



"One thing I urge everyone to practice during this coronavirus pandemic is to breathe or inhale through your NOSE and exhale through your mouth. The cells and tissues in the nose, but not the mouth, constantly and continuously produce nitric oxide."

- Dr. Louis J. Ignarro, 1998 Nobel Prize Winner in Physiology or Medicine

- » Your nose produces free nitric oxide
- » Your mouthwash destroys it daily

Chapter 2

The Ancient Nasal Breathing Secret

Your dentist and cardiologist are working against each other, and nobody told you. One prescribes mouthwash that destroys nitric oxide. The other prescribes nitroglycerin that replaces it. Meanwhile, your nose produces this same life-saving molecule for free - with every breath.

Here's the Timeline:

- 400 BCE: Yogis document that nasal breathing induces calm, while mouth breathing creates anxiety.
- 1998: Three scientists win the Nobel Prize for proving that nitric oxide controls the cardiovascular system.
- Tonight: You can access this survival advantage with a 2-minute test - no prescription, no supplements, just attention to your breathing.

400 BCE - Yogis Find the Pattern

Around 400 BCE, yogic practitioners observed that breathing through the nose created calm, while mouth breathing induced anxiety. They had no laboratories, only generations of careful observation. Without knowing the chemistry, they discovered the body's nitric oxide factory. The Yoga Sutras, compiled around 400 CE, documented eight specific nasal breathing patterns (pranayama), each linked to different physiological effects - 2,000 years before anyone understood why.

The Hatha Yoga Pradipika, written in the 15th century, elaborated on this: Nadi Shodhana (alternate nostril breathing) for insomnia; Kapalabhati (skull-shining breath) for digestion; and Bhramari (humming bee breath) for immunity. Different patterns served different purposes, all through the nose. Tibetan monks at altitudes exceeding 14,000 feet relied exclusively on nasal breathing, maintaining oxygen levels that would hospitalize mouth-breathing Westerners at the same elevation. Think of them as ancient blacksmiths, perfecting steel tempering through observation alone, achieving mastery centuries before metallurgy explained the molecular changes.

1998 - The Nobel Prize Catches Up

In 1998, scientists Robert F. Furchgott, Louis J. Ignarro, and Ferid Murad won the Nobel Prize in Physiology or Medicine for discovering that nitric oxide (NO) is a crucial signaling molecule in the cardiovascular system. Nitric oxide, a gas produced by the body, causes blood vessels to relax and widen (vasodilation), increasing blood flow, lowering blood pressure, and improving oxygen delivery. That same year, Viagra launched, and both the Nobel Prize and Viagra operate through the same mechanism: increasing nitric oxide availability. Pfizer charges about \$70 per pill, while your nose continuously manufactures nitric oxide, delivering it with every breath.

What makes this discovery remarkable is that doctors have prescribed nitroglycerin for chest pain since the 1800s; they knew it was effective but didn't understand why until Murad's 1977 research revealed that nitroglycerin releases nitric oxide, which relaxes smooth muscle cells in blood vessel walls. For over a century, physicians prescribed synthetic nitric oxide donors without realizing that the body produces this molecule naturally - primarily through the nose.

The Mouthwash Problem Nobody Talks About

Now here's where it gets strange. Walk into any CVS, and you'll find Listerine, Scope, Crest Pro-Health - every major mouthwash brand contains antibacterial agents recommended by dentists for "oral health." However, a 2015 study by Catherine Bondonno, published in the American Journal of Hypertension, revealed the

consequences of following that advice: it destroys the oral bacteria that convert dietary nitrates into nitric oxide.

Here's how your body works: You eat spinach or beets (which are high in nitrates). Bacteria on your tongue convert those nitrates into nitrite. You swallow, and your stomach converts nitrite into nitric oxide. As a result, your blood vessels relax, and your blood pressure drops. Bondonno's team tested chlorhexidine mouthwash (the active ingredient in many prescription rinses and Peridex) on healthy volunteers. After just seven days of twice-daily use, blood pressure rose by 2–3.5 mmHg due to the mouthwash killing the bacteria necessary for nitrate-to-nitrite conversion.

A 2020 longitudinal study published in *Blood Pressure* tracked 540 people for three years. Those who used mouthwash twice daily or more had an 85% higher risk of developing hypertension compared to less frequent users, and a 117% higher risk compared to non-users.

