



ECONOMY RESPIRATORY

BREATHING IS LIFE AND LIFE IS BREATHING!

Breathing is much more than an essential function for keeping us alive. In fact, by breathing in oxygen we nourish our cells, and by breathing out we cleanse our bodies of carbon dioxide and toxins that can affect our health. I speak of the benefits of breathing with the conviction of someone who has studied a lot about the subject and has seen thousands of students achieve positive results as they advanced in the practice of yoga.

The ancient yoga teachings indicate the benefits of conscious breathing, so much so that in Sanskrit, life and breath are the same word: prana. In practice, we have a set of techniques that help regulate the breathing rhythm in a balanced and conscious way, better known as pranayama, whose function is to connect body and mind. When you do yoga, your breathing is naturally altered by the movements, muscle activation, the change between contraction and release of air, and the feeling of tranquility.

In the Kaiut Yoga method we dedicate special attention to pranayama to achieve better results. Even though it is safe, I consider it important to apply the correct technique to avoid possible undesirable effects, such as fear, anxiety, or panic attacks. For this reason, I advise my teachers to be extremely careful when introducing the exercises, teaching the student never to control his breathing, but to observe and listen to it in order to understand the real emotional state he is in.



It is a fact that our breathing is closely related to our emotions and acts as a guide that reveals how we are feeling. For example, when we are anxious, irritated or nervous we breathe quickly and shallowly. However, if we are relaxed, calm and happy, our breathing is smoother. As such, in the method our aim is the re-education of breathing to regulate the nervous system and work directly on the student's emotions, building the basis for better health and life. One of the first concepts we teach is to perceive breathing in a more fluid way, without analysis, judgments, or interference.

Over the years, I have observed real results that have left me very satisfied and aware that in the Kaiut Yoga method we are taking a correct approach to breathing. Contrary to what many people think, deep and wide breathing is less necessary and its gains are questionable. I like to insist on the care to introduce the breathing exercises because I know that if a teacher or a method enters with an inadequate technique can

compromise the progress of the practice. It is worth remembering that our modern lifestyle means we underutilize our rib cage, diaphragm and accessory muscles of the respiratory process. In addition to these characteristics, we also live in a period in which many people suffer from chronic anxiety. Therefore, deepening the understanding of breathing and the benefits it can bring is a precious resource. What follows is the most modern and transformative information we have on the subject of breathing. At the end of these pages, I provide some exercises that will serve as strong allies to improve your vital energy. Enjoy the reading and be sure to practice them.

FRANCISCO KAIUT



BREATHE, *REGULATE THE AUTONOMIC NERVOUS SYSTEM, AND LIVE BETTER*



Greatest challenges of modern society is to maintain emotional balance, and there is no shortage of reasons why. From work pressures to personal issues, the human being is faced with endless demands, which has all too often negative consequences on the health of body and mind. The good news is that our breath—the act of breathing, is an excellent resource for regulating the autonomic nervous system, which is responsible for our vital functions and works as a command center for our emotions. Through the right approach to the breath we can mitigate the symptoms of everyday stress.

The autonomic nervous system is divided into two parts, sympathetic and parasympathetic, with distinct functions. The first activates our state of alertness, while the second generates a sense of calm. In situations of conflict or adversity,

both emotional and physical, the sympathetic nervous system acts upon the threat and prepares us to fight or flee. When the threat has dissipated the parasympathetic nervous system becomes more dominant bringing the organism back to more balanced, harmonious state—one of rest, repair and growth.

When we breathe slowly and deeply, we reduce the heart rate and the release of adrenaline, calming the sympathetic part and elevating the parasympathetic. This is how the regulation of the autonomous nervous system occurs, contributing to our health. This is because if we live in situations of continuous threats, without regulation, our health can be affected.

