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Original Research Article**Rhythmical massage improves autonomic nervous system function: a single-blind randomised controlled trial**

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ABSTRACT

BACKGROUND: Rhythmical massage therapy (RMT) is a massage technique used in anthroposophic medicine.

OBJECTIVE: The authors aimed to investigate the physiological action of RMT on the cardiovascular system by analysing heart rate variability (HRV).

DESIGN, SETTING, PARTICIPANTS AND INTERVENTION: This study was a randomised, controlled and single-blinded trial, involving 44 healthy women (mean age: 26.20 ± 4.71 years). The subjects were randomised to one of three arms: RMT with aromatic oil (RA), RMT without aromatic oil (RM) or standardised sham massage (SM). In the study the subjects were exposed to a standardised stress situation followed by one of the study techniques and Holter electrocardiograms (ECGs) were recorded for 24 hours.

MAIN OUTCOME MEASURES: HRV parameters were calculated from linear (time and frequency domain) and nonlinear dynamics (symbolic dynamics, Poincare plot analysis) of the 24-hour Holter ECG records.

RESULTS: Short- and long-term effects of massage on autonomic regulation differed significantly among the three groups. Immediately after an RMT session, stimulation of HRV was found in the groups RA and RM. The use of an aromatic oil produced greater short-term measurable changes in HRV compared with rhythmic massage alone, but after 24 h the effect was no longer distinguishable from the RM group. The lowest stimulation of HRV parameters was measured in the SM group.

CONCLUSION: RMT causes specific and marked stimulation of the autonomic nervous system. Use of a medicinal aromatic oil had only a temporary effect on HRV, indicating that the RM causes the most relevant long-term effect. The effect is relatively specific, as the physiological effects seen in the group of subjects who received only SM were considerably less pronounced.

TRIAL REGISTRATION: Registration trial DRKS00004164 on DRKS.

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Keywords: Sham massage; Well-being; mood; Alertness; Relaxation; Stress; Heart rate variability; Randomised controlled trial

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