-2 i.e

in the example above, inhale for four, retain for sixteen, and exhale for eight. Find what is comfortable for you but keep to the 1-4-2 ratio!

Start by doing three rounds, adding one per week until you are doing as many rounds as is comfortable.



Breathe Beyond Existence

Alternate nostril breathing should not be practiced if you have a cold or if your nasal passages are blocked in any way. Forced breathing through the nose may lead to complications. In pranayama it is important to follow this rule: under no circumstances should anything be forced. If you use the nostrils for breath control they must be unobstructed.

Kapalabhati (Skull Shining) Pranayama

Practicing Kapalabhati on a regular basis results in a shining face glowing with inner radiance. Kapalabhati clears the stale and residual air from the entire respiratory system. It purifies the blood and super-saturates the cells with both breath and prana (energy). It also strengthens abdominal muscles, stimulates cellular metabolism and improves the bowel movement. Kapalabhati also strengthens the heart and nervous system. It helps to raise energy to the brain and prepares your mind for meditation.

Kapalabhati should, ideally, be done daily and regularly, particularly after Neti and prior to Pranayama.

Why resort to botox injections and other expensive chemical or surgical procedures to get rid of your age lines, when there is such a simple and natural alternative available to you in the form of 'Kapalabhati'. This pranayama will not only improve your overall health but also gift you with a luminous forehead and a glowing skin.

One of the prominent yogis from India, Yogiraj Dr. Om Prakash ji, who was on a US visit last summer, presented a series of yoga sessions at the Bhavan Cultural Hall in Morrisville, NC. He highlighted the value of pranayama (breathing practices) in general as an integral component of any yoga routine. However, he specifically emphasized the importance of Kapalabhati and called it "sarvaroga nivarini" which literally means '(a practice) that can heal all types of ailments'. When practiced regularly under proper guidance it can bring about radiant health and provide other benefits at a more subtle level. Another very famous yogi from India, Swami Ramdev, who has shot to fame via his daily TV programs, calls it 'the Sanjeevani' which is an herb that can supposedly bring even a dead body back to life. This is based on a famous parable in Ramayana - "When Lakshmana was wounded, Hanuman flew to the Himalayas for the medicinal herb Sanjeevani. Unable to identify the Sanjeevani, he wrested the entire mountain from the land and carried it to Lakshmana". Based on these strong statements from prominent yogis of today, it is easy to see why it is important to include this practice in your daily yoga routine.

In the classical Hatha Yoga text "Hatha Yoga Pradeepika", Kapalabhati is described as one of the six cleansing kriyas (shatkarma). However, because it involves manipulation of the breath and offers great benefits, it is widely practiced as a part of the pranayama techniques.



Breathe Beyond Existence

Not sure how to pronounce kapAlabhAti? The 'A' represents a long vowel sound, somewhat like the 'a' in 'fast'.

Contraindications

Before I describe the technique it is important to understand that people with the following conditions should not practice kapalabhati - cardiac problems, nasal congestion, severe cold, severe headache, abdominal ulcers, hernia. People with high blood pressure should either refrain from it or practice a milder version of the technique.

Pregnant women and those who have had recent abdominal surgery should also refrain from this practice.

One cautionary note - practice kapalabhati on an empty stomach, preferably in the morning. However, if your schedule only allows you to practice it during the day/evening, then you should give a gap of at least 2.5 hours after eating a meal.

The Technique

Now let us turn our attention to the technique itself and learn how to practice it. Sit in any comfortable position with the spine erect. You can sit either cross-legged or in “vajrasana” (the diamond pose) or in any position that you feel comfortable in. If you have problem sitting on the floor, you can even sit in a chair, preferably with the spine erect and not resting against the back of the chair. Breathe normally for a few breaths. Once composed, you can begin by first exhaling and then inhaling half-way. First, exercise the diaphragm by exhaling suddenly and quickly through both nostrils while simultaneously drawing the abdominal muscles inwards and upwards. The brisk and vigorous exhalation produces a “puffing” sound. Allow the abdominal muscles to relax at the end of exhalation and let the inhalation happen automatically and passively. The rate of expulsion will vary from one individual to the next depending upon capacity. On the average, one can maintain a rate between 70 to 120 expulsions per minute (remember the normal breathing rate is 12 to 15 breaths per minute).

