

THE LITTLE BOOK OF BREATH



by **Michael Rosa Jorge**
of True Breathing

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INTRODUCTION

"The Perfect Man breathes as if he is Not Breathing at All"

-Lao Tzu

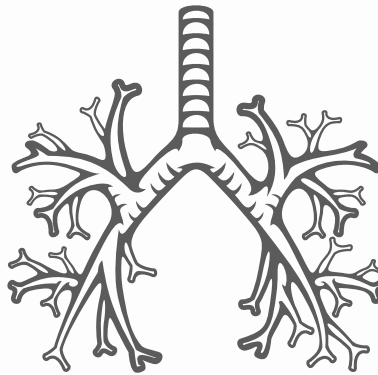
It is not exaggeration to say that how you breathe is more important to your health than what you eat, what supplements you take, or how you exercise. Just a few years ago this was something of a fringe idea, but recently it's begun to gain traction in the mainstream with scientists at prestigious universities like Stanford, and Columbia jumping on board.

The purpose of this short book is to explain why the way we breathe is so important, as well as to provide a guidebook for how to breathe better. People take breathing for granted, yet most people today are breathing in a way that leads to disease and a shorter life. At the end of the book I have provided a short selection of some of the best books on breathing for those who wish to learn more.

THE ROOT CAUSE OF CHRONIC DISEASE

"All chronic pain, suffering and diseases are caused from lack of oxygen at the cell level."

-Arthur C. Guyton, Textbook of Medical Physiology
World's best selling medical physiology textbook

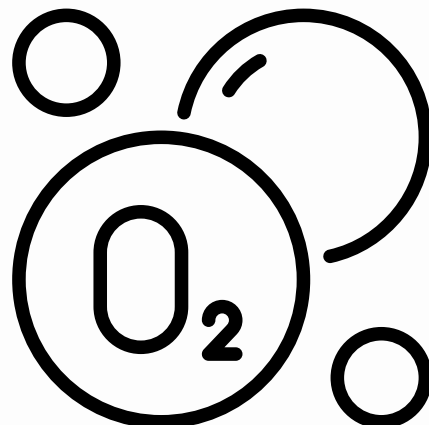


These words of Dr. Guyton represent solid, accepted medical science, but I'm guessing you've never heard that there's a single common cause to all chronic diseases, the diseases that most modern humans suffer and die from. I'll bet your doctor has never talked to you about changing how you breathe, which is the easiest way to boost oxygen at the cellular level and prevent chronic disease. In medical school, doctors learn about something called the Bohr effect, but very little emphasis is placed on it. In truth, the Bohr effect is the single most important physiological phenomenon when it comes to preventing chronic disease.

In 1904, Christian Bohr, Danish physiologist and father of renowned atomic physicist Niels Bohr, discovered that as concentrations of carbon dioxide increased in the blood, the hemoglobin in red blood cells would more readily release oxygen. Thus, the right amount of carbon dioxide is essential for proper oxygenation at the cellular level. If someone breathes too much, carbon dioxide is lost and the body's cells are starved of oxygen. Unfortunately, nearly everyone today is overbreathing at an alarming rate.

Today, people breathe two to three times more air than the people of one hundred years ago, which means most of us have much less carbon dioxide in our blood, and much less oxygen in our cells.

Changes in diet, a decrease in exercise, and modern orthodontic work have created a perfect storm that leads to an average respiration rate much higher than the average in the early twentieth century. Knowing that "all chronic pain, suffering and diseases are caused from lack of oxygen at the cell level," why isn't there more emphasis on increasing oxygen at the cell level to heal pain, ease suffering, and cure disease?





The most glaring reason is that our massive medical industrial complex has the wrong incentive structure. In our system, the more services rendered, the more surgeries performed, and the more pills taken, the more money is made by the healthcare industry. The sicker the patient, the higher the profit. If patients were to be completely healed, a customer would be lost.