With the sympathetic nervous system operating at full throttle, consequently the production of adrenaline increases, and the arterial vessels narrow, increasing blood pressure. Chronic stress or the tensions experienced in everyday life can increase the muscle tension of the entire body and lead to pain, such as in the lumbar spine. With shorter breaths, it is possible to tense the diaphragm, which is connected to the spine, and relieve tension and pain.





The benefits of breathing are reported in numerous scientific studies, which aligns with the yogis of the past who also indicated the value of breathing for our wellbeing and in times of crisis. In a study published in the Harvard Business Review titled Why breathing is so effective in reducing stress, researchers Emma Seppälä, Christina Bradley, and Michael R. Goldstein explain that in states of high stress, the prefrontal cortex (the area of the brain responsible for rational thinking) is affected and we are unable to regain control or act with the necessary dose of emotional intelligence to resolve the issue. With the right breathing techniques, in a way, you can have mastery over your mind.

The scientists explain in the article that "research shows that different emotions are associated with different ways of breathing, so changing the way we breathe can alter the state we feel. For example, when you feel joy, your breathing will be regular, deep, and slow. If you feel anxious or angry, it will be irregular, short, fast, and shallow. Therefore, by following breathing patterns associated with different emotions, you will begin to feel those corresponding emotions."

In fact, when we change the rhythm of our breathing, we activate a state of relaxation, decrease our heart rate, and stimulate the vagus nerve - which regulates sensory and motor functions and is related to the parasympathetic nervous system. Thus we relax and start to think more rationally.

Harvard researchers recommend changing the ratio between inhaling and exhaling as a mechanism to calm emotions. This is because when you breathe in, your heart rate increases, while when you breathe out, it slows down. And if you exhale for twice as long as you inhale, for a few minutes it will cause the nervous system to calm down. According to them, the antidote for anxiety is to lengthen the exhalation.



"[...] HARVARD RESEARCHERS RECOMMEND CHANGING THE RATIO BETWEEN INHALING AND EXHALING AS A MECHANISM TO CALM EMOTIONS. THIS IS BECAUSE WHEN YOU BREATHE IN, YOUR HEART RATE INCREASES, WHILE WHEN YOU BREATHE OUT, IT SLOWS DOWN... "



Another example that helps us understand the power of breathing comes from John McDonough, professor of public health in the Department of Health Policy and Management at Harvard TH Chan School of Public Health. He uses yoga breathing techniques on a group of inmates at Boston's Suffolk County House of Corrections, and in an article published on the university's website, he recounted that the inmates reported that the practice helped them reduce stress, improve sleep, and relieve pain. Since 2017, McDonough has been going to the prison accompanied by his team to teach yoga classes and help the students by teaching them how to breathe better.

In the Kaiut Method, we consider that every alteration in our breathing is accompanied by an alteration in our nervous system. During practice we engage with breathing first through non-analytical awareness of the breath—the breath of the pose. For most people, simply, paying attention to the breath enables people to have a positive influence on their nervous system, brain and emotions, relieving chronic stress and emotional swings. In this process, the regulation of the nervous system happens because biomechanically we are generating a reorganization of the pelvic and scapular girdles, girdles that contain all the structures responsible for the respiratory processes.



INCREASE YOUR VITAL ENERGY WITH BREATHING

We have not been brought up to be aware of the metabolic processes that breathing encapsulates. As a result we can have low energy levels, erratic emotional states, and be overwhelmed by negative stress. Yes, incorrect breathing or under-utilization of respiratory capacity affects our health.

In the book *The Advantages of Oxygen*, published by CRV, breathing instructor Patrick McKeown explains that a large part of individuals in modern society do not breathe correctly, or rather, out of touch with a natural way of breathing. This change has been brought about by chronic stress, sedentary lifestyles, unhealthy diets, and overheated homes, creating poor breathing habits. As a consequence, we have lethargy, weight gain, insomnia, respiratory or even heart diseases. If we look back to our ancestors, their lifestyle led to an efficient breathing pattern.

