

# Neurofeedback and biofeedback with 37 migraineurs: a clinical outcome study

Deborah A Stokes and Martha S Lappin

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## Abstract (provisional)

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### Background

Traditional biofeedback has grade A evidence for effectively treating migraines. Two newer forms of neurobiofeedback, EEG biofeedback and hemoencephalography biofeedback were combined with thermal handwarming biofeedback to treat 37 migraineurs in a clinical outpatient setting.

### Methods

37 migraine patients underwent an average of 40 neurofeedback sessions combined with thermal biofeedback in an outpatient biofeedback clinic. All patients were on at least one type of medication for migraine; preventive, abortive or rescue. Patients kept daily headache diaries a minimum of two weeks prior to treatment and throughout treatment showing symptom frequency, severity, duration and medications used. Treatments were conducted an average of three times weekly over an average span of 6 months. Headache diaries were examined after treatment and a formal interview was conducted. After an average of 14.5 months following treatment, a formal interview was conducted in order to ascertain duration of treatment effects.

### Results

Of the 37 migraine patients treated, 26 patients or 70% experienced at least a 50% reduction in the frequency of their headaches which was sustained on average 14.5 months after treatments were discontinued.

### Conclusions

All combined neuro and biofeedback interventions were effective in reducing the frequency of migraines with clients using medication resulting in a more favorable outcome (70% experiencing at least a 50% reduction in headaches) than just medications alone (50% experience a 50% reduction) and that the effect size of our study involving three different types of biofeedback for migraine (1.09) was more robust than effect size of combined studies on thermal biofeedback alone for migraine (.5). These non-invasive interventions may show promise for treating treatment-refractory migraine and for preventing the progression from episodic to chronic migraine.