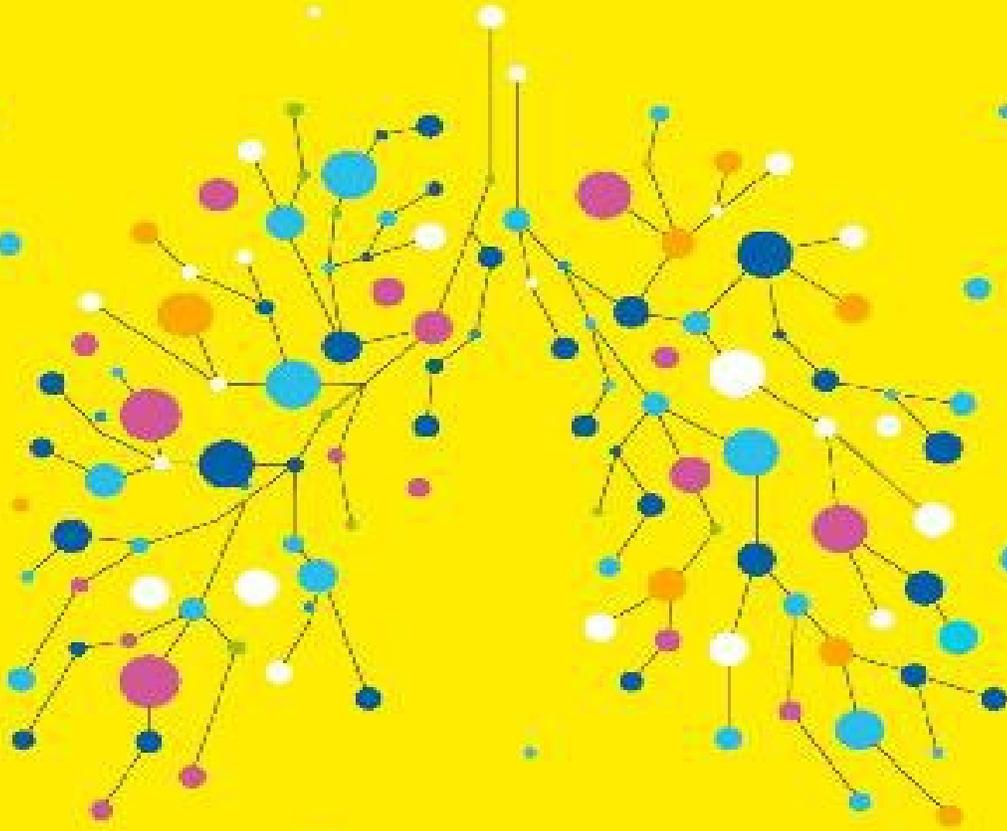


BREATH



THE NEW SCIENCE
OF A LOST ART

JAMES NESTOR

Also by James Nestor

*Deep: Freediving, Renegade Science, and What the Ocean Tells Us about
Ourselves*

BREATH



The New Science
of a Lost Art

James Nestor

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To K.S.

In transporting the breath, the inhalation must be full. When it is full, it has big capacity. When it has big capacity, it can be extended. When it is extended, it can penetrate downward. When it penetrates downward, it will become calmly settled. When it is calmly settled, it will be strong and firm. When it is strong and firm, it will germinate. When it germinates, it will grow. When it grows, it will retreat upward. When it retreats upward, it will reach the top of the head. The secret power of Providence moves above. The secret power of the Earth moves below.

He who follows this will live. He who acts against this will die.

—500 BCE ZHOU DYNASTY STONE INSCRIPTION

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INTRODUCTION



The place looked like something out of Amityville: all paint-chipped walls, dusty windows, and menacing shadows cast by moonlight. I walked through a gate, up a flight of creaking steps, and knocked on the door.

When it swung open, a woman in her 30s with woolly eyebrows and oversize white teeth welcomed me inside. She asked me to take off my shoes, then led me to a cavernous living room, its ceiling painted sky blue with wispy clouds. I took a seat beside a window that rattled in the breeze and watched through jaundiced streetlight as others walked in. A guy with prisoner eyes. A stern-faced man with Jerry Lewis bangs. A blond woman with an off-center bindi on her forehead. Through the rustle of shuffling feet and whispered hellos, a truck rumbled down the street blasting “Paper Planes,” the inescapable anthem of the day. I removed my belt, loosened the top button on my jeans, and settled in.

I’d come here on the recommendation of my doctor, who’d told me, “A breathing class could help.” It could help strengthen my failing lungs, calm my frazzled mind, maybe give me perspective.

For the past few months, I’d been going through a rough patch. My job was stressing me out and my 130-year-old house was falling apart. I’d just recovered from pneumonia, which I’d also had the year before and the year before that. I was spending most of my time at home wheezing, working, and eating three meals a day out of the same bowl while hunched over week-old newspapers on the couch. I was in a rut—physically, mentally, and otherwise. After a few months of living this way, I took my doctor’s advice and signed up for an introductory course in breathing to learn a technique called Sudarshan Kriya.