In our modern life, we breathe more air than we need. McKeown makes it clear that too much oxygen in the lungs is not healthy for our bodies and that ideally we should have light breathing, as too much causes the airways to narrow resulting in limiting the body's ability to oxygenate itself and constricting the blood vessels, reducing the flow of blood to the heart, other organs and muscles.

The ratio between the amount of oxygen used by our organs, muscles, and tissues is not equivalent to the amount of oxygen in the blood. The specialist says that the red blood cells in our body are saturated with between 95-99 percent oxygen, which is enough for us to exercise intensively. Actually, it is the amount of carbon dioxide (CO₂) in the blood that determines how much oxygen the body can use. Contrary to what most people think, this is not a useless gas. It enables the release of oxygen from red blood cells to be metabolized by the body, a process known as the Bohr Effect.



Understanding this mechanism can help you breathe better and achieve better health. By breathing correctly it is possible to retain the necessary amount of carbon dioxide, and breathing becomes quieter, more controlled, and rhythmic. While excessive breathing is heavy, intense, and irregular, it releases more carbon dioxide and causes the body to search for more oxygen.

The breathing instructor explains that by breathing better, we increase the amount of carbon dioxide in the body, so the muscles and organs receive more oxygen, including the heart and brain. As a result, the individual's physical capacity expands and the body functions at peak fitness.

The issue is that most individuals think that by breathing a larger amount of air it is possible to improve the oxygenation of the blood. According to him, it is physiologically impossible to increase blood oxygen saturation in this way, because the blood is almost always fully saturated. McKeown explains that at rest the breathing volume for a person without breathing problems varies between 4 and 6 liters of air per minute, i.e. an almost complete oxygen saturation of 95 to 99 percent.

Since oxygen is continuously diffusing from the blood into the cells, it is not always possible to have 100% saturation. If this were to happen, it could suggest that the bond between the red blood cells and the oxygen molecules is too strong,

and this would reduce the ability of the blood cells to deliver oxygen to muscles, organs, and tissues. The human body needs the blood to release oxygen, not hold it. Breathing is a continuous cycle, with air flowing through the body.

Breathing more is not the best alternative for our body. Anxiety and hyperventilation have similar characteristics, and in some cases even cause dizziness, headaches, chest pains, and mental confusion. The symptoms are so similar that it is difficult to know whether it is the hyperventilation that is causing the anxiety or vice versa.

With hyperventilation, the volume of carbon dioxide in the blood is reduced, narrowing the blood vessels and reducing the oxygen supply to the brain. We then enter a circle of problems, as the brain with less oxygen becomes more agitated, generating more anxiety. Breathing more than necessary is harmful because it directly affects the delicate balance of oxygen-carbon dioxide exchange in our body.

Keep in mind that breathing is much more than breathing in and out automatically. The flow of air through the body works like an orchestra that involves the brain, lungs, heart, blood, and muscles in harmony.

THE POWER OF CO₂



For traditional medicine, a healthy adult, at rest, should breathe in one minute 10 and 12 times, considering inspiration and expiration. In his book, McKeown explains that with each breath, we fill the body with about 500ml of air, i.e. 5 to 6 liters of air per minute. He points out that despite this pattern, if a person breathes 20 times in one minute it doesn't mean that he is overbreathing. Also, a reduced frequency can have the same effect if an individual is taking in too much air with each breath; 10 long 1000 ml breaths would also be evidence of excessive breathing.

McKeown clarifies that respiration rate and volume are determined by receptors in the brain with the function of monitoring the concentration of carbon dioxide and oxygen in the blood, as well as the pH level. As the volume of dioxide increases, they adjust breathing to get rid of the excess gas. In this equation it is necessary to consider that dioxide is the end product for the process of breaking down the fats and carbohydrates that humans eat.

