



Lydia is a passionate advocate of healthy living. She has launched and positioned many health and wellness-related companies, products, technologies and organizations receiving more than 100 awards nationally and internationally. Her focus in the health sector is specifically on life sciences, aging and longevity. She is a partner and investor in several recognized national brands. She sits on the board of the Buck Institute for Research on Aging whose mission is to eliminate the threat of age-related disease for today's and future generations. It is the only independent research organization globally dedicated to extending the healthy years of life. Like the scientists at the Buck, Graham envisions it will be possible for people to enjoy life at 95 as much as at 25. To support Buck's mission, please visit www.buckinstitute.org.



Above left: International bestseller: New York Times Top 10, Wall Street Journal bestseller, Los Angeles Times bestseller
Above right: Award-winning science journalist and author, James Nestor

STRESSED? JUST BREATHE. THERE MIGHT BE MORE TO IT THAN YOU THINK.

BY LYDIA GRAHAM

WHILE MANY OF US WATCH OUR DIET AND EXERCISE, WE probably have not given much thought to how we breathe. Some of us cannot ignore our noses, especially if we suffer from respiratory or sleep issues such as asthma, snoring, or sleep apnea. Considering the average human takes up to 25,000 breaths per day or an average of 670 million breaths over a lifetime — breathing is an area of our well-being worth paying attention to. Taking time to explore its potential benefits when done properly and understanding the negative consequences when done incorrectly is important to our health.

Although breathwork is all the rage these days, I must admit I have been slow to explore it. My breathing techniques were developed earlier in my life through yoga and meditation. So, when two friends (one with sleep apnea) shared that the book *Breath* changed their lives, I thought I had better take notice and resigned myself to reading what I thought would be a very boring book all about breath. I could not have been more wrong.

Most health and wellness pursuits often begin as a personal journey seeking to address a personal need. Such was the case with James Nestor, an award-winning San Francisco-based science writer and author who recently penned the current NYT bestseller *Breath*. Suffering from frequent bouts of bronchitis and pneumonia, he set out on a 5-year quest to find answers. He takes us right along as he subjects himself to various experiments and digs through ancient burial sites, medical libraries, ancient scripts, dental records and more. His tenacious sense of curiosity and deep exploration of this subject is truly inspiring. Along the way and down through the ages, we meet doctors, scientists, holy men, and what he calls the “pulmonauts”—a rogue group who were more tinkerers but who threw themselves into unearthing the powers of breathing to solve all kinds of health conditions, and facilitate peak athletic and musical performance.

The story begins millions of years ago. Perhaps surprisingly, our ancestors had universally straight teeth, wide nasal apertures, and more expansive airways than we do now. Today humans are the worst breathers on the planet and the only species to routinely have malocclusion (misalignment of the jaws and teeth). It all seemed to change about 300,000 years ago with the arrival of *Homo sapiens*. We began to “dysevolve” over the centuries (the opposite of evolve and, in this case, going backwards, respiratory-wise) as Nestor explains to become a species of “snorers, chokers, wheezers, coughers, panthers, and overall miserable breathers”. Part of this had to do with how our facial structure changed, particularly our mouths and noses along with and partly because of our patterns of food consumption (from raw to cooked to processed) over time.

Our journey with Nestor kicks off as he undertakes a 20-day experiment with Dr. Jayakar Nayak, the chief of rhinology research at Stanford to explore the effects of habitual mouth breathing and just how quickly the damage from it (no one refutes mouth breathing is bad) would set in. Nestor and a colleague, a Swedish breathing therapist, proceeded to monitor all kinds of data sets in phase one (with noses completely plugged and breathing solely by mouth) and again in phase two (with mouths taped and breathing solely through the nose).

There were many data points, but some effects were immediate. In phase one, one night of mouth breathing jacked snoring up 1,300 percent then even tripled a few days later, blood pressure shot up into stage two hypertension, sleep apnea came on, stress levels spiked, and cognitive scores lowered significantly. His colleague’s scores were even worse.

In phase two as they switched to nose breathing for the next 10 days, scores dramatically improved. After only two days, his snoring and sleep apnea had completely disappeared (this doesn’t happen for everyone), and his blood pressure lowered by 30 points.

While this is by no means a formal, randomized control study, but an experiment on two, it is enough to give one pause and take notice, especially all you mouth-breathers out there. Besides sharing the results of this one experiment, the book is jam-packed throughout with information and research from scientists and pulmonauts worldwide.

So how are we ideally supposed to breathe?

BREATHE THROUGH YOUR NOSE

The first rule, according to Nestor, is to breathe through your nose, especially at night. If your nose is congested, find a way to clear it. (That might require professional help). Since breathing is predominantly an unconscious act, begin to pay attention even during the day. Check in to see how are you breathing—by nose or by mouth? During the night, Nestor says to tape your mouth with a bit of surgical tape (with a gentle adhesive) cut to the size of a postage stamp. Think Charlie Chaplin. It is okay if the two sides of your lips are not taped; the middle will be enough to keep you from mouth breathing. At night if we breathe through our mouths, we can become dehydrated. (Ironically, this can cause us to urinate more.) He explains this in more detail, but suffice it to say we lose about 40 percent more humidity if we mouth breathe during the night. So, start with trying to nose breathe at night. Anecdotally, you may find your throat is less parched and your lips less chapped in the morning, just for starters.

