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## Mindfulness practices can mediate stress: As told by physiological markers

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**Background:** Mindfulness practices like yoga asana and meditation are increasingly popular for the management of stress; however, the neurobiological effects of these practices on stress reactivity are not well understood. Given the frequency with which people are selecting such interventions as a form of self-management, it is important to determine their effectiveness.

**Materials & Methods:** Two systematic reviews and meta-analyses of randomized controlled trials compared practices that included yoga asana or mediation, to an active control, on stress-related physiological measures. The review focused on studies that measured physiological parameters such as blood pressure, heart rate, cortisol and peripheral cytokine expression. MEDLINE, AMED, CINAHL, PsycINFO, SocINDEX, PubMed and Scopus were searched.

**Results:** 42 studies compared yoga asana to an active control group. Interventions that included yoga asana were associated with reduced evening cortisol, waking cortisol, ambulatory systolic blood pressure, resting heart rate, high frequency heart rate variability, fasting blood glucose, cholesterol and low density lipoprotein, compared to active control. 45 studies compared meditation to an active control group. All meditation subtypes reduced systolic blood pressure. Focused attention meditations also reduced cortisol and open monitoring meditations also reduced heart rate. When all meditation forms were analyzed together, meditation reduced cortisol, C-reactive protein, blood pressure, heart rate, triglycerides and tumor necrosis factor-alpha.

**Conclusion:** Mindfulness practices such as yoga asana and meditation appear to be associated with improved regulation of the sympathetic nervous system and hypothalamic-pituitary-adrenal system in various populations.

### Biography

Michaela Pascoe is a Researcher in the field of stress, inflammation, wellbeing and mental health. She has drawn attention to the impact of stress on mental health and cognitive outcomes and the mediating influence of non-pharmacological stress mediating interventions, such as diet, exercise and mindfulness on these outcomes. She has researched the impact of stress both in the context of chronic illness and young people in Australia experiencing chronic, normative stress related to their academic demands.

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