Breathing Exercises, Examined

What the Research Says About Slow Breathing, Stress, Anxiety and Blood Pressure

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2026 Edition | Free chapters 1 to 3

Chapter 1: Slow Breathing and the Heart's Rhythm

Slow, deliberate breathing is the core of most breathing exercises. A very large review asked what it does to the heart's rhythm, a sign of how the body's calming system is working. This chapter is general education, not medical advice.

WHAT THEY DID

The authors say voluntary slow breathing is used to support physical and mental health because it is thought to act on the parasympathetic nervous system, the part that calms the body, but no complete numerical review existed. They reviewed its effect on heart rate variability, the natural variation in time between heartbeats, using measures that reflect that calming system. They looked at three points: during a breathing session, straight after one session, and after a course of sessions. From 1,842 abstracts, 223 studies were included: 172 for during, 16 for straight after one session, and 49 for after a course (Laborde, Allen, Borges, Dosseville, Hosang, Iskra, Mosley and colleagues, 2022).

WHAT THEY FOUND

Heart rate variability linked to the calming system rose with voluntary slow breathing, during the session, straight after one session, and after a multi-session course. The authors say that, given the role of this system in many health outcomes, slow breathing could be advised as a low-tech, low-cost technique for prevention and as an extra to treatment, with few adverse effects expected.

WHAT TO TAKE FROM THIS

Across hundreds of studies, slow breathing shifted a measurable body signal in the calming direction, and the effect appeared during practice, soon after it and after weeks of it.

LIMITS

The abstract gives no effect sizes or numbers of people. A change in heart rate variability is a body signal, not a feeling or a health outcome in itself. The studies mixed healthy people and patients. This is general education, not medical advice.

Anyone with a heart or lung condition should check with a doctor before changing how they breathe in a structured way.

HABITS TO TRY

These are practical suggestions, not findings from the review.

Try five minutes of slow, easy breathing, in through the nose and out gently.

Do not strain or hold your breath; stop if you feel dizzy.

Practise at the same time each day for two weeks.

Notice your mood and your body before and after.

Ask a doctor first if you have a health condition.

A WORKED EXAMPLE (INVENTED FOR PRACTICE)

A man sits for five minutes each morning breathing slowly. After two weeks he rates his calm before work at 4 instead of 3. It is his own record, not a study result.

PRACTICE EXERCISE

For one week, spend five minutes on slow, easy breathing once a day and rate your calm from 1 to 5 before and after.

KEY POINTS

A review of 223 studies found voluntary slow breathing raised heart rate variability tied to the body's calming system during, straight after and after courses of practice. The abstract gives no effect sizes.

Chapter 2: Belly Breathing and Stress

Belly breathing, also called diaphragmatic breathing, is the most common beginner exercise. A review asked whether it lowers stress. This chapter is general education, not medical advice.

WHAT THEY DID

The authors reviewed studies of adults aged 18 or over who used diaphragmatic breathing on its own to reduce physical and psychological stress, compared with no treatment or usual treatment, which could just be ordinary breathing. They searched many databases up to January 2018 and followed a standard appraisal method (Hopper, Murray, Ferrara and Singleton, 2019).

WHAT THEY FOUND

Only three studies met the rules: one randomised controlled trial and two quasi-experimental studies. The results could not be pooled because the interventions and measures differed. All three found diaphragmatic breathing reduced stress: one found better respiratory rate and salivary cortisol, one found lower systolic and diastolic blood pressure, and one found a better score on the stress part of a standard questionnaire (DASS-21). The interventions ranged from one 20-minute session to nine months. The authors conclude it may decrease stress. The abstract is cut off at its last words, so we do not quote the full conclusion.

WHAT TO TAKE FROM THIS

Three small studies all pointed the same way, with different measures. That is encouraging but thin.

LIMITS

Only three studies, two without full random assignment, and the authors point to limits in sample size and in length of follow-up. They could not pool results. The abstract gives no numbers. This is general education, not treatment for stress, anxiety or any illness. If stress is overwhelming, speak to a doctor or counsellor.

HABITS TO TRY

These are practical suggestions, not findings from the review.

Sit or lie down, one hand on your belly, and let it rise as you breathe in.

Breathe out slowly, a little longer than you breathe in.

Practise for five to ten minutes once or twice a day.

Rate your stress from 1 to 5 before and after.

Stop if you feel light-headed.

A WORKED EXAMPLE (INVENTED FOR PRACTICE)

A student does ten minutes of belly breathing before study each day for three weeks. Her stress rating before studying averages 3 instead of 4. It is her own record, not a study result.

PRACTICE EXERCISE

Try ten minutes of belly breathing on three days and rate your stress before and after each.

KEY POINTS

A review found only three studies of diaphragmatic breathing alone for stress; all three reported reduced stress on different measures, but the studies were few and varied, and results could not be pooled.

Chapter 3: Slow Breathing and Blood Pressure

Blood pressure is the most studied physical effect of slow breathing. A pooled analysis looked at people with high or near-high blood pressure. This chapter is general education, not medical advice. Never stop or change blood pressure medicine without your doctor.

WHAT THEY DID

The authors reviewed randomised trials of slow breathing, with or without a guiding device, and blood pressure in people with hypertension or prehypertension, or taking blood pressure medicine. To count, the breathing had to be at 10 breaths a minute or fewer, for at least 5 minutes, on at least 3 days a week, for at least 4 weeks, with at least 4 weeks of follow-up and a control group. Of 103 citations for full review, 17 studies were included (Chaddha, Modaff, Hooper-Lane and Feldstein, 2019).

WHAT THEY FOUND

Slow breathing lowered systolic blood pressure by 5.62 mmHg (95 percent interval -7.86 to -3.38) and diastolic blood pressure by 2.97 mmHg (interval -4.28 to -1.66). The studies differed a lot. The authors call the reduction modest and say slow breathing may be a reasonable first treatment for low-risk hypertensive and prehypertensive patients who are reluctant to start medication.

WHAT TO TAKE FROM THIS

A few minutes of slow breathing, several days a week for a month or more, went with a small but real fall in blood pressure in these trials. It looks like a helpful extra, not a replacement for care.

LIMITS

The studies varied a lot, and the abstract does not say how long the effect lasted or what the controls did. The authors' remark about a first treatment applies to low-risk patients under medical guidance. This is general education, not medical advice. Talk to your doctor about blood pressure; do not use breathing in place of treatment you were prescribed.

HABITS TO TRY

These are practical suggestions, not findings from the analysis.

If your doctor agrees, try slow breathing for ten minutes, at 10 breaths a minute or fewer, as in the trials.

Practise at least three days a week for a month.

Keep a record of your home blood pressure readings if your doctor has asked you to measure.

Share the record with your doctor.

Keep all prescribed treatment unchanged unless your doctor says otherwise.

A WORKED EXAMPLE (INVENTED FOR PRACTICE)

A woman with borderline high blood pressure asks her doctor and starts ten minutes of slow breathing four days a week, alongside her usual check-ups. After six weeks her readings are a little lower and she shows them to her doctor. It is her own account, not a study result.

PRACTICE EXERCISE

Ask your doctor whether slow breathing suits you, and write down the answer.

KEY POINTS

A meta-analysis of 17 randomised trials found slow breathing lowered systolic blood pressure by 5.62 mmHg and diastolic by 2.97 mmHg in people with high or borderline blood pressure, with high variation between studies. The authors call the effect modest.

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