

Healthy Outlook Blog


Biofeedback: A High-Tech Weapon Against Migraines

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By Sue Russell | Posted July 18 2011

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Biofeedback training has helped NASA astronauts cope with space sickness and performers with stage fright. It can also help fight migraines and tension headaches. While it's not a cure, for many, it offers real benefits.

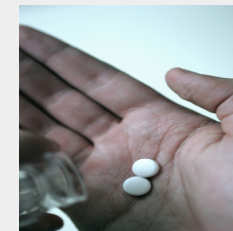


28 million Americans suffer from debilitating migraines. And [biofeedback](#) can help put them in the driver's seat by teaching them to control or modify their own body responses – responses that normally aren't controlled voluntarily. Notably, it can aid in

ABOUT OUR BLOG

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[Using Math to Predict Best Treatment for Acetaminophen Overdose](#)

Each year, 56,000 Americans end up in emergency rooms due to acetaminophen overdoses. However, there are effective treatments for acetaminophen overdoses, which cause toxic hepatitis. The problem is deciding—very quickly—which treatment is best in each case.



reducing muscle tension, a culprit in heightening migraine pain and, of course, in ubiquitous tension headaches. Biofeedback can also reduce stress, which is known to exacerbate migraine symptoms.

How does biofeedback work? Think of the way a thermometer can measure a physiological state externally. Well, biofeedback does the same thing – only more so. Various electronic or electromechanical instruments painlessly measure and process information about physiological functions like temperature, muscle tension, blood pressure, heart rate and brain waves. They then display the results in real-time in lines on a monitor or, perhaps, by emitting tones of varying pitch.

Essentially, biofeedback therapists train people to use their own thoughts to control what is happening in their bodies. First, they must become aware of subtle physiological signals, then learn to focus on them, and – generally while watching their progress on a screen – ultimately to manipulate them.

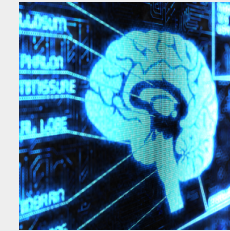
Reducing muscle tension helps because migraines generally have a muscle contraction component, says George von Bozzay Ph.D., founder and clinical director of the [Biofeedback Institute of San Francisco](#). He trains patients to locate and isolate target muscles, then to contract and release them. “It’s sort of like learning how to wiggle your ears,” he says. In other words, it takes practice. He recommends eight to twelve treatment sessions and perhaps ten minutes of focused relaxation exercises twice daily.

For many, the commitment to changing thought processes or breathing patterns with techniques like guided imagery or abdominal breathing pays off by reducing pain. A 2008 [review](#) of ninety-four separate studies of biofeedback and migraine and tension-



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OUR AUTHORS



Lisa Collier Cool

type headaches, published in the journal *Applied Psychophysiology and Biofeedback*, concluded it is effective in reducing migraine and headache frequency and pain levels.

“It’s a very helpful technique,” says Seymour Diamond, M.D., founder of the Diamond Headache Clinic and of the National Headache Foundation. His clinic uses [temperature training](#), [progressive relaxation](#) and [diaphragmatic breathing](#), all to provoke the body’s natural relaxation response.

Sensors or electrodes are generally applied to the head and fingers, then connected to the equipment. The therapist takes a baseline reading, then demonstrates how to evoke a quantifiably different physiological response by changing thinking or breathing. Slowing breathing and synchronizing it to the heart rhythm with progressive relaxation or visualization techniques, for example, can work well.

There are various types of biofeedback equipment. Electromyography (EMG) measures muscle tension. And von Bozzey believes tackling that with biofeedback can derail an approaching migraine, “because it doesn’t get triggered, it doesn’t have the muscle contraction precursor.”

Many experts like von Bozzey believe blood vessel constriction is involved in migraines. Frequently, migraines are preceded by a drop in hand temperature because “there’s less blood flow, there’s less heat flow,” he says. Temperature training with guided imagery or slow abdominal breath helps patients warm their own hands. “We’re trying to get them to redirect the blood flow to their arms or hands and away from the head,” Dr. Diamond adds.

Biofeedback’s end goal is to completely eliminate the need for instruments by having patients internalize the techniques. The external loop – electrode to machine to patient – is replaced, he says, “with an internal loop that the person is aware of inside their body.” But biofeedback is no substitute for medical care. Always discuss symptoms and treatment with a physician.



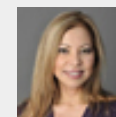
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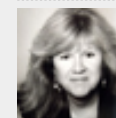
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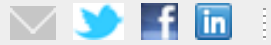
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Heart rate variability machines can work well for training respiration, says von Bozzay. He suggests a few training sessions with a healthcare provider or therapist before going it alone. Some devices are portable, others connect to a Mac or PC. See the [Resperate](#), the [StressEraser](#), and the [emWave](#).

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Find a certified practitioner through the [Biofeedback Certification International Alliance](#). More information is available through the [American Migraine Foundation](#), the [University of Maryland Medical Center](#), and the [Association for Applied Psychophysiology and Biofeedback](#).



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Teraisa Rogers

Perhaps we can pass down this information the way our grandmothers passed down migraines - and find some relief. Thanks for the information; I'm passing it to our pediatrician and our family doctor. Alas, there may be hope.

11 months ago 1 Like

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Jane Fort

This is a great article. I have forwarded to a friend who suffers with major migraines. Other than this, what are some of the other problems bio feedback can help? Thank you.

11 months ago 1 Like

Like Reply



Pat McNees

I too will be sending this helpful piece to several friends. Thank you!

11 months ago 1 Like

Like Reply



George Sheldon

Very good information here. My daughter suffers from migraines. I am sending her the link to this. THANKS!

11 months ago 1 Like

Like Reply



Steven Long

I'm delighted to see serious attention being paid to this important therapy.

11 months ago 1 Like

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