Compare this to the incentive structure of Traditional Chinese Medicine, where the customer pays the doctor a standard monthly fee. If the customer grows ill, the fee decreases. If the customer is very ill, he pays nothing. Thus, the doctor makes more money when everyone is kept healthy.

America is in the middle of a healthcare crisis. The country continues to get sicker even as we spend more and more money on healthcare. Clearly the approach we're taking to prevent and treat chronic illness is not working. There's a body of research linking heart disease, stroke, high blood pressure, obesity, cancer, asthma, anxiety, and depression, and many other diseases to overbreathing. Our culture spends a lot of time worrying about how to stay healthy, but the focus is generally on diet, exercise, supplements and pharmaceuticals.



All of these can be very helpful, but if you're not breathing correctly, you're missing the single biggest piece of the wellness puzzle. The best thing you can do for your health is retrain your breathing patterns such that you breathe less twenty-four seven. Devoting twenty minutes a day to breathing exercises, along with doing thirty to sixty minutes of cardio with strict nasal breathing three to four times per week can dramatically improve your body oxygenation levels.

Learning to breathe less can lead to a wide range of noticeable benefits like a quieter mind, lower blood pressure, less pain, fewer headaches, less insomnia, less anxiety, decreased appetite leading to weight loss, and sleeping fewer hours per night while feeling more rested. Many chronic illnesses can be reversed, or ameliorated by learning to breathe less.

WHY WE BREATHE MORE

Why do we breathe more now than people in the early part of the twentieth century? One of the causes is lifestyle. One hundred years ago most people were much more physically active as most did some form of physical labor. People also ate less food, and the combination of these two factors meant that they were much slimmer. Losing weight will automatically slow down a person's breathing.

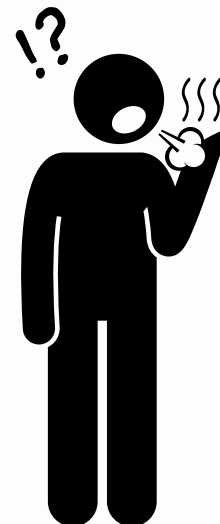
Another important factor is our shrinking faces. Due to nutritional deficiencies, softer foods, and poor orthodontic work, most of us have narrower airways and weaker jaws than our ancestors had. This leads to chronic mouth-breathing. Even those of us who breathe through our nose during the day will often breathe through the mouth during sleep, because our mouths fall open. Our ancestors had larger faces, allowing more room for the tongue such that during sleep the mouth would automatically stay closed with the tongue on the roof of the mouth, creating a vacuum seal.

Many children will wear braces, and the majority of them will experience narrowed airways that lead to breathing problems as a result of poor orthodontic work. Early orthodontic work was focused on expanding the palate to allow more room for the teeth. This work was more difficult and required a higher skill level from the orthodontist, which is part of why the practice of using braces became ubiquitous; it reliably produced an aesthetically pleasing result, at the expense of making the palate, and thus airways, smaller.

MOUTH BREATHING

Approximately sixty percent of Americans mouth breathe at night, while as many as twenty to fifty percent mouth breathe either regularly or intermittently throughout the day. Fifty percent of children mouth breathe during the day. Nearly everyone mouth-breathes during exercise. If we consider the animal kingdom we will see that all animals naturally breathe through the nose, with the exception of a few animals that pant when overheated.

Humans evolved to breathe through the nose. If we study human remains from a few thousand years ago, we can see our ancestors had longer maxillas (their faces grew further forward), straight teeth, no cavities, and no impacted wisdom teeth. During the colonial era, western doctors were astonished by the beautiful dentition of aboriginal peoples. Both groups, our ancestors and aboriginals, had beautiful straight teeth without dentistry or orthodontics. How could this be?





