

# **A pilot study of the efficacy of heart rate variability (HRV) biofeedback in patients with fibromyalgia**

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Fibromyalgia (FM) is a non-inflammatory rheumatologic disorder characterized by musculoskeletal pain, fatigue, depression, cognitive dysfunction and sleep disturbance. Research suggests that autonomic dysfunction may account for some of the symptomatology of FM. An open label trial of biofeedback training was conducted to manipulate suboptimal heart rate variability (HRV), a key marker of autonomic dysfunction.

**METHODS:** Twelve women ages 18-60 with FM completed 10 weekly sessions of HRV biofeedback. They were taught to breathe at their resonant frequency (RF) and asked to practice twice daily. At sessions 1, 10 and 3-month follow-up, physiological and questionnaire data were collected.

**RESULTS:** There were clinically significant decreases in depression and pain and improvement in functioning from Session 1 to a 3-month followup. For depression, the improvement occurred by Session 10. HRV and blood pressure variability (BPV) increased during biofeedback tasks. HRV increased from Sessions 1-10, while BPV decreased from Session 1 to the 3 month follow-up.

**CONCLUSIONS:** These data suggest that HRV biofeedback may be a useful treatment for FM, perhaps mediated by autonomic changes. While HRV effects were immediate, blood pressure, baroreflex, and therapeutic effects were delayed. This is consistent with data on the relationship among stress, HPA axis activity, and brain function.