But daytime breathing is important, too. Think about how the nose is responsible for filtering and conditioning the air. When we mouth breathe, 'we expose our lungs to all kinds of things in the environment that are not good for us, such as toxins, mold, viruses, and bacteria. Breathing through the mouth can also disrupt the oral PH balance, making us more susceptible to cavities and periodontal disease. Added to this, a lack of resistance from mouth breathing can result in our breathing too much and too high in the chest, making it hard to efficiently use oxygen. And if all this is not enough to convince you, studies have shown there are impacts on brain functioning, mostly in the frontal cortex which is associated with decision-making and logic.'

FULL EXHALATION

Next, is full exhalation. While we may take deep inhalations, most people fail to focus on the exhale. The diaphragm, often referred to as the "second heart," sits beneath the lungs in the shape of an umbrella, lifting during exhalation and dropping back down upon inhalation. Typically, we engage as little as 10 percent of its range when we breathe. Extending our breath to use 50 to 70 percent of this capacity can ease cardiovascular stress. He shares his method to reach this "breathing coordination, when the amount of air that enters us equals the amount that leaves."

BREATHE SLOWLY

When we are stressed or on hyper alert, you notice breathing becomes more rapid and shallow. Slow breathing at a rate of five to six seconds (even when practiced just five to 10 minutes per day), also known as "resonant breathing" or "coherent breathing," has been shown to offer the "same benefits as meditation for people who did not want to meditate or yoga for people who did not want to get off the couch. It offered the healing touch of prayer for people who were not religious," says Nestor. "That would equate to a 5.5-second inhale followed by a 5.5-second exhale, which works out to 5.5 breaths per minute." (Comparatively, the average is 18 breaths per minute).

Nestor points out the fascinating fact that prayer patterns from various cultures and religions worldwide all adopted this breathing pattern of either 5.5 breaths per minute or close to it. Just two examples are the original Latin version of the rosary, the Catholic prayer cycle of the Ave Maria (at 5.5) and the Buddhist chant of Om Mani Padme Hum as the chant phrase lasts six seconds with a 6-second inhale before it starts again. This is also true in prayers in Hindu, Japanese, African, Hawaiian, Native American and others.

BREATHE LESS

One thing all the medical or freelance pulmonauts Nestor spoke to unanimously agreed upon was, "we are a society of over breathers." The key to optimal breathing, according to Nestor, is to practice fewer inhales and exhales in a smaller volume. He reminds us breathing less differs from breathing slowly. In this section and an earlier chapter, Nestor also dives into the importance of carbon dioxide, which seems counterintuitive as oxygen gets all the limelight. Carbon dioxide is actually vital in our ability to utilize our oxygen.

CHEW

Our modern diet is filled with overly processed, "convenient" foods. Even health enthusiasts embrace organic smoothies, juices, yogurts, and kefir. While some of these choices may be good for you and others not, one thing they all have in common is that they are soft. Why should this matter? Our facial muscles, particularly our masseter (the chewing muscle below the ears), are not getting exercised. As a result, these muscles become lax over time. As the bone degrades Nestor notes, "the soft tissue at the back of the throat can droop and lead to airway obstruction, not to mention sagging skin, baggy and hollow eyes, and sallow cheeks." Yikes!

However, the good news here both for aesthetics and for breathing is that "unlike other bones in our body, the bone that makes up the center of the face, called the maxilla, is comprised of a membrane bone that is highly plastic. The maxilla can remodel and grow denser into our seventies and likely longer. The more we gnaw, the younger we will look and the better we will breathe," says Nestor.

Bring on the raw carrots!

It is also important for young children to exercise these muscles and chew foods while their facial structure is forming.

SUMMARY

If all this seems confusing, Nestor reminds us what a healthy beneficial breathing pattern should look and feel like: "Everyday breathing should be silent, effortless, subtle, light, rhythmic, and deep." He adds, "Breathing should be almost imperceptible. So many people overdo it, and that causes so much unnecessary stress and fatigue on the body."

Toward the end of the book, Nestor offers a variety of techniques he calls "Breathing +." And like so many of the breathwork workshops focused on various breathing techniques, he reminds us that techniques like "Tummo, Wim Hof Method, and vigorous pranayamas follow a different set of rules for a different purpose. They purposely stress the body in a controlled period of time, working as a pressure valve so that the rest of the day and night we can be calm, controlled, and breathing softly and comfortably."

The best news, says Nestor, "is that breathing methods are free, easy, and available to anyone who cares to use them. Healthy breathing, like so much else in health and wellness, ultimately comes down to awareness and willpower."

You will never think about your nose and your breathing the same way again after reading this book. Nestor unravels breath's mysteries and details interesting techniques to try. He quotes his doctor, Nayek, "The nose is the silent warrior, the gatekeeper of our bodies, pharmacist to our minds, and weathervane to our emotions."

How could we have underestimated or even ignored it all this time? In breathing, for each of us as well as for those who study science, medicine, and athletic endurance and performance, it turns out, there is still much to explore. Nestor has raised our awareness, inspired and informed us, and opened that door. Thank you for that. 🙏

Note: Nothing in this article constitutes medical advice. Please consult your health practitioner if you have questions or have respiratory or sleep conditions that require professional advice.