CO₂ is the door that lets oxygen reach your muscles. If it is not fully open, the amount that will pass through will be lower, and as a consequence we will be more breathless, we may have cramps and other physical issues. However, if it is open, oxygen will flow through the door, allowing the body to perform some tasks more easily, such as physical exercise. Always considering that the necessary amount of air will enter through the door.

One of the first steps to more efficient breathing is to breathe correctly, and this involves the nose, not the mouth. All human beings are born breathing through the nose - this healthy habit has been part of our behavior for thousands of years. The suspicion is that our primitive ancestors, when faced with dangers, changed from nasal to mouth breathing as a means to inhale a greater volume of air in order to cope with emergencies or intensities.

The region of the nostrils is formed by the lateral wall of the nose formed by three structures called turbinates and separated by three meatuses. In turn, these structures are vascularized and have the ability to distend, increasing the area of the nasal cavity according to the body's needs. They are also lined by ciliated respiratory epithelium that has the function of cleaning the air. Thanks to these characteristics, the nose is an essential part of the human body. Through the nasal vestibule the air enters, is warmed, humidified, and, in a way, sterilized before it reaches the lungs and nourishes the cells with oxygen.



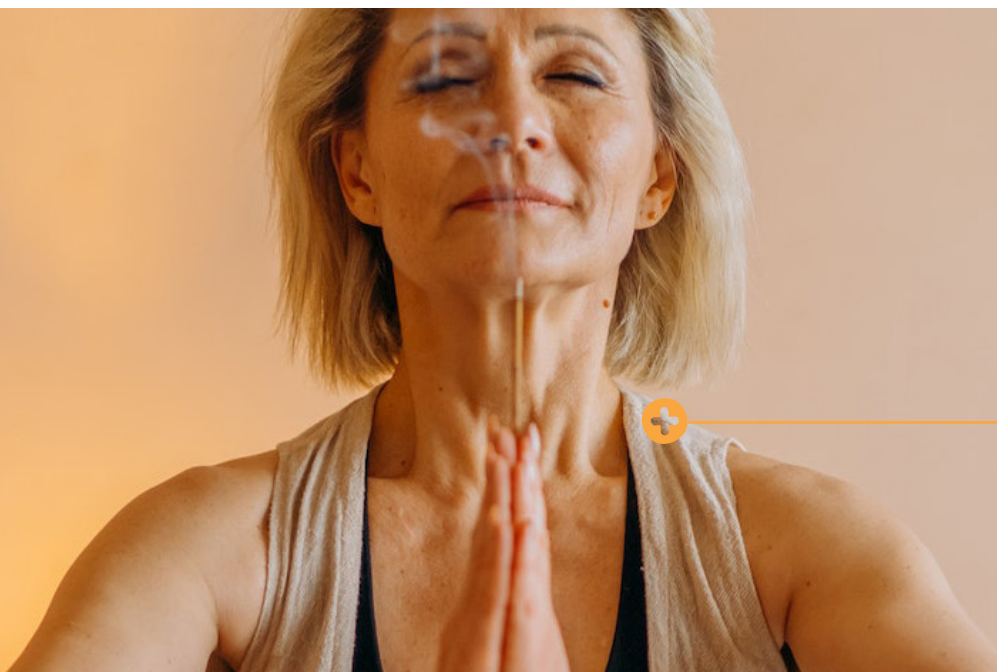
Breathing through the nose generates regularity, calm, and stability by using the diaphragm which, in turn, is our main respiratory muscle and, when used correctly, makes breathing more efficient and deeper. It is worth noting that according to McKeown, deep breathing is breathing below the full depth of the lungs. To know what correct breathing looks like, he recommends observing the natural way babies breathe. With each inhale and exhale they expand and contract their abdomen, doing this gently and quietly, without effort. It is important to know that even the quietest breathing triggers the diaphragm - which is located between the chest and the abdomen.





