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BRIGHT



More heartrate variability means your heart is better able to handle different workloads. (Monkey Business Images/Shutterstock)

STRESS MANAGEMENT

Breathe Yourself to Better Balance

How to build stress resilience with breath training—and the help of your wearable fitness tracker

BY [Patrick McKeown](#)

TIME [March 13, 2022](#)

We all have off days: times when we're jumpy, irritable, or overworked.

Sometimes, prolonged periods of high pressure catch up with us. Before we know it, we become less adaptable, and our range of responses to challenging situations becomes more narrow.

When this happens, it's normal to want to grit your teeth and carry on. This can eventually lead to burnout and disease. Then you're left trying to clamber back to your starting position, bruised and anxious. Fortunately, there's a simple way to develop greater resilience against the twists and turns of everyday life—breathe.

Breathing Away Stress

Stress isn't just in the mind; it's a physiological imbalance that affects every aspect of your life. When you're stuck in a high-stress state, it's difficult to put space between your emotional reactions and your responses. Relationships, performance, and self-esteem all suffer. One of the best ways to increase our resilience to stress is to make sure we're breathing effectively. Few things can trigger stress with the speed and certainty of poor breathing.

While being deprived of air can send us into shockwaves of fight or flight, improper or inadequate breathing can feed low-grade, persistent stress. It can also undermine the body's ability to regulate our stress response.

We can all experience and appreciate the benefits of effective breathing. Sometimes, however, it helps to have a quantifiable way to mark improvements in our breathing. This can encourage us to keep up the habits and exercises that help us breathe better. One way to do that is with a stopwatch. Another way is through the use of a wearable tracker that can monitor heart rate variability (HRV).

HRV is a valuable tool for optimizing performance, reducing stress, and improving physical and mental health. Let's explore what it means

and how you can harness it for great results—with the help of your fitness tracker.

What Is Heart Rate Variability?

We think of the heart beating with a regular rhythm. But there are small differences in speed between every beat. These differences are called heart rate variability. While you might think it's better to have a steady, even heart rate, it's actually healthier to have greater variability. HRV can tell you if your autonomic nervous system is balanced. It can indicate good physical and mental health or alert you to potential problems. It can also let you know if you've overtrained and need more time to recover before hitting the gym again.

High HRV represents greater variability between heartbeats and indicates greater resiliency. In a nutshell, your heart can change gears more quickly.

The heart must adapt to millions of processes throughout the day, so we always want to work toward optimal adaptability. Low HRV is synonymous with poor health, old age, and conditions such as sleep apnea, chronic stress, and asthma. It means you're not in such good shape, and you're more likely to struggle when

small things go wrong.

What Is ‘Good’ HRV?

First, it’s important not to get obsessed with numbers. There’s a common belief that higher HRV is always better and you may be told to aim for a certain HRV. This isn’t necessarily the case. It’s more valuable to focus on self-comparison than to try to measure up to what’s “normal” or “best.” The aim is to control and optimize HRV and to continually progress in an upward direction.

The goal is to modulate your nervous system so you can get out of a stress state. Don’t be surprised if your first readings look low. Even top athletes often have low HRV because they’ve spent years overtraining and pushing themselves to the max. These high performers often turn to HRV to find out what’s holding them back.

Using Breathwork to Optimize HRV

There are many popular health hacks to improve HRV, from ice baths to intermittent fasting. But in my experience, the most effective and accessible way to control the nervous system and optimize HRV is through the [breath](#). You see progress in real time via your wearable device, and this can be incredibly motivating.

The usual advice is to focus on slow breathing at 4.5 to 6.5 breaths per minute. This is correct, but it overlooks other aspects of breathing that are equally important. Functional everyday breathing is a crucial factor in nervous system balance and therefore in your resilience against stress. Nose breathing is infinitely better for you than mouth breathing. Breathing should be light, low, and quiet, rather than heavy, loud, and shallow. And healthy breathing has three interdependent dimensions:

Biochemistry: light breathing to correct the balance of oxygen and carbon dioxide.

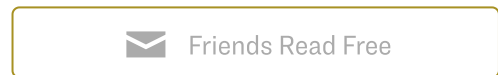
Biomechanics: diaphragm breathing to support the spine, improve lung capacity, and massage the heart.

Cadence or resonance frequency breathing: slow, paced breathing to activate the vagus nerve’s rest and digest functions.

Slow breathing at 4.5 to 6.5 breaths per minute will improve HRV, but you can also influence your results (and your well-being) by breathing only through your nose, breathing light, and engaging your diaphragm to breathe.

Nose Breathing

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The first step in optimizing your health, happiness, and longevity—because after all, that’s what we’re talking about here—is to address persistent mouth breathing. This includes sleep-disordered breathing, which is often compounded by nocturnal mouth breathing.

Mouth breathing is closely related to stress and hyper-arousal in the brain. It causes you to breathe too much air, negatively affecting the balance of oxygen and carbon dioxide in your blood. Habitual over-breathing (hyperventilation) makes you more sensitive to carbon dioxide. It perpetuates hard, fast breathing. It’s also a key factor in anxiety, sleep apnea, and asthma—all of which are associated with lower HRV.

Many of my students have reported improvements to their HRV just by switching to nose breathing during sleep. In one of my Oxygen Advantage podcast episodes, HRV expert, Dr. Jay Wiles, tells the story of a professional tennis player with very low HRV. This athlete markedly improved his results, both in terms of HRV and match performance, by working on light, slow, and deep breathing, as well as taping his mouth at night.