In our society nearly everyone has crooked teeth, and we're told this is due to genetics; it is not. It is due to mechanics. The reason we have crooked teeth is because the foods of our diet are much softer than our ancestors' diet, which leads to weak jaws and smaller faces. For proper facial development, the tongue must stay on the roof of the mouth during the day and throughout the night. Without proper tongue posture and the stress of chewing tough meat as our ancestors did, humans today end up with an underdeveloped upper palate, with not enough room for our teeth. The underdeveloped upper palate also leads to not enough room for the tongue to stay suctioned to the roof of the mouth with a vacuum seal during sleep. This can lead to the tongue falling back in the airway causing snoring and sleep apnea. Mouth breathing is also the primary cause of cavities.

Why is mouth breathing a problem? Aside from facial deformity, snoring and sleep apnea, mouth breathing hurts us by starving the body of oxygen. It does this in two ways.





Firstly, it increases the volume of air moving through the lungs, which as explained earlier leads to lower carbon dioxide levels and thus lower cellular oxygen levels. This in turn leads to vasoconstriction, resulting in higher blood pressure, less blood flow to the brain, a more noisy, anxious mind, and in extreme cases, stroke and heart attack.

Secondly, the nose slows down, warms, humidifies and adds nitric oxide to air as it passes to the lungs. The nose has at least thirty functions, which are vital to all of your organ systems, but especially vital to the cardiovascular system. All of these functions lead to increased oxygenation of body tissues.

By depriving the brain of oxygen, mouth-breathing in children can lead to slowed growth and slowed learning. This is why the term mouth-breather is an old-school pejorative meaning stupid. Mouth breathing also activates the sympathetic, fight or flight, nervous system which can lead to more overbreathing, creating a feedback loop that leads to anxiety and panic attacks.

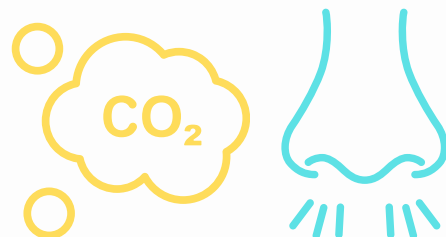
If you want to get healthy or remain healthy, it is imperative that you breathe through your nose all the time; during regular daily activities, during exercise, and during sleep.

HOW CAN WE LEARN TO BREATHE LESS?

The first and most important thing to remember is to breathe through the nose all the time. Breathing through the nose is the foundation of functional breathing. If you wake up with a dry mouth, you're breathing through your mouth during sleep. Breathing through the nose during sleep can be challenging but there are various devices such as mouth guards, tape, myotape, and chin straps can help keep your mouth closed at night. Breathing through the nose automatically reduces the volume of air passing through the lungs, and increases oxygen at the cell level.

The brain has a mechanism, a chemosensor in the medulla oblongata which senses the carbon dioxide levels in the blood. If you've ever swam for a distance underwater and started to run out of air, that intense feeling of panic that you feel is created by your medulla oblongata due to rising carbon dioxide levels in the blood. The level of carbon dioxide in your body, and thus your breathing rate, is controlled by your medulla oblongata.

By doing various breathing exercises, as well as by exercising with strict nasal breathing, one can acclimate the medulla oblongata to higher levels of carbon dioxide. Over time by exposing the medulla oblongata to higher levels of carbon dioxide and thus reducing the sensitivity to carbon dioxide, the body will automatically breathe less and slower.



— A WORD OF CAUTION

These breathing exercises are powerful and can profoundly change the body's chemistry. Therefore, people with the following conditions should consult with a doctor and a certified Buteyko practitioner before attempting any breath retraining exercises. Many of these conditions can be helped by increasing cellular oxygen levels through reduced breathing, but the process must be applied in a controlled manner so as to not raise carbon dioxide levels too quickly.

Brain Tumor

Schizophrenia

Cancer

Angina

Cardiac Arrhythmia

(unless there's a pacemaker)

Pregnancy

Severe Renal Failure

Sickle-Cell Anemia

Recent Stroke

Recent Thrombosis

Recent Aneurysm

Recent Heart Attack

recent = in the last 6 months

The breathing exercises may lead to sudden increases in carbon dioxide levels, which can cause spontaneous abortion. One or two hours of walking per day with strict nasal breathing is recommended for pregnant women in the first trimester. In the second and third trimester some mild breathing exercises may be done, but only under the guidance of a certified practitioner.