In the book *Yoga For Laymen*, Georg Feuerstein and Larry Paune explain that, from a psychological point of view, individuals use the diaphragm as a buffer to restrict the unwanted emotions of anger and fear. This is when you don't let the flow of air follow the path through the body, and this chronic contraction of the diaphragm makes it inflexible and blocks the flow of energy between the abdomen (the lower intestinal region) and the thorax (the feelings associated with the heart). With yoga practice and conscious breathing, it is possible to recover the flexibility and function of the diaphragm and make the circulation of physical and emotional energies more fluid.

Remember that when breathing through the mouth, you will activate the upper part of the chest, making larger inhalations, contrary to what many imagine, the absorption of oxygen into the blood will be lower. Almost always, individuals who have mouth breathing as a habit, suffer more from lack of energy, difficulty concentrating, and bad mood. Other problems caused by mouth breathing are general dehydration, acidification of the mouth that causes tooth decay and gum disease, and increased snoring and sleep apnea.



Among the advantages of breathing through the nose, according to McKeown, are: humidifying the air that enters the lungs, removing a significant amount of germs and bacteria from the air, and, during physical exercise, amplifying the result to the point of producing aerobic effect. Nasal breathing carries more nitric oxide into the lungs and blood.

Nitric oxide is important in vasoregulation, homeostasis, neurotransmission, and immunity. It also helps prevent high blood pressure, lower cholesterol, keep arteries young and flexible, and prevent clogging of the arteries with plaque and clots. Taken together, these benefits reduce the risk of heart attack and stroke. Basically, nitric oxide acts as a natural blood barrier,



increasing heart health. It does this by sending a signal to the blood vessels to relax and dilate, but if there is too little nitric oxide they contract, and the heart needs to increase pressure to send blood throughout the body. McKeown says that breathing gently and calmly through the nose increases the volume of the gas and allows it to be picked up and transported into the lungs and blood.

BREATHING PRACTICE FOR BETTER HEALTH


As we saw above, breathing correctly is fundamental to gaining vitality and health. But how do you achieve these benefits with yoga practice? At the Kaiut Method, we have had excellent results with our students over the years because we engage the breathing process in distinct, progressive phases. Our focus is to present more than just breathing exercises; through them, we show how the respiratory system works, and get the most out of this vital function of the human body.

NON-ANALYTICAL PERCEPTION

The first step is non-analytical perception. This can be a difficult stage, but it is extremely important. Here you need to perceive the breath in a natural way, without intellectualizing, analyzing or interfering.

Here it is important to note that breathing is a function controlled by the autonomic nervous system through a nerve center located in the brainstem area. It is from here that the nerves that take care of the contraction of the respiratory muscles (diaphragm and intercostal muscles) start, sending nerve signals down the spinal column that are distributed throughout the body, oxygenating our cells.





" [...] AT THE KAIUT METHOD, WE HAVE HAD EXCELLENT RESULTS WITH OUR STUDENTS OVER THE YEARS BECAUSE WE ENGAGE THE BREATHING PROCESS IN DISTINCT, PROGRESSIVE PHASES."

As already mentioned, the autonomic nervous system is divided into two parts, the sympathetic and the parasympathetic. When you breathe through your nose, you send a signal to the brain to trigger the parasympathetic mode, because the nerve endings are in the lower lobes of the lungs. The message is that the body is not in danger, so we don't trigger the sympathetic portion and promote the regulation of the autonomic nervous system..

Through practicing non-analytical perception of the breath synapses in our brain are consolidated, that is the messages sent by neurotransmitters between one neuron and another, or from neuron to muscle cell. The result is that perception of breathing becomes more refined and triggers a regulated functioning of the whole body.

To practice non-analytical perception:

- + Try to lie down on the bed, floor or carpet and focus only on your breathing, without controlling it, just perceiving what is happening;
- + You might pay attention to the flow of air moving in and out of your nose or another area of the body that you can feel the breath.

After a period of practicing non-analytical perception—which varies from student to student, comes essential breathing.







