

HOW SLOW BREATHING CAN CHANGE YOUR LIFE

Reference: Zaccaro A, Piarulli A, Laurino M, et al. **How Breath-Control Can Change Your Life: A Systematic Review on Psycho Physiological Correlates of Slow Breathing.** *Front Hum Neurosci.* 2018;12:353

Key Points

- Slow breathing increases heart rate variability, respiratory sinus arrhythmia, and alpha brain wave activity
- These physiological changes lead to improved behavioural outcomes
- The nose links slow breathing to these positive physiological and psychological outcomes

Summary

The authors looked at the literature on slow breathing and psychological and behavioural outcomes, to see what physiological changes were common to all slow breathing studies that showed improvements in stress and anxiety.

The physiology they focused on was heart rate variability (HRV), respiratory sinus arrhythmia (RSA), and brain wave activity. The studies they examined used questionnaires to assess stress, anxiety, depression, and wellbeing.

Slow breathing was associated with:

- Increase in HRV
- Increase in RSA
- Increase in alpha brain wave activity (“flow” or “calm alert”) and decreased theta brain activity

These physiological changes observed during and after slow breathing were associated with improved psychological and behavioural outcomes:

- Reduced anxiety
- Improvement with depression
- Reduced anger
- Increased relaxation

The authors also reviewed studies showing nasal breathing has a direct relationship to brain activity, which disappeared when the tissue in the nasal cavity was numbed. Also, certain areas of the brain follow oscillations that match breathing - but only with nasal breathing. They hypothesize that the nose is the crucial link between slow breathing, brain and autonomic nervous system function, and positive emotional outcomes.

Application

Applying slow nasal breathing through Breathexchange functional breath training may have positive effects on HRV, RSA, and brain wave activity, potentially leading to improved psychological and behavioural outcomes.