At 7:00 p.m., the bushy-browed woman locked the front door, sat in the middle of the group, inserted a cassette tape into a beat-up boom box, and pressed play. She told us to close our eyes. Through hissing static, the voice of a man with an Indian accent flowed from the speakers. It was squeaky,

lilting, and too melodious to sound natural, as if it had been taken from a cartoon. The voice instructed us to inhale slowly through our noses, then to exhale slowly. To focus on our breath.

We repeated this process for a few minutes. I reached over to a pile of blankets and wrapped one around my legs to keep my stocking feet warm beneath the drafty window. I kept breathing but nothing happened. No calmness swept over me; no tension released from my tight muscles. Nothing.

Ten, maybe 20 minutes passed. I started getting annoyed and a bit resentful that I'd chosen to spend my evening inhaling dusty air on the floor of an old Victorian. I opened my eyes and looked around. Everyone had the same somber, bored look. Prisoner Eyes appeared to be sleeping. Jerry Lewis looked like he was relieving himself. Bindi sat frozen with a Cheshire Cat smile on her face. I thought about getting up and leaving, but I didn't want to be rude. The session was free; the instructor wasn't paid to be here. I needed to respect her charity. So I closed my eyes again, wrapped the blanket a little tighter, and kept breathing.

Then something happened. I wasn't conscious of any transformation taking place. I never felt myself relax or the swarm of nagging thoughts leave my head. But it was as if I'd been taken from one place and deposited somewhere else. It happened in an instant.

The tape came to an end and I opened my eyes. There was something wet on my head. I lifted my hand to wipe it off and noticed my hair was sopping. I ran my hand down my face, felt the sting of sweat in my eyes, and tasted salt. I looked down at my torso and noticed sweat blotches on my sweater and jeans. The temperature in the room was about 68 degrees—much cooler beneath the drafty window. Everyone had been covered in jackets and hoodies to keep warm. But I had somehow sweated through my clothes as if I'd just run a marathon.

The instructor approached and asked if I was OK, if I'd been sick or had a fever. I told her I felt perfectly fine. Then she said something about the body's heat, and how each inhaled breath provides us with new energy and each exhale releases old, stale energy. I tried to take it in but was having trouble focusing. I was preoccupied with how I was going to ride my bike three miles home from the Haight-Ashbury in sweat-soaked clothes.

The next day I felt even better. As advertised, there was a feeling of calm

and quiet that I hadn't experienced in a long time. I slept well. The little things in life didn't bother me as much. The tension was gone from my shoulders and neck. This lasted a few days before the feeling faded out.

What exactly had happened? How did sitting cross-legged in a funky house and breathing for an hour trigger such a profound reaction?

I returned to the breathing class the next week: same experience, fewer waterworks. I didn't mention any of it to family members or friends. But I worked to understand what had happened, and I spent the next several years trying to figure it out.

Over that span of time, I fixed up my house, got out of my funk, and got a lead that might answer some of my questions about breathing. I went to Greece to write a story on freediving, the ancient practice of diving hundreds of feet below the water's surface on a single breath of air. Between dives, I interviewed dozens of experts, hoping to gain some perspective on what they did and why. I wanted to know how these unassuming-looking people—software engineers, advertising executives, biologists, and physicians—had trained their bodies to go without air for 12 minutes at a time, diving to depths far beyond what scientists thought possible.

When most people go underwater in a pool they bail out at ten feet after just a few seconds, ears screaming. The freedivers told me they'd previously been "most people." Their transformation was a matter of training; they'd coaxed their lungs to work harder, to tap the pulmonary capabilities that the rest of us ignore. They insisted they weren't special. Anyone in reasonable health willing to put in the hours could dive to 100, 200, even 300 feet. It didn't matter how old you were, how much you weighed, or what your genetic makeup was. To freedive, they said, all anyone had to do was master the art of breathing.

To them breathing wasn't an unconscious act; it wasn't something they just did. It was a force, a medicine, and a mechanism through which they could gain an almost superhuman power.

"There are as many ways to breathe as there are foods to eat," said one female instructor who had held her breath for more than eight minutes and once dived below 300 feet. "And each way we breathe will affect our bodies

in different ways.” Another diver told me that some methods of breathing will nourish our brains, while others will kill neurons; some will make us healthy, while others will hasten our death.

They told crazy stories, about how they’d breathed in ways that expanded the size of their lungs by 30 percent or more. They told me about an Indian doctor who lost several pounds by simply changing the way he inhaled, and about another man who was injected with the bacterial endotoxin *E. coli*, then breathed in a rhythmic pattern to stimulate his immune system and destroy the toxins within minutes. They told me about women who put their cancers into remission and monks who could melt circles in the snow around their bare bodies over a period of several hours. It all sounded nuts.

