

WELLNESS TEAM CULTURE

Evidence-based wellness, leadership, and team dynamics

RESEARCH BRIEF · THE EVIDENCE, PLAINLY

Calm Was Never the Goal

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A regulated nervous system is not one that stays calm. It is one that can rise to meet a demand and travel all the way back down. Heart rate variability is the measurable window into that range, and the capacity to move between states has a name: autonomic flexibility.

WHAT WAS ACTUALLY STUDIED

01 Thayer, Hansen, Saus-Rose & Johnsen (2009), *Annals of Behavioral Medicine*

TIER I

A model paper laying out neurovisceral integration: the framework tying heart rate variability to the brain circuit that links the prefrontal cortex to the deeper structures running the stress response. It reviews the group's own experiments relating individual differences in heart rate variability to executive function and self-regulation.

02 Goessl, Curtiss & Hofmann (2017), *Psychological Medicine*

TIER I · META-ANALYSIS

A random-effects meta-analysis of 24 studies (484 participants) testing whether heart rate variability biofeedback, a slow paced breathing practice, reduces self reported stress and anxiety. It pooled both within-group and controlled between-group comparisons.

03 Giorgi & Tedeschi (2025), *Acta Neurologica Belgica*

TIER I · REVIEW

A recent scoping review of slow breathing and heart rate variability biofeedback, synthesizing effects on high-frequency heart rate variability, respiratory sinus arrhythmia, baroreflex sensitivity, and what the authors define as autonomic flexibility: the dynamic ability of the system to shift between sympathetic and parasympathetic dominance.

WHAT THEY FOUND

Heart rate variability is not a fitness stat. In the neurovisceral integration model it is a peripheral readout of the prefrontal circuit that governs emotion regulation, executive function, and the flexible shifting between states, with higher resting heart rate variability tracking more optimal functioning (Thayer). Lower values mark a system that has lost the ability to respond flexibly to changing demands.

That range is trainable. Slow paced breathing at roughly six breaths a minute, with the exhale lengthened, reliably raised high-frequency heart rate variability and improved autonomic flexibility and baroreflex sensitivity across the reviewed studies (Giorgi and Tedeschi). The intervention works on the vagal brake, not on willpower.

0.83

the pooled effect size (a large effect) for heart rate variability biofeedback on self reported stress and anxiety, across 24 controlled studies (Goessl et al.).

The clinical payoff is well-powered. HRV biofeedback produced a large reduction in stress and anxiety, with a between-groups effect size of 0.83, and the effect held regardless of study year, sample sex balance, or number of sessions (Goessl). The practice behind the newsletter's core action has real evidence under it.

WHERE THE EVIDENCE STANDS

Three sources, one throughline.

One establishes what heart rate variability measures: the integrity of the circuit that lets your system move between states rather than lock into one (Thayer). One shows the range responds to a specific, simple practice (Giorgi and Tedeschi). One quantifies how much that practice moves stress and anxiety, and finds a large effect that holds across conditions (Goessl). Read together, they point past the popular goal of staying calm toward a different target: the flexibility to activate and recover on demand.

That is the shift. A model, a mechanism, and a meta-analysis line up on the same conclusion. The thing worth training is not stillness. It is range.

WHAT THIS DOES NOT PROVE

Heart rate variability is a strong marker, not the whole nervous system. It indexes vagal and prefrontal regulation well, but a single number does not capture everything the autonomic system is doing, and resting values are shaped by age, fitness, sleep, alcohol, and genetics as much as by regulation skill. A low morning reading is noise until it becomes a trend.

The biofeedback evidence is strong but bounded. Effects are largely on self reported stress and anxiety, session protocols vary, and more well-controlled trials are still called for (Goessl). Much of the underlying HRV-and-regulation work is correlational, so higher heart rate variability travels with better regulation without proving a clean causal arrow in every direction. None of this is diagnostic. This is education, not medical advice. If you are dealing with a cardiac condition or persistent dysregulation, a clinician is the right next step before starting a breathing protocol.

WHAT IT MEANS FOR YOU

If rest alone has not been working, the target may be wrong. A nervous system stuck in one state, even a calm one, is not regulated. It is stuck. The lever is training the whole range: slow breathing at about six breaths a minute to strengthen the vagal brake, letting stress responses rise and then deliberately practicing the return, using movement to train the top of the range, and watching the trend over weeks rather than any single day. The newsletter lays out the five moves. The research above is why they aim at the right system.

GO TO THE SOURCE

TIER 1 Thayer, J. F., Hansen, A. L., Saus-Rose, E., & Johnsen, B. H. (2009). *Annals of Behavioral Medicine*. pubmed.ncbi.nlm.nih.gov/19424767

TIER 1 · META Goessl, V. C., Curtiss, J. E., & Hofmann, S. G. (2017). *Psychological Medicine*. pubmed.ncbi.nlm.nih.gov/28478782

TIER 1 · REVIEW Giorgi, F., & Tedeschi, R. (2025). *Acta Neurologica Belgica*. pubmed.ncbi.nlm.nih.gov/40252198

Tier 1 means peer-reviewed primary research or meta-analysis, the strongest evidence. Tier 2 means an expert framework or smaller study that traces to peer-reviewed work. We grade every source so you can see the weight behind each claim.

Pegasus Realm publishes Wellness Team Culture and the practice
resources behind it.

Education, not medical advice.