The math breaks down like this:

- Your cardiologist prescribes: Nitroglycerin (nitric oxide donor)
- Your dentist prescribes: Listerine (nitric oxide destroyer)
- They're working against each other, and you're paying for both.

Dr. Mark Stevens practiced dentistry in San Diego for 20 years, using Listerine twice daily and recommending it to every patient. Over time, his blood pressure gradually increased – 135, 140, 145. He attributed it to stress, aging, and genetics – common excuses. Then, in 2016, he read the Bondonno study. Realizing the impact of antibacterial mouthwash on the oral microbiome, he called his wife from the hotel: “Stop using mouthwash. Tonight.” Three weeks later, his blood pressure was 118/76.

He later reminisced: “I spent two decades destroying the very bacteria my patients needed for cardiovascular health. And I charged them for the privilege.” He now teaches patients about the oral microbiome, advising them to discard their Listerine.

Your Nose: A Nitric Oxide Factory

In 1995, Swedish researchers Jon Lundberg and Eddie Weitzberg at the Karolinska Institute made a groundbreaking discovery: the paranasal sinuses – air-filled spaces in your skull connected to your nasal passages – produce significant amounts of nitric oxide. The findings astounded them: nasal passages produce 200–300 parts per billion (ppb) of nitric oxide, while the sinuses contain even higher concentrations, sometimes exceeding 20 parts per million (ppm). Mouth breathing delivers none. Lundberg stood in his lab, reviewed the readings, and called Weitzberg over. “This can’t be right. Run it again.” They repeated the test six more times, obtaining the same results. Your sinuses produce nitric oxide at concentrations approaching industrial pollution levels– but rather than being toxic, this gas keeps you alive.

In a 2002 study published in the American Journal of Respiratory and Critical Care Medicine, Lundberg’s team discovered that humming increases nasal nitric oxide production by 15-fold. The airflow created by humming enhances gas exchange between the sinuses and nasal cavity, flooding your airways with nitric oxide. In a 1996 study, healthy subjects who breathed through their noses showed a 10% increase in oxygen saturation compared to mouth breathers. For intubated patients unable to breathe through their noses, researchers added air from the patients’ own nasal passages to the ventilator, resulting in an 18% increase in blood oxygen levels. Your body has been optimizing this system for millennia; we just needed advanced lab equipment to prove it.

2010s-2024 - What Modern Research Shows

Following the Nobel Prize announcement, research teams worldwide began investigating what yogis have known for centuries. A 2024 study published in *Frontiers in Physiology* compared nasal and oral breathing in patients with heart failure and coronary artery disease. It found that nasal breathing significantly improved the body’s ability to exchange oxygen and carbon dioxide. Patients showed a lower breathing frequency, improved oxygen uptake, and better carbon dioxide retention while nasal breathing.

For endurance athletes, a 2018 study in the *International Journal of Exercise Science* revealed that nasal-only breathing during training improved VO₂ max by 10% over 12 weeks, despite initial

discomfort transitioning from mouth breathing. James Nestor, author of *Breath: The New Science of a Lost Art*, conducted a dramatic self-experiment at Stanford University. For 10 days, he exclusively mouth-breathed, causing his blood pressure to rise from 120/80 to 142/89, while his sleep quality deteriorated and snoring increased. When he switched back to nasal breathing, everything reversed within days – his sleep apnea events decreased by 60%, snoring nearly disappeared, and his heart rate variability returned to normal. The underlying mechanism was the same one yogis utilized: consistent nitric oxide delivery with every nasal breath.



Your 30-Day Nasal Breathing Protocol

Tonight Only: The 2-Minute Test

Not ready for 30 days? Test the mechanism in one night:

9 PM: Hum for 2 minutes with your mouth closed and lips sealed.

The volume should be quiet enough that someone in the next room cannot hear you. The pitch should feel natural. You should feel the vibration in your sinuses – that's the nitric oxide flooding your nasal passages at 15 times normal levels. It may sound silly, but it works.



Before bed: Read for 10 minutes while breathing only through your nose and keeping your mouth closed. Notice: Do you feel more alert or relaxed? Does your nose feel clearer or congested?



