

HEG Biofeedback Treatment for Migraines

Biofeedback and **neurofeedback** are non-pharmaceutical treatments which are extremely effective for migraines and chronic headaches.

Hemoencephalography (HEG) is a new type of biofeedback where the patient learns to train the frontal lobe cerebral blood flow. An infrared camera reads the temperature of the blood flow in the frontal lobe beneath the skull.

How HEG works:

? The patient begins watching a movie of his or her choice. If the patient keeps the temperature above a threshold level, the movie continues to play.

? If the temperature drops in the frontal lobe, then the movie stops.

? By focusing on a bar graph that's located on the computer screen, the patient can bring up the temperature and the movie will continue.

HEG demonstration:

This biofeedback system was originally designed for migraine headache treatment, and has shown promising results!

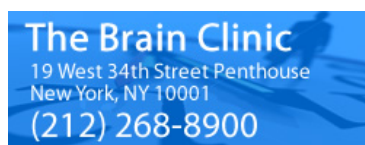
HEG Research:

In a recent study, Carmen (2004) took 100 migraine patients who had tried many treatments, including several medications, with little success. In only 6 HEG sessions, positive results were seen, and over 90 percent of the patients reported significantly positive results, according to their own report.

In the 2002 review by Penzien, Rains and Andrasik, it was noted that even by 1980, there were enough studies to conduct a meta-analysis (Blanchard, Andrasik, Ahles, Teders, & O'Keefe, 1980), which revealed that over the 16 studies, behavioral treatment of migraines showed promise. By 1999, Goslin, Gray, McCrory, Eberlin, Tulsy and Hasselblad identified 355 articles describing behavioral and physical treatment for migraines, and the 70 controlled studies of behavioral treatments for migraines meeting strict criteria for inclusion in this meta-analysis resulted in reductions in migraines of 32 to 49 percent. The treatments included EMG training, relaxation therapy, combined EMG and relaxation, and cognitive-behavior therapy. All were more effective than wait list controls.

Neurofeedback has also been used to treat migraine headaches. Although this research is quite new, it is still very promising (Siniatchkin, Hierundar, Kropp, Khunert, Gerber & Staphani, 2000).

For more information about treatment modalities such as EMG training [click here](#).



References:

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- Penzien, D., Rains, J., & Andrasik, F. (2002). Behavioral management of recurrent headache: Three decades of experience and empiricism. *Applied Psychophysiology and Biofeedback*, 27 (2), 163-181.
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