Reduce Breathing Volume

The next step is to integrate some

simple breathing exercises into your day. These will increase your awareness of your breathing, normalize your blood biochemistry, and strengthen your diaphragm. They will also boost your ability to respond to physical and mental challenges.

When you consciously manipulate your breathing patterns, levels of blood carbon dioxide change. This influences HRV via the vagus nerve. Light, slow breathing floods your body with feel-good hormones such as dopamine, and it reduces adrenaline and inflammation. It increases blood carbon dioxide, causing blood vessels to dilate. This modulates HRV via the blood pressure receptors. With regular practice of breathing exercises, you'll gradually find that you're more adaptable in tough situations.

Breathe Light—An Exercise to Reduce Breathing Volume

Sit up tall in a straight-backed chair, and allow your shoulders, chest, tummy, and jaw to relax. Bring your focus to the airflow. Notice the slightly colder air as it enters your nose and the slightly warmer air as it leaves your nose. Keep your focus on the inside of your nostrils and begin to gently slow down the speed of air entering the nose. At the top of each in-breath, allow a relaxed, gentle slow breath out.

The goal is to breathe about 30 percent less air into the body. You'll notice that there's much less turbulence inside your nose. You're doing the exercise correctly if you feel you would like to take a slightly bigger breath.

BOLT—Another Measure of Breath

Improving our breathing will improve our HRV, but there's also another important number you should measure. When I teach functional breathing, I use a breath-hold test called the body oxygen level test (BOLT). This test, which involves an easy breath hold after exhalation, gives an objective measure of your sensitivity to carbon dioxide and your tolerance for breathlessness.

As you practice breathing exercises and nasal breathing, your body becomes less sensitive to carbon dioxide. Breathing becomes easier and your blood pressure receptors function better. I recommend that you take your BOLT score each morning and observe whether improvements are reflected in your HRV readings.

How to Measure Your BOLT Score

Sit up straight in a chair or cross-legged on the floor. Have your stopwatch at hand.

Take a normal, silent breath in through your nose and a normal, silent breath out through your nose. Pinch your nose to hold your breath. Start the clock.

When you feel the first definite desire to breathe in, inhale gently through your nose and stop the clock. This “definite desire” might be a constriction in your throat, a small fluttering of the diaphragm, or just a feeling you would like to breathe in.

The first inhalation after your breath hold should be soft. If you need to take a big breath, you’ve pushed it too far. The time in seconds for which you can comfortably hold your breath after exhalation is your BOLT score.

You’ll continue to have breathing symptoms and be more susceptible to stress until your BOLT score reaches 25 seconds. For optimal breathing, aim for a BOLT score of 40 seconds or more. The practice of holding your breath after you exhale is another great breathwork exercise.

If your BOLT score is below 15 seconds, practice the breathe light exercise above in several small doses of 30 seconds, with a one-minute break between each. If your BOLT score is 15 seconds or more, you can continue the practice for five to 15 minutes. If you feel a little panicked

minutes. If you feel a little panicked at any point, or your breathing muscles begin to contract involuntarily, the air hunger is too strong. If this happens, take a rest.

Breathe Slow—An Exercise to Slow Breathing Rate

The objective of this exercise is to breathe slowly through the nose for between five and 15 minutes. During this exercise, you don't need to take big, full breaths to fill the lungs. As with the breathe light exercise, you may experience air hunger. This is because the volume of air you breathe each minute reduces as breathing slows. If the air hunger becomes too intense, take a rest from the exercise.

With a clock or timer, breathe softly through the nose for a count of five seconds. Breathe out softly through the nose for a count of five seconds. Your breathing should be silent and slow.

If your BOLT score is very low, you may prefer to start with a three-second inhale and a three-second exhale.

Using Breathing Exercises With Your HRV Monitor

Begin your practice of breathing exercises gently. As with any training, if you go all-in straight away, your

body will respond with stress. Adjust your training as you progress and work your way up from a few minutes each day. You'll be motivated to continue as your HRV, BOLT score, energy, and performance all improve.

Practice light (reduced volume) breathing with air hunger and breath holds after exhalation. Dramatic exercises that use deliberate hyperventilation shouldn't be practiced until your breathing is fully functional and your BOLT score is 25 seconds or more. These exercises are designed to stress the body.

When you first practice light breathing and breath holds, HRV may drop. This is because the body registers stress. As you practice, your systems will adapt. It's likely you'll find that HRV becomes significantly higher after practice, even if it dipped during the exercises.

Use HRV to help you gauge your physical training load, whether you choose to do so by lifting weights or running. If your HRV drops by more

than 20 percent after your workout, you've overtrained. If you notice a 40 percent drop overnight, take the day off. This drop in HRV is one of the biggest predictors of injury during physical training.

You can use your overnight reading along with your BOLT score to inform how hard you train the next day. If your HRV level is increasing, you have a much better chance of a successful workout. If your BOLT has dropped, focus on light, slow, nasal breathing during exercise, but ease off the pace. The same goes for if you're working in a high-pressure corporate environment. If you have low HRV before a big day at work, give yourself extra time to practice some breathing exercises and bring a little extra focus to the job at hand.

A Final Word

It's much easier to use HRV than it is to get to grips with the science. But breathing exercises, tailored via your wearable device, provide a simple way to feel better and to manage your life with greater ease.

You can find much more detailed information about HRV, the vagus nerve, and breathing exercises in my book, "The Breathing Cure."

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