Tomorrow morning: Compare your experience to a typical morning. What is your energy level? How is your mental clarity? Do you have a dry mouth, or is there drool on the pillow? This single-night test shows that the mechanism works in your body. If you notice any difference – even subtle – start Day 1 tomorrow. If you felt nothing, that's normal for 30–40% of people on the first night. Your body has adapted to mouth breathing, so the shift may feel neutral initially. The nitric oxide is being produced; you just can't feel it yet because you lack a baseline for comparison. Start Day 1 anyway. Week 2 is when most non-responders notice changes. The adaptation is happening whether you feel it or not.



Day 1: Awareness Building

Don't change anything yet – just notice when you're mouth breathing. Walk around your house and check: Is your mouth open or closed? Sitting at your desk? Check again. Watching TV? One more check. You're building awareness; noticing comes before change.

Days 2-7: Easy Activities

Keep your mouth closed during calm activities like reading, watching TV, and walking. Start with what feels easy. If you feel short of breath, that's normal; your body has adapted to over-breathing. It takes 3-5 days to recalibrate your carbon dioxide tolerance. The suffocating feeling is psychological rather than physiological. Your blood oxygen levels remain normal; you can verify this with a \$20 pulse oximeter from any pharmacy.

Weeks 2-4: Add Movement

Begin nose breathing during light exercise. If you need to open your mouth, slow down; speed will come after you adapt. Aim for a breathing rate of 8-10 breaths per minute instead of 15+. Here's the rhythm:

- IN-2-3-4 (through your nose)
- OUT-2-3-4-5-6 (through your nose)

Practice this while reading, walking, or sitting at your desk. It will become automatic within 30 days; your body will find the rhythm without counting once the pattern is established.

Night Protocol: Mouth Taping

Use 3M Micropore surgical tape (available at any pharmacy for \$4). Avoid duct tape or Scotch tape - this tape needs to breathe and should come off easily. Apply one 1-inch vertical strip over your closed lips. The first night may feel strange; you might wake up and remove it, which is normal. Try again the next night. By the third night, most people can sleep through it. Stanford research showed that mouth taping reduced sleep apnea events by 50% within two weeks and improved morning energy by 70%.

Stop Using Antibacterial Mouthwash

Switch to a saltwater rinse or hydroxyapatite toothpaste. Your oral bacteria are essential for nitric oxide conversion.

How You'll Know It's Working

Week 1 markers:

- Wake with a dry mouth instead of drool on your pillow
- Notice yourself mouth breathing 10+ times daily
- Feel “air hunger” during nasal breathing (CO₂ tolerance reset)

Week 2 markers:

- Can nose breathe during a 20-minute walk without gasping
- Resting heart rate drops 3–5 beats per minute
- Experience less brain fog in the mid-afternoon

Week 3 markers:

- Sleep through the entire night with tape (no waking to remove it)
- Resting heart rate drops 5–8 bpm from baseline
- Hold a conversation while nose breathing during light exercise

Week 4 markers:

- Blood pressure significantly decreases (track daily).
- Breathing rate slows to 10–12 breaths per minute at rest.
- Mouth breathing uncomfortable, nasal breathing feels natural.

If you're not noticing these changes, you are likely still breathing through your mouth most of the day. Set phone reminders every hour: “Check – mouth closed?”

In 400 BCE, yogis observed a pattern. By 1998, modern science explained why it works. You can start tonight. The pathway is simple: nasal breathing → nitric oxide production → vasodilation → improved cardiovascular function, immune defense, and oxygen delivery. You don't need supplements, prescriptions, or to wait for more research. The only cost? Thirty days of focus on your breathing. The return? A biological advantage that has been available your entire life. Every breath you've ever taken, your nose was ready to deliver nitric oxide; you just never knew to close your mouth. Start tonight. Hum for two minutes and see what happens.

Frequently Asked Questions

What's the counterintuitive conflict between dental and cardiovascular care?

Dentists recommend antibacterial mouthwashes that destroy oral bacteria needed to produce nitric oxide. Cardiologists prescribe nitroglycerin to increase the same molecule. You're paying both specialists to work against each other.

How much nitric oxide does your nose actually produce compared to mouth breathing?