EXERCISES


 Two women are shown in profile, leaning against a cork wall. The woman on the left has long, wavy white hair and is wearing a black long-sleeved shirt. The woman on the right has short, spiky white hair and is wearing a white t-shirt. Both have their eyes closed and a serene expression, suggesting they are in a meditative or breathing practice. The background is a textured cork wall.

ESSENTIAL BREATHING

With essential breathing you breathe in short, but sustained cycles, which gradually regulate the autonomic nervous system. It is abdominal, nasal, and very gentle, and should be practiced with the body at rest. Essential breathing promotes a balance between carbon dioxide and oxygen in the blood.

-  Try to keep your body relaxed while lying on a bed, the floor, or a mat;
-  Breathe in reduced cycles, i.e., decrease the volume of inhaled and exhaled air in relation to your normal breathing;
-  Be careful not to breathe in an insufficient amount of air that might make your body ask for a sigh or a deep breath;
-  Be sustainable, concentrate on abdominal, nasal, and gentle breathing.

DURATION: between 5 and 10 minutes





NATURAL FULL-BREATHING

Natural full-breathing is the extension of essential breathing. It needs to be sustainable, without filling the body with too large an amount of air so as not to overload the system and the practitioner gasping.

To practice natural-full breathing:

- ⊕ Do nasal and abdominal breathing, followed by thoracic breathing, with a natural pause and slow exhale;
- ⊕ The cycles should consist of inhale, pause, slow exhale, and pause again;
- ⊕ The goal is not to do a specific number of cycles in one minute, but it is possible to do 4 complete cycles in this period.
- ⊕ Be respectful of your limit, it should not be forceful, the evolution happens within the learning time of each student.

DURATION: between 5 and 10 minutes

From these foundational breathing practices, then practitioners can turn to those breathing exercises more commonly referenced in modern yoga—that of alternate nostril breathing and box or square breathing (sama vritti). Both of these can be practiced using the essential and full breath as the basis.





ALTERNATE NOSTRIL BREATHING

This is one of the most popular yoga breathing techniques. Its Sanskrit name, nadi shodhana, means channel of cleansing. This exercise helps relieve anxiety, increase concentration, and balance the two hemispheres of the brain. To practice alternate nostril breathing:

- + Sit comfortably on the floor or on a chair;
- + Check which nostril is most open and start the exercise from that one. For example, if more air comes through the left nostril, start with that one;
- + With the help of your index finger, close the nostril, inhale through the other one a sufficient volume of air without overloading the system, then release the air through the one that was closed;
- + Continue the exercise alternating the nostrils.
- + This practice should be done using essential breath at times, and full breath.

DURATION: repeat the process 10 to 15 times.



SQUARE BREATHING



This breathing exercise has been used by the United States Army since 1987 to train SEALs, the elite members of the U.S. Navy. This technique helps reduce anxiety, improve focus, reduce blood pressure, and lowers the heart rate. To practice square breathing:

- + The principle is to let the flow of your breath follow as if you were in a box;
 - + Breathe in through your nose for four seconds while visualizing going up one side of the box, gradually filling your lungs with air;
 - + Hold your breath for another four seconds, imagining going the length of the box;
 - + Exhale through your nose for another 4 seconds;
 - + Hold your breath for another 4 seconds, while imagining completing all sides of the box;
- + Continue repeating the complete cycles.

DURATION: repeat the process for 5 minutes.

Although the full benefits of breathwork are obtained and integrated through consistent asana practice, you don't have to limit yourself to yoga classes to practice breathing techniques. Take advantage of the many opportunities that present themselves during the day, such as while walking, on coffee breaks, or while shopping. The most important of these techniques is Essential Breathing, so do mostly that.

With this information and instruction on how to cultivate one's relationship to the breath, my hope is you are inspired and become more attentive in daily life of the breath and in practice, deepening one's embodied understanding that breathing is life and life is breathing.



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101

