



I Got Faster by Breathing Better

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Runner tries rhythmic breathing technique – and snags a PB.

If it weren't for the pain in my legs and my quickly deteriorating coordination, I might appreciate the words of encouragement. They're all around me at 32km mark of a recent marathon. "You're kicking ass!" reads one sign. "Great job – almost there!" yell spectators. And from speakers somewhere overhead I hear the *Rocky* theme song, "Gonna Fly Now".

"Looking great!" prod course volunteers (another lie) as I pause at an aid station to shake out the knots rippling through my quads and hamstrings. After pounding the pavement for 2 1/2 hours, every bunny hill feels like an Everest and every mile seems longer than the last. I've hit the wall. Hard.

10km later, I drag myself to a 3:25 finish. It's not terrible – many would call it respectable – but it's still 10 minutes slower than my goal, and the mental blame game begins almost immediately. But it's not until 2 weeks later that I discover the real reason behind my poor performance.

"Have you ever focused on your breathing?" asks Budd Coates, *RW* contributor and author of *Running on Air*, as we deconstruct my race after a gruelling intervals workout.

Nearly 30 years my senior, Coates regularly kicks my ass in local races – a fact that might irk me if the freakishly fast 55-year-old wasn't a 2:13 marathoner. He's also one of only 31 people in the world to run sub-3-hour marathons in five different decades of life – and he attributes his athletic achievements and longevity to rhythmic breathing, a technique he developed nearly 30 years ago.

"By pairing my breathing and my cadence, I found that I could better judge effort, maximize my lung capacity, and reduce wear and tear on my body," says Coates, who went from being a filler on his cross-country team to qualifying for Olympic marathon trials. "Want to learn?"

For the first time in weeks, I feel hope. And knowing that I won't have to train any harder has me breathing easier, which is my first mistake.

THE SCIENCE OF BREATHING

“Inhale through your nose and mouth,” says Coates as he places my hand on my stomach – a reminder to draw air deep into my lungs. My first lesson in rhythmic breathing isn't out on the road or even on a treadmill. It's on the floor of my gym, where I'm lying on my back while making my stomach alternately balloon and deflate. “Congratulations,” says Coates after 15 minutes. “You're now a belly breather.”

Before today I'd rarely given breathing a second thought because, like most people, I don't have to – respiration is automatic. We breathe in, oxygen diffuses into our blood, haemoglobin takes it to working muscles, and energy is produced. The resulting waste, carbon dioxide, is transported back to our lungs for removal. Easy enough.

But imagine running up a hill (like in this brutal workout). The effort forces your legs to work harder, increasing their demand for oxygen. Your chest heaves more rapidly in response, but eventually it's unable to keep up with the demand. Carbon dioxide, meanwhile, builds up. Soon your respiratory muscles become fatigued, and because they're more important for sustaining life, oxygen-rich blood is shunted preferentially in their direction.

“The body has to decide, ‘Do I want blood to flow to my leg muscles for running or to my respiratory muscles for breathing?’” says Dr Robert Chapman. “At the end of the day, the respiratory muscles win every time.”

Most of us make that win easy. “We use only 50 to 60 percent of our available lung capacity,” says Dr Alison McConnell, author of *Breathe Strong, Perform Better*. The reason: we rely too heavily on our chest muscles when we breathe.

“Those should be your backup,” says Coates. “You want to make your diaphragm the bigger player.” Contracting your diaphragm fully during each breath maximises the amount of oxygen you take in and the amount of carbon dioxide you remove, delaying fatigue. What's more, training your respiratory muscles to be more efficient can reduce their oxygen consumption, according to a study in the *Journal of Applied Physiology*. “And the less they need, the more you can direct to working muscles,” says Chapman.

Bringing your diaphragm into play, however, is only the first step in rhythmic breathing. Step two: pairing it with cadence, or foot strikes.

RELEARNING TO RUN

Running might appear to be a low-impact sport, but every time your foot hits the ground, you rock your joints with a force equal to more than twice your body weight. This stress is

compounded at the start of each exhale. “When you breathe out, your diaphragm and the muscles around it relax, reducing core stability,” says Coates. The less stable it is, the greater your risk of injury all over.

It gets worse. “Most runners breathe evenly with their cadence, inhaling every two steps and exhaling every two steps,” says Coates. “That means they begin each exhalation on the same foot.” Ever notice more pains on one side of your body than the other? Now you know the reason.

Rhythmic breathing disrupts that process by extending inhalations to a count of three while keeping exhalations at a count of two. “By inhaling longer than you exhale, you stay in a ‘core solid’ position for the majority of your run,” says Coates. You also begin each exhalation on a different foot, distributing the impact force equally between both sides of your body.

“The five-count pattern is best for slow to moderate running,” says Coates. “For faster running, shift to a three-count [two in, one out] pattern.”

These two patterns unlock the third benefit of rhythmic breathing: measuring effort. Using one pattern for long runs and another for races and intervals gives you an internal pacer that ensures you don’t run out of fuel too early or finish with too much left in your tank. “Running is all about efficiency,” says Coates, “and the better you are at measuring your effort, the faster you’ll get.”

RACING ON AIR

My first sign of improvement comes during a spring 10km when, to my utter amazement, I place in the top five. By fall I’ve slashed 30 seconds off my 5km and posted a previously unthinkable 1:27 half marathon. But these races are only preamble to my ultimate test: the Outer Banks Marathon.

The starting gun sounds at 7:20 a.m. on a November morning and I start out slowly, enjoying the salty air as I weave through the streets of Kitty Hawk. I feel relaxed – surprisingly – and soon find myself returning the waves of families having breakfast on their front porches as I hit 4:20 km splits. A dull ache crops up in my left foot as I pass 13 kilometres, but I shrug it off.

The next 29km fly by. Not even a notoriously steep overpass at 35km can slow me down as I cruise to a 3:19 finish, beating my earlier time by 6 minutes. It’s not an earth-shattering improvement, but I’ll take it, and not just because I completed all 42km without walking.

“You have a stress fracture,” says my podiatrist a few weeks later when I have the pain in my left foot checked out. I’d injured it before the race during a clumsy run-in with a tree limb, and chalked up the lingering ache to a minor bruise. “I honestly don’t know how you ran a marathon.”

Had I known the extent of my injury, I wouldn’t have. But by distributing the impact force equally between both sides of my body, rhythmic breathing helped me not only complete the

race but also snag a new personal best. Now fully healed, I've set myself a new goal: finishing my next marathon in under 3 hours.