BREATHING TECHNIQUES *CONTROLLED PAUSE*

The controlled pause is the foundational exercise of breath retraining because it is how you measure your body's oxygenation level. For this exercise it's best to have a timing device like a watch or stopwatch.

To measure your controlled pause, first exhale normally, then pinch your nose, hold your breath and count the seconds until you feel the first definite desire to breathe. This desire may coincide with an involuntary movement of your throat or diaphragm. When you're done with the controlled pause, you should be able to resume breathing normally; if you take a large breath, that means you've held your breath too long.

A controlled pause under twenty five seconds is considered dysfunctional breathing, while a controlled pause of twenty five seconds or higher is considered functional breathing. The goal is to achieve a controlled pause of forty seconds.

It's best to measure your controlled pause every morning upon waking, as this gives a measure of your involuntary breathing patterns during sleep. It's also good to take your controlled pause before and after breathing exercises to make sure the controlled pause time increases after the exercise.



BREATHING TECHNIQUES

NOSE UNBLOCKING

If your nose is clogged from a cold, allergies, or other reason, you can try this unblocking exercise to better breathe out your nose.

Exhale naturally, then close your mouth and pinch your nose.

Get up and walk around or nod your head up and down.

You should do this for at least thirty seconds. When you feel a strong air hunger, then release your nose and inhale slowly and calmly through your nose.

Continue to breathe slowly and calmly through the nose. If your nose does not unplug initially, you may need to hold your breath for longer.

Repeat the exercise as many times as necessary to keep the nose unplugged, and slow your breathing to keep it unplugged.



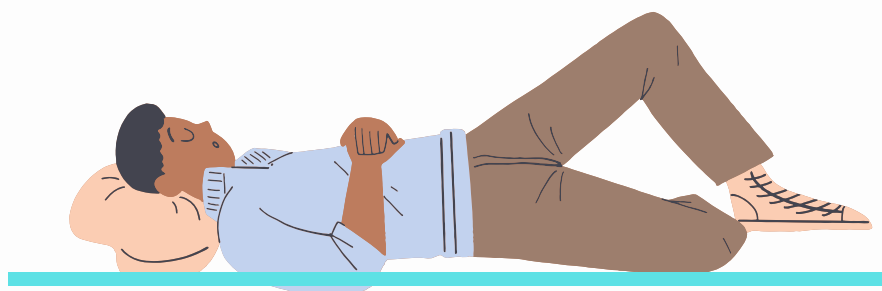
BREATHING TECHNIQUES

REDUCED BREATHING

Sit, or lay down with a straight back. Scan your body and consciously relax your toes, feet, calves, thighs, stomach, chest, shoulders, arms, neck, head, and face.

Relaxing your body will automatically reduce your breathing by about twenty percent. Next, consciously take a smaller breath in than what feel you would like to take in. Take ten to twenty percent less air than what you feel you would like to take in.

This should create a feeling of mild air hunger, as if you're going for a brisk walk or a walking up a flight of stairs. If you can tolerate this air hunger for a few minutes, your body will adjust and you will be able to feel a sense of relaxation while breathing less air than you normally breathe. If your breath feels stuck, or you feel you need to take a deep breath, you've reduced the rate of your breathing too much.



BREATHING TECHNIQUES

REDUCED BREATHING

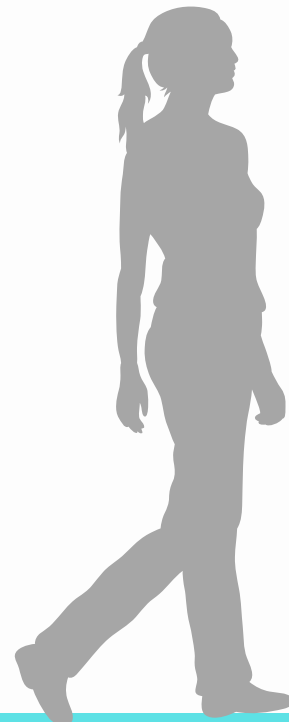
Walking Steps Exercise:

While you're on a walk, exhale normally, pinch your nose, and count your steps as you continue to walk.

