



HOW TO RAISE YOUR HEART RATE VARIABILITY (HRV)

By Mark Sisson

Last week, I introduced the concept of heart rate variability – the variation of heart beat to beat intervals. Far from the metronome we might assume it to be, the healthiest heart beat follows a fractal pattern, with varying lengths of time separating each pulse. A higher heart rate variability (HRV) suggests a relaxed, low-stress physiological milieu, while a lower HRV indicates a need for recovery, rest, and sleep. That's why athletes use HRV monitoring to plan their workouts and rest periods, PR attempts and deload weeks: it eliminates the guesswork. Even if you're not an athlete, the HRV is a strong diagnostic biomarker for general health and resiliency. Today, we'll be exploring 16 ways to increase it.

The following tips are researched-based methods for increasing your HRV, but they're not deal breakers. Failing to check one or several or even most of these methods off won't necessarily result in rock bottom HRV. Maybe you have a job you love, but the commute is long. Maybe green tea makes you jittery and nauseated. I'm just giving you all the information I have so that you can find a method that works for you. No one can do them all; I certainly can't.

Oh, and I won't go into the normal stuff that positively impacts our HRV, like getting enough sleep and regular exercise. Those are all important, so keep doing them, but the benefits are implied and don't require further explication or justification.

Let's get on with it:

Rest.

We shouldn't be aiming for perpetually high HRV, because that would mean we were never encountering any stressors. We couldn't exercise. We couldn't lift heavy things or sprint (not even once in awhile). We couldn't watch scary movies. We'd never have anything to recover from and improve upon. But after these stressful events that tax our bodies, throw us out of homeostasis, and bias us toward the sympathetic nervous system, we must rest in order to restore our HRV. So make time to rest. And remember – you don't just need to rest after a hard workout. Exposure to any stressor that increases sympathetic nervous system activity should be followed by some rest, even if it's just chilling out with a good book.

Drink green tea (or take L-theanine).

Green tea is an interesting beverage, containing both stimulating (caffeine) and calming properties. In an animal model of diabetes, green tea consumption increased heart rate variability (among other cardiometabolic biomarkers). If you hate green tea, no worries. One of the active compounds found in green tea, L-theanine, has also been shown to increase HRV. That's actually a big reason why I include L-theanine in Primal Calm – for its ability to reduce sympathetic nervous system activity.

Don't procrastinate.

Procrastination is that form of self-sabotage that almost everyone practices despite the near universal denunciation it receives. I've railed against it before, and I've even given you some tips and tools for combatting it. Well, here's another reason to stop doing it: it kills your heart rate variability. In almost every available study of HRV in college students during exam week, heart rate variability plummets. The more anxious and unprepared you are for a test, the more its impending arrival will tank your HRV. What's funny is that the kids who tended toward lower HRVs actually performed



better on the tests, but that's probably a function of actually caring about the tests enough to cram for them. The better way is to plan ahead and remain low-stress during exam week not because you don't care about doing well, but because you're prepared.

Don't work too much or commute too far.

Ha, I know. Easier said than done. Regardless, long working and commuting hours don't just prevent you from seeing friends and family, doing things that you enjoy, and getting adequate sleep. They're also strongly associated with reduced HRV.

Try active commuting unless it's through an area of high pollution.

Although it didn't measure HRV directly, one paper found that active commuting increased resilience to stress and reduced stress reactivity – two indices that generally correlate with higher HRV. However, active commuting amidst high pollution might be counterproductive. Air particulate exposure is bad enough for your health and HRV, but it gets worse when you add in running or cycling. Active commuters who commute through high pollution areas breathe in more air particulates and see greater reductions in HRV.

Find a job that gives you enough reward for the work you put into it.

We can't all do jobs we love or deeply care about. I get that. But if we can find a job that gives back as much as we put into it, our HRV might benefit. One study found that job stress as measured by the work/reward ratio inversely correlated with HRV. People who felt they got sufficient reward for the work they put in (low stress) had higher nighttime HRV. People who felt they were putting in more than they received had lower nighttime HRV. Another study in young Finnish women had similar results. To me, this indicates that entrepreneurship might lead to a higher HRV, since despite all the stress that accompanies owning your own business, you definitely get the fruits of your labor (after taxes and overhead, of course).

Practice forgiveness.