It is important to understand that you should not strain or become uncomfortable during the practice. If you begin to feel dizzy or uncomfortable in any way, it means that you are trying too hard or trying to breathe too forcefully. At this point stop the practice and sit quietly for some time before trying it again. Start with only 20-30 expulsions per round and try three rounds. Over a period of time, with practice, you can increase the number of breaths per round. A little rest can be taken in between the rounds according to your convenience. Throughout the exercise, the chest should be kept still without expansion or contraction and the shoulders should remain steady and relaxed. Only the diaphragm is used for breathing and not the upper chest. Once you have become familiar with the practise you can bring in retention of breath. After each round, finishing with a complete exhalation, take a few deep breaths before retaining the breath for as long as is



Breathe Beyond Existence

comfortable. After releasing the breath take a few breaths before commencing with the next round.

An Alternate Approach

Some of you might have some difficulty getting the technique right in the beginning. In that case, you can try this alternate approach. Put both your hands on your belly, just a little below the navel. Keep the belly soft. Now push your abdomen in with your hands and at the same time try to throw all the air out of the lungs in a forceful, brisk manner. At the end of the exhalation, allow the inhalation to happen passively. Repeat the pushing with the hands accompanied by expulsion of air and then passive inhalation. When this rhythm seems to become natural, you may try to remove the hands from the belly and continue with the practice.

Benefits of Kapalabhati

Kapalabhati helps clear mucous from the lungs. As air moves into the throat, it travels down the superior portion of the airway called the trachea. The walls of this single tubed airway consist of several layers, of which the innermost layer is lined with cilia cells. Cilia are microscopic, grass-like projections that continually beat and propel mucous that traps dust particles, bacteria and debris. This mucous is propelled by the cilia toward the pharynx where it is released by coughing or swallowing. Smoking inhibits and ultimately destroys cilia. When the cilia function, as described above, is lost, coughing is the only method of moving accumulated mucous out of the lungs. Because of the cleansing effect on the lungs, this practice is recommended for people who suffer from respiratory ailments like bronchitis, asthma, tuberculosis etc.

The force of the exhalations in Kapalabhati acts further on debris-filled mucous in the lungs and trachea. This additional force works with the cilia and helps move the mucous more readily up the airway against gravity. Coughing after Kapalabhati helps in releasing these impurities. In addition to removing mucous, Kapalabhati also helps expel more carbon dioxide and other waste gases from the cells and lungs compared to normal breathing.

The rapid and forceful movement of the abdominal muscles in Kapalabhati gives a massage to the internal organs. With each vigorous exhalation, the abdominal walls draw inwards applying pressure on internal organs. This pressure helps increase the circulation of blood flow into and out of abdominal organs. This massage also sends a direct pressure into the digestive system helping move remaining food and faecal matter through the intestines and colon. Kapalabhati helps in reducing the incidence of constipation. With this increased circulation of blood and material in the internal organs comes a release of toxins as well.



Breathe Beyond Existence

Literally, the word kapalabhati means 'skull shining' (kapaala = skull; bhaati = shining/polishing). Regular practice is supposed to clear and calm the mind and over a period of time, one develops a healthy natural glow on the face. It also brings about the state of 'pratyahara' (sense withdrawal) which prepares the mind for meditation.

The Retained Breath Exercise

Physiologists claim that the air breathed in should remain in the lungs for ten to twenty seconds to maximize the gaseous interchange in the lungs. The yoga practitioners devised an exercise in which the breath is retained for four times the duration of inhalation (about twelve to sixteen seconds) thousands of years ago. Yogis and pranayama followers claim that this exercise would take maximum advantage of the air inhaled.

Benefits of the Retained Breath Exercise

1. It provides the optimum supply of oxygen to the body. Even jogging and other aerobic exercise doesn't achieve this, since the breathing is quick and shallow and there is no retention of oxygen.
2. There is increased oxygenation of the blood.
3. The retained breath gathers up some of the waste matter of the body and expels it on exhalation.
4. The lungs increase their elasticity and capacity and become more powerful. This allows benefits to be enjoyed all day, not just during the exercise.
5. The exercise builds a bigger, more powerful chest and prevents, or helps to correct sagging breasts.

Technique

1. Sit up straight.
2. Inhale for four seconds. Expand your belly to a count of two seconds and then expand your ribs sideways for one second, and finally lift your chest and collar bone upwards for one second. This makes a total of four seconds.
3. Retain the breath for sixteen seconds. If you find this is difficult at the start, just hold for eight seconds, and gradually over a period of a few months build up to sixteen seconds.
4. Exhale for eight seconds. For the first six seconds, just allow the collar bone and ribs to relax, so the breath goes out automatically. For the last two seconds gently bring the stomach towards the spine to expel any remaining air from the lungs.

Repeat this exercise a few times the first week, and add one more round each week, until you are doing up to twenty rounds.

