COMPANION TO THE BRAIN LISTENS TO THE HEART

The Evidence Map

Every verdict in the book on a single sheet: what science has shown about your heart, your breath, and your brain, sorted by how sure it is.

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HIGH CONSENSUS
Established across many studies and broadly accepted by the people who study it.

MODERATE
Good studies point the same way, but questions remain about how large the effect is, how long it lasts, or who benefits.

PRELIMINARY
Early, promising, and unconfirmed.

NOT SHOWN
Tested and has not held up, or never properly tested at all. Not the same as "false."

1 HOW THE SYSTEM WORKS

Parts One and Two

A two-way conversation — Ch. 2 · 4

HIGH CONSENSUS

Heart and brain regulate each other in both directions.

Most vagus fibers, **80–90%**, carry signals *up* to the brain: the "brake nerve" is above all a listening nerve.

The exhale is the brake — Ch. 4

HIGH CONSENSUS

The heart slows on every exhale.

MODERATE

A longer exhale deepens that slowing and the sense of calm.

Evidence from small laboratory studies of immediate effects.

The heart's little brain — Ch. 3

HIGH CONSENSUS

The heart has its own network of neurons for local reflexes.

About **43,000** neurons (Pauza 2000) against **86 billion** in the brain: a reflex center, not a second mind.

Variability is a window on the brake — Ch. 5

HIGH CONSENSUS

Heart rate variability reflects vagal control of the heart.

After a heart attack, SDNN under 50 ms meant **5.3×** the odds of dying (Kleiger 1987). In healthy people, low HRV: **32–45%** higher risk of a first cardiovascular event (Hillebrand 2013). Associations, not causes.

Your wrist is an estimate — Ch. 6

HIGH CONSENSUS

Compare a reading with your own range, measured the same way each time.

A chest strap caught **99.6%** of beat intervals (Gilgen-Ammann 2019); no wrist device got calories within **20%** (Shcherbina 2017).

Feeling your own heartbeat — Ch. 7

MODERATE

Accuracy, sensibility, and awareness of the heartbeat are separate skills.

NOT SHOWN

Anxious people sense their heartbeat more accurately (55 studies, Adams 2022).

PRELIMINARY

Interoceptive training reduces anxiety (one trial).

Breathing at resonance — Ch. 8

HIGH CONSENSUS

Near 6 breaths a minute, heart rate and blood pressure swing widely and baroreflex sensitivity rises during practice.

HIGH CONSENSUS

Each person's resonant rate is a little different.

Emotion as the brain's best guess — Ch. 7

MODERATE

The brain reads body signals in the light of context, and can misread them.

PRELIMINARY

Clinical uses of this framework.

If a feeling is partly a guess, the guess can be revised.

2 WHAT THE PRACTICES CAN DO

Parts Three and Four · effects are averages; people vary

MODERATE REAL, MODEST, WORTH HAVING

Less stress and everyday anxiety — Ch. 12

Fincham 2023: 12 trials, 785 adults; effect size **0.35**, small to moderate.

HRV biofeedback, across conditions — Ch. 9

Lehrer 2020: **58** randomized trials; effect about **0.37**. Against active treatments: as good, not better.

A few points off blood pressure — Ch. 12

Chaddha 2019: 17 trials, **−5.6 / −3.0 mmHg**. Garg 2024: **−7 / −3.4**. Never change medication on your own.

Higher resting HRV after a course of slow breathing — Ch. 8

Small on average and variable from person to person.

Coherence training raises the coherence score — Ch. 10

During practice, largely because it is slow breathing.

NOT SHOWN TESTED OR CLAIMED, NOT SHOWN YET

Biofeedback beats slow breathing without a screen — Ch. 9

Too few trials have compared them.

A personally measured rate beats a fixed 6 a minute — Ch. 8

Not in the single direct comparison so far.

Slow breathing for palpitations — Ch. 12

Breathing practices have not been tested for them.

PRELIMINARY PROMISING, NOT CONFIRMED

Low mood and depression, as a treatment — Ch. 9 · 12

Pizzoli 2021: 14 trials, 794 people, effect **0.38**. Gao 2026: no better than an active comparison.

Better sleep — Ch. 12

Laborde 2019: 64 adults, 30 nights, sleep quality **0.62**. For chronic insomnia, CBT-I comes first.

Chronic pain — Ch. 12

Chen 2026: 17 trials, 633 people with low back pain; certainty low to very low.

PTSD — Ch. 12

Kenemore 2024: 5 studies, 95 service members, effect **0.56**; most had no control group.

Less inflammation — Ch. 12

Herhaus 2023: TNF-alpha fell in 55 people with panic disorder; one blood draw before, one after.

HeartMath programs for clinical outcomes — Ch. 10

Independent trials are mixed.

Apps and remote biofeedback as good as supervised — Ch. 9

Early evidence only.

The cyclic sigh — Ch. 8

Balban 2023: 108 people, 5 minutes a day for a month; mood improved more than with meditation. Promising.

3 POPULAR CLAIMS THE EVIDENCE DOESN'T SUPPORT

Not shown · Chapters 3, 8, 10, and 11

✕ Transplanted hearts carry the donor's memories — Ch. 3 · 11

Of 47 recipients in Vienna (1992), **79%** saw no change in themselves. A 2026 review found no evidence of any transfer.

✕ Your heart's field broadcasts emotions — Ch. 10

Nor does the heart perceive the future or sync with the planet's rhythms. That positive emotion adds anything to slow breathing: untested.

✕ Ear gadgets "reset" the vagus — Ch. 11

25 studies in healthy people: no effect on vagal HRV (Wolf 2021). Cold on the face is a real brake, but only while it lasts.

✕ Humming and gargling tone the vagus — Ch. 11

Humming helps because it is a long, slow exhale (Kim 2026). Gargling has never been tested.

✕ Taping your mouth at night — Ch. 8

10 studies, 213 patients (Rhee 2025): no clear benefit, and a risk when the nose is blocked. Not shown, with possible harm.

✕ Hold your breath to build CO_2 tolerance — Ch. 8

Not shown for regulating the nervous system in healthy people; Wim Hof breathing, not shown for general health.

SAFE FOR ALMOST EVERYONE
Slow, gentle breathing. Slower, not deeper; no forced holding.

STOP IF YOU FEEL
Dizzy, short of breath, or unwell. Go back to normal breathing.

ASK YOUR DOCTOR FIRST
If you have a heart rhythm disorder, a history of fainting, lung or heart disease, or intense psychological symptoms. Never stop a blood pressure medication on your own.

Every verdict and number on this map comes from *The Brain Listens to the Heart* (Zen Books, 2026); full references are in the Notes and References at the end of each chapter. Ratings summarize the whole body of research, not single studies. This map is educational and does not replace medical advice.

PRINT IT BIG
This map is vector art. It prints sharp at 18 × 24 in or larger (24 × 32 or 36 × 48 in) at any print shop or online poster service.

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