Forgiveness practice is one of those methods that so-conventional-they'd-rather-die-than-take-a-supplement types would ridicule, but it's got merit. One study actually examined the vagal ramifications of giving forgiveness compared to ruminating on a past transgression. Initially, both groups induced negative feelings by thinking about a time where they were wronged; this lowered HRV. Then, one group was told to forgive their transgressor and the other group was to continue ruminating on the transgression. In the forgiveness group, HRV increased while in the ruminating group, HRV remained depressed. Note that the forgiveness occurred entirely in the subjects' heads. They didn't actually contact their transgressors. Forgiveness can happen comfortably and exclusively from the confines of your own brain.

Do yoga.

There are dozens of yoga varieties, and most of them have been found to improve heart rate variability, whether it's hatha yoga, yoga nidra, laughter yoga, or isha yoga. Even just lying in a single pose (savasana, or corpse pose) with relaxing music playing increases HRV. You won't find me in leotards and dreadlocks (that's what yoga dudes wear, right?) anytime soon, but I've got to admit that yoga is a powerful practice.



Try meditating.

If you search the literature for heart rate variability and meditation, you get the distinct impression that as with yoga, nearly every type of meditation practice has the potential to increase HRV. Vipassana (mindfulness meditation), zen, and pranic meditation all work. I've never had much success with meditating myself – guided meditation podcasts/YouTube videos worked better than trying to sit on my own – but it clearly works for many people.

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Listen to the right kind of music.

In young women without experience listening to either, baroque music seems to improve HRV relative to heavy metal. Same goes for men. While I'd bet the kid with Metallica posters (I'm showing the pitiful extent of my heavy metal knowledge here, aren't I?) on his walls would have a different HRV response to heavy metal than people without a prior relationship to it, maybe Viking death metal isn't the best choice for anyone looking to relax and increase HRV. Also, don't be fooled by the spacey vibes issuing from the local kundalini center; new age music seems to bias the autonomic nervous system response toward the sympathetic side. A safe choice is probably whatever music you find calming and soothing.

Breathe deeply and slowly.

Slow breathing consistently raises HRV. Don't get hung up on the pattern of the breath, which doesn't matter so much as long as the rate is slow. Of course, I wouldn't recommend deep breathing exclusively. That would just be weird.

Try alternate nostril breathing.

Huh? It sounds odd, but it's simple and it works:

1. Place your ring and pinky fingers at your left nostril and your thumb at your right nostril.
2. Block the left nostril using your ring and pinky fingers and inhale through your right nostril.
3. Block the right nostril with your thumb and exhale through your left nostril.
4. Inhale through your left nostril, keeping the right nostril blocked.
5. Continue for 9 more rounds.

Studies show that alternate nostril breathing can increase HRV.

Go for a walk in nature.

The Japanese therapy known as "forest bathing," which involves taking a short, leisurely visit to the forest, increases HRV and reduces stress. Since all trees (and plant matter in general) give off the volatile organic compounds thought to be responsible for the benefits, any nature setting should do the trick.

Take fish oil or eat seafood.

Several studies indicate that taking omega-3 supplements can increase HRV. In patients with high



triglycerides, a largish dose of EPA and DHA (3.4 grams/day) increased HRV at rest and in times of stress (when a high HRV can really help). A smaller dose (0.85 g/day) did not. In men who've recently had heart attacks (a population in dire need of improved heart rate variability), omega-3s increase HRV. These results jibe with the well-known inhibitory effect of marine omega-3s on stress hormones.

Travel back in time and tell your pregnant mother to start exercising.

Exercising during pregnancy appears to increase fetal HRV (a good thing, just as it is for humans out of the womb) and confer epigenetic benefits to the HRV of infants one month post-birth. It's unclear whether these benefits persist into childhood and adulthood, but I'd probably take the bet that they do. If you can swing time travel, make it happen. Just be wary of paradoxes (don't even go near your grandpa) and tears in the space time, even small ones. Take along a photo of yourself; if your image starts to fade, something has gone horribly wrong.

While you're back there, have her also eat seafood or take DHA supplements.

Pregnant mothers who take DHA supplements (or eat foods high in DHA, like fish) improve the heart rate variability of their fetuses.

Okay, that's it for today, folks. With any luck, everyone will find something new and useful to implement into their life. Even if you're not into the HRV stuff, most of these recommendations have the added benefit of simply being pleasant and good for overall quality of life.