The yogi rule for the retention breath is that exhalation should be twice that of inhalation, and retention should be four times that of inhalation; that is, a ratio of 1:4:2.



Breathe Beyond Existence

The Walking Breathing Exercise

Walking Breathing exercise is done in exactly the same way as Rhythmic Breathing except that you do it while walking. Use each step as a count, as the pulse beat used in Rhythmic Breathing.

Stand erect, exhale first, then start walking, right foot first. Take four steps while inhaling, hold the breath in for two steps, exhale for four steps, and hold the breath out for two steps. Without stopping, continue the routine: inhale on four steps, hold the breath in for two steps, and so forth. Do not interrupt the walking-keep it rhythmical. The breathing should be done in one continuous flow: do not inhale in four short breaths, a mistake which many beginners tend to make. Inhale one deep breath to the count of four, hold it to the count of two, exhale it to the count of four, and again hold the emptiness to the count of two. This completes one round. Make five such rounds a day the first week, adding one round per week.

If you feel that four steps are too long for you, count three steps and hold one. If, on the contrary, four are not enough and you feel you want to continue the inhalation, take six steps or even eight, and hold the breath on a count of three or four steps respectively. In either case, you should take an even number of steps while breathing in and out, as the retention is done in half the time taken for inhalation or exhalation.

You can do the Walking Breathing exercise at any other time while you are exercising, walking, especially when the air is clean-in a park, a forest, or at the seashore. You can do it while walking to your car or bus, descending a staircase, on your way to pick up your mail from the letter box, during a coffee break in your office, in fact, whenever you think of it. Simply interrupt your usual walking tempo, stop to inhale and exhale deeply. Then start rhythmic breathing to the count of slow and even steps.

Taoist Relaxation Yoga

Although, in a sense, all yogic breathing exercises may be employed for relaxing, as well as revitalization and increased self-control, Taoist Yoga is especially good for relaxation and to remove anxiety. It gives prompt, quick relief. However, the effects can be quite temporary. Therefore, special efforts must be made to prolong and deepen these results by subtle, attentive, repeated, devotion.

The Taoist relaxation method is very simple: "Listen to your breathing." Nothing more is needed, except persistence and patience in such listening. If you do not persist, your attention will stray back into anxieties. Be patient; impatience merely adds to anxieties. Patience is an attitude which undercuts the roots of anxiety. The healing, revitalizing and relaxing effect of attending to one's breathing may be observed by giving it a trial. Breathing involves inhalation (yang) followed by exhalation (yin), that these succeed each other in a natural, rhythmic, continuing and reliable order. When you devote



Breathe Beyond Existence

yourself to Nature's Way (Tao) all goes well. When you attend to your breathing, you tend to take deeper breath and you also gradually prolong it, and, in the process quiets your fluttering mental activities as the mind harmonizes itself with the slower, and slowing, rhythm of the breathing. By listening, you must focus your attention on the sound; thereby withdrawing it from whatever has been disturbing, exciting and fatiguing the mind. Of all the ways for seeking relaxation, none can be more harmless than this. No outside help, no drugs, no devices, no special skills, no muscular effort, no training period, no involved instruction are needed for successful use. It can be used anytime, anywhere, by anyone who has a few moments to spare.

Unfortunately, most of those who begin to try out this Taoist technique will give up too soon and drift into the conclusion that their experiment was a failure. How long does one have to listen to the breathing? Why not as long as he feels fatigue? If the method is to be effective, you must persist until you feel the effects. Keep listening until "you finally do not hear it." Listen to your breathing with undivided attention until you do not hear it any more. When you have persisted with patience your anxieties should be considerably lessened. There is nothing, of course to prevent you from arousing them again, when you turn your attention back to their initiating objects, persons or activities. But one who has pacified himself with such a relaxing pause should have a bit more reserve energy to cope with his task. The traditional Taoist seeks self-containment; this technique requires nothing more than opportunity and will to escape from the demands made upon self by externals, and ability and will to listen to one's own self-made sounds until they can be heard no more. Whether one then sleeps or finds his attention occupied by other things, the surrendering of his attentiveness to the sounds of his breathing has occurred without further mental disturbance.

Chang said merely, "Listen to your breathing. Till finally you do not hear." This intuitively clear, common-sense advice can only be distorted by complex elaboration. Chang demonstrated with a slow breathing cycle and with a manner in which an enveloping quiescence was intuitively sensed. One who cannot grasp what is simple can hardly expect to comprehend the same when it has been made complex.

Nothing would be done at all if a man or woman waited until they could do it so well that no one could find fault with it. *Cardinal Newman*