When you feel a strong air hunger, release your nose and inhale, keeping the inhalation as slow and as small as you can manage.

Recover your breathing, and continue walking.

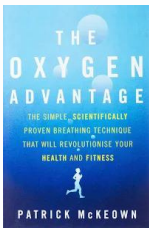
Repeat the exercise five times, with one minute between each set. The goal is to achieve eighty steps.



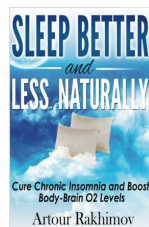
RECOMMENDED READING



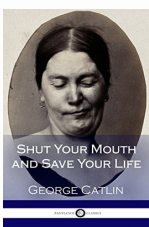
"Breath" by James Nestor. This New York Times best-seller is an excellent book on breathing with an entire chapter titled "Less" devoted to Konstantin Buteyko's work and the importance of breathing less.



"Oxygen Advantage" and "Breathing Cure" by Patrick McKeown. Patrick McKeown is the successor to Konstantin Buteyko in the West and both of these books provide excellent detailed information on the health consequences of overbreathing and the application of the Buteyko method.



"Sleep Better and Less: Naturally" by Artour Rakhimov. Sleep is one of the most challenging times for someone retraining their breathing. This excellent book by Dr. Artour Rakhimov is filled with tips and tricks for altering the automatic breathing patterns during sleep.



"Shut Your Mouth Save Your Life" by George Catlin. George Catlin was a lawyer turned painter who traveled among many different Native American tribes, painting many different indigenous people. He soon noticed one big difference between Native Americans and Europeans; the Native Americans were consistent nasal breathers during waking hours and sleep. When he asked about the practice, he was told that mouth breathing lead to weakness, disease, ugliness and death, and that nasal breathing lead to strength, health, beauty, and long life. He observed that the indigenous people had perfectly straight teeth. He also noticed that the Native American children rarely died, whereas almost half of all the European children under the age of five died. The Native American mothers took great care to make sure babies slept with their mouths closed, to encourage the lifelong habit of nasal breathing. A fascinating read from the perspective of a colonial man in the 1800s who learned the importance of nasal breathing during his time with indigenous peoples.

ABOUT

I first became interested in the healing power of breath in college as a philosophy major studying Taoism. When Lao Tzu wrote that the perfect man breathes as if he's not breathing, I didn't fully understand the words but intuitively they felt true.

After college I became a gunsmith and began building hunting custom rifles. As a hunter and marksman, being attuned to my breathing was very important to me. Gunsmithing gave me an opportunity to follow my breathing at work and turn my craft into a meditation.

However, after nearly a decade, I became bored with firearm mechanisms and simultaneously I became fascinated with the most complex mechanism in the known universe, the human body. In researching the body, I came across another mechanist who grew disillusioned with machines and turned his attention to the body: Konstantin Buteyko. After discovering that all chronic pain, suffering and diseases are caused from lack of oxygen at the cell level, I knew Patrick McKeown was right when he said that quieting the breath is the best thing that he's ever done. It is also the best thing that I've ever done and I love teaching others how to quieten their breathing.

As someone who's in long term recovery with bipolar disorder, I'm particularly interested in helping people who struggle with mental health issues like anxiety and depression. As someone who stays active with running, weightlifting, Qigong and Yoga, I enjoy helping active people improve performance, reduce recovery time, and stay healthy through breathwork.





TRUE BREATHING

Read more about Michael and his coaching services online at:

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Please consult your physicians with any concerns about reduced breathing or
any information in this booklet before beginning a new program.
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