Nasal passages produce 200-300 parts per billion of nitric oxide. Sinuses produce over 20,000 ppb. Mouth breathing delivers zero. Humming increases nasal production by 15-fold through enhanced gas exchange between sinuses and nasal cavity.

What's the actual biological pathway from eating beets to lower blood pressure??

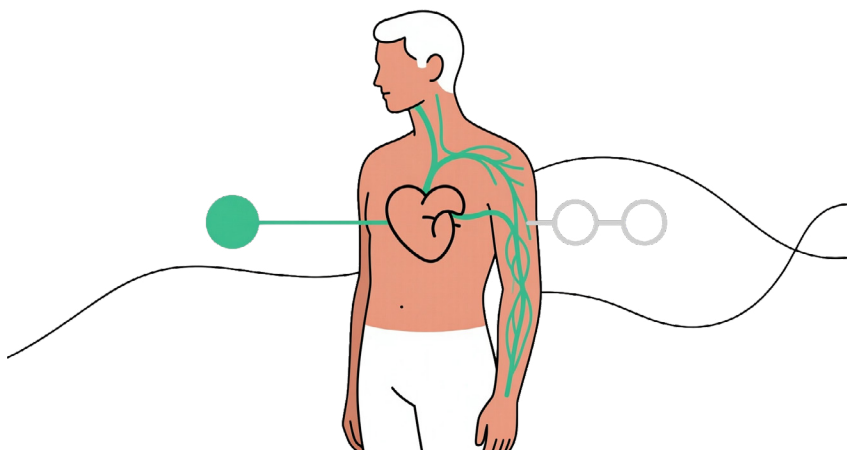
Oral bacteria convert dietary nitrates into nitrite. Your stomach converts nitrite to nitric oxide. Blood vessels relax and blood pressure drops. Antibacterial mouthwash kills the bacteria performing this conversion, breaking the chain within one week.

Why does the "air hunger" feeling during nose breathing not indicate oxygen deprivation?

The suffocating sensation is psychological, not physiological. Your body adapted to over-breathing and needs 3-5 days to recalibrate carbon dioxide tolerance. Nasal breathing actually increases oxygen saturation by 10%."

What measurable changes indicate the 30-day nasal breathing protocol is working?

Week one: dry mouth upon waking. Week two: resting heart rate drops 3-5 bpm. Week three: sleep through entire night with mouth tape. Week four: measurably lower blood pressure and natural breathing rate slows to 10-12 breaths per minute.



What Nitric Oxide Actually Does

Sarah Chen runs ultramarathons. At 42, she can maintain a 7:30 pace for 50 miles. After switching from mouth to nasal breathing during training, she found that the same pace felt easier three months later. Her heart rate at that pace dropped from 165 to 152 bpm, and her recovery time between hard efforts was halved. She wasn't training harder; she was breathing differently. The mechanism at play is that nitric oxide optimizes how the body uses oxygen at the cellular level. Here's what this molecule does:

- **Regulates vascular tone:** Keeps blood vessels flexible and responsive to changing demands.
- **Enhances immune function:** Directly inhibits bacterial and viral growth (it serves as an antimicrobial defense).
- **Improves oxygen delivery:** Optimizes red blood cell release of oxygen to tissues (the Bohr effect).
- **Supports brain function:** Acts as a neurotransmitter that affects memory, learning, and mood regulation.
- **Increases exercise efficiency:** Reduces the oxygen cost of muscle contraction by 10–15%.

The sinuses produce high concentrations of nitric oxide for antimicrobial defense. This is why patients with primary ciliary dyskinesia (a genetic condition affecting tiny hair-like structures called cilia) and cystic fibrosis – who produce very low levels of nasal nitric oxide – experience chronic sinusitis; their sinuses cannot effectively combat bacteria. Your body has developed this system over millions of years, while we have spent the last century breathing through our mouths and wondering why we feel tired.

Nasal Breathing:

Dr. McMillan's Clinical Perspective

The nose and paranasal sinuses produce nitric oxide continuously, and it concentrates in those air-filled spaces around the face. That matters because nitric oxide is antiviral, antibacterial and anti-inflammatory. When respiratory viruses are circulating widely, the simple discipline of breathing through your nose, and encouraging that gas to build through humming or similar vibration, surrounds your upper airway with a protective layer. It costs nothing, needs no prescription, and works with a defence your body already runs.

