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# A Systematic Review of Neurofeedback as a Treatment for Fibromyalgia Syndrome Symptoms

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## Abstract

**Objectives:** Fibromyalgia syndrome [FMS] is a musculoskeletal condition that is defined by widespread pain, mood disturbance, and cognitive dysfunction. There is debate surrounding the causes of this disorder, with growing attention being placed on central nervous system [CNS] abnormalities. Neurofeedback is a form of biofeedback that is designed to alter neurophysiological processes using electro-encephalogram [EEG] technology. This review includes systematic examination and comparison of neurofeedback interventions used to treat FMS symptoms [i.e. pain, fatigue, cognitive function, depression, anxiety, FMS impact]. Systematic searches were conducted on PubMed, PsycINFO, Cochrane Library, Medline, Web of Science, and the Society of Behavioral Medicine listserv for published and unpublished reports of interventions studies.

**Findings:** Seven of the identified 255 studies met the criteria for inclusion. Three of these reports described traditional neurofeedback interventions and four described alternative neurofeedback training. There was a significant variability in terms of study design, intervention procedures [length and number of treatment sessions], and overall study quality. The traditional neurofeedback articles were ranked as having the poorest quality and reported greatest symptom improvements in response to neurofeedback as a monotherapy. The articles describing alternative neurofeedback varied in their global quality and provided mixed results with regards to its efficacy as a treatment.

**Conclusions:** The research provides initial evidence of the utility of neurofeedback in the treatment of FMS symptoms; however, additional high quality research is needed.

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