

## Effect of Yoga Sitting Twisting Posture on Mood State and Heart Rate Variability

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## Abstract

Introduction: Mind-body exercise is considered an acceptable method for improving and maintaining autonomic flexibility, and well-being, and inversely associated with physiological stress and psychological stress. Yoga enhances autonomic activity, mitigates stress and benefits stress-related clinical conditions. However, the relationship between autonomic activity and mood states during different yoga posture practices has not been widely explored. The aim of this study was to investigate whether the practice of yoga sitting twisting posture exerts any effect on heart rate variability (HRV) and mood state in healthy women.

Methods: Twelve healthy yoga-naive women (aged between 40 and 55) participated in this crossover trial with a week washout period. Participants were divided into two groups (common posture [ C ] and sitting twisting posture [ T ]), both groups were assigned to do the yoga exercises in different asana in the first week, and the week after next. Each exercise lasts for 30 minutes. Profile of mood states (POMS) and heart rate variability (HRV) were assessed before and after yoga practice program.

Results: After two-week yoga practice program, both groups had positive effect on mood state ( $p < 0.05$ ) and autonomic flexibility (HRV total power = C:  $649.5 \pm 118.8 \text{ ms}^2$  vs  $1160.8 \pm 188.1 \text{ ms}^2$ ,  $p < 0.05$ ; T:  $699.5 \pm 135.0 \text{ ms}^2$  vs  $1130.3 \pm 234.0 \text{ ms}^2$ ,  $p < 0.05$ ), while the twisting group gets better results on POMS scores after practice program (total:  $90.5 \pm 2.9$  vs  $93.7 \pm 2.9$ ,  $p < 0.05$ ; fatigue:  $5.1 \pm 1.2$  vs  $8.3 \pm 1.3$ ,  $p < 0.05$ ).

Conclusions: This study may provide a reference for improving general population's psychological stress and pathology in the future.

Keywords: Yoga, Meditation, Tension