During my off-hours from doing underwater research, usually late at night, I read through reams of literature on the subject. Surely someone had studied the effects of this conscious breathing on landlubbers? Surely someone had corroborated the freedivers’ fantastic stories of using breathing for weight loss, health, and longevity?

I found a library’s worth of material. The problem was, the sources were hundreds, sometimes thousands, of years old.

Seven books of the Chinese Tao dating back to around 400 BCE focused entirely on breathing, how it could kill us or heal us, depending on how we used it. These manuscripts included detailed instructions on how to regulate the breath, slow it, hold it, and swallow it. Even earlier, Hindus considered breath and spirit the same thing, and described elaborate practices that were meant to balance breathing and preserve both physical and mental health. Then there were the Buddhists, who used breathing not only to lengthen their lives but to reach higher planes of consciousness. Breathing, for all these people, for all these cultures, was powerful medicine.

“Therefore, the scholar who nourishes his life refines the form and nourishes his breath,” says an ancient Tao text. “Isn’t this evident?”

Not so much. I looked for some kind of verification of these claims in more recent research in pulmonology, the medical discipline that deals with the lungs and the respiratory tract, but found next to nothing. According to what I did find, breathing technique wasn’t important. Many doctors, researchers, and scientists I interviewed confirmed this position. Twenty times a minute, ten times, through the mouth, nose, or breathing tube, it’s all the same. The point is to get air in and let the body do the rest.

To get a sense of how breathing is regarded by modern medical professionals, think back to your last check-up. Chances are your doctor took your blood pressure, pulse, and temperature, then placed a stethoscope to your chest to assess the health of your heart and lungs. Maybe she discussed diet, taking vitamins, stresses at work. Any issues digesting food? How about sleep? Were the seasonal allergies getting worse? Asthma? What about those headaches?

But she likely never checked your respiratory rate. She never checked the balance of oxygen and carbon dioxide in your bloodstream. How you breathe and the quality of each breath were not on the menu.

Even so, if the freedivers and the ancient texts were to be believed, how we breathe affects all things. How could it be so important and unimportant at the same time?

I kept digging, and slowly a story began to unfold. As I found out, I was not the only person who'd recently started asking these questions. While I was paging through texts and interviewing freedivers and super-breathers, scientists at Harvard, Stanford, and other renowned institutions were confirming some of the wildest stories I'd been hearing. But their work wasn't happening in the pulmonology labs. Pulmonologists, I learned, work mainly on specific maladies of the lungs—collapse, cancer, emphysema. “We’re dealing with emergencies,” one veteran pulmonologist told me. “That’s how the system works.”

No, this breathing research has been taking place elsewhere: in the muddy digs of ancient burial sites, the easy chairs of dental offices, and the rubber rooms of mental hospitals. Not the kinds of places where you'd expect to find cutting-edge research into a biological function.

Few of these scientists set out to study breathing. But, somehow, in some way, breathing kept finding them. They discovered that our capacity to breathe has changed through the long processes of human evolution, and that the way we breathe has gotten markedly worse since the dawn of the Industrial Age. They discovered that 90 percent of us—very likely me, you, and almost everyone you know—is breathing incorrectly and that this failure is either causing or aggravating a laundry list of chronic diseases.

On a more inspiring note, some of these researchers were also showing that many modern maladies—asthma, anxiety, attention deficit hyperactivity disorder, psoriasis, and more—could either be reduced or reversed simply by changing the way we inhale and exhale.

This work was upending long-held beliefs in Western medical science. Yes, breathing in different patterns really can influence our body weight and overall health. Yes, how we breathe really does affect the size and function of our lungs. Yes, breathing allows us to hack into our own nervous system, control our immune response, and restore our health. Yes, changing how we breathe will help us live longer.

No matter what we eat, how much we exercise, how resilient our genes are, how skinny or young or wise we are—none of it will matter unless we’re breathing correctly. That’s what these researchers discovered. The missing pillar in health is breath. It all starts there.

. . .

This book is a scientific adventure into the lost art and science of breathing. It explores the transformation that occurs inside our bodies every 3.3 seconds, the time it takes the average person to inhale and exhale. It explains how the billions and billions of molecules you bring in with each breath have built your bones, sheaths of muscle, blood, brains, and organs, and the emerging science of how these microscopic bits will influence your health and happiness tomorrow, next week, next month, next year, and decades from now.

I call this a “lost art” because so many of these new discoveries aren’t new at all. Most of the techniques I’ll be exploring have been around for hundreds, sometimes thousands, of years. They were created, documented, forgotten, and discovered in another culture at another time, then forgotten again. This went on for centuries.

Many early pioneers in this discipline weren’t scientists. They were tinkerers, a kind of rogue group I call “pulmonauts,” who stumbled on the powers of breathing because nothing else could help them. They were Civil War surgeons, French hairdressers, anarchist opera singers, Indian mystics,