Self-Control for Migraine Headaches: Learning from Yoda

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by Al Collins, Ph.D.

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that he has no headache,
that he is relaxed but deeply aware.

When Adam got off the bus after school, he knew what to expect. By the time he walked through the kitchen door, his head had begun to throb and his stomach was churning. Objects were surrounded with a sickish aura of light and he saw jagged patterns whenever he shifted his eyes. Despite his nausea, he took two Tylenol and made it to his bedroom. Lights off, head under the covers, Adam waited for his mom to come home from work. He knew he wouldn't do any homework today. But he was too sick to care or to worry about his plummeting grades. He didn't even think about the appointment next week with the psychologist to start biofeedback.

Migraine headaches are extremely common among children, as well as adults. Nobody knows why, but young and middle-aged women are especially susceptible. The usual medical "remedy" is high-powered pain killers and vasoconstricting drugs that treat the final pathway of the disorder: pressure from blood vessels in the head that have suddenly relaxed, thus expanding and pushing against sensitive tissue. Persons with migraines tend to be chronically tense, but ironically it is when they finally relax that the migraine strikes. This is why migraines often happen on Friday afternoon, when the person is able to relax after a week at work or school.

Little known to the general run of physicians, even to neurologists, there are other ways to treat migraine. Among the most successful are self-control strategies using biofeedback.

Biofeedback simply means giving the individual information about his or her physiological states and allowing him or her to learn to control them. In one way, we can see biofeedback as a way to gain conscious control over one's physiology: mind over matter. But, in a deeper sense, biofeedback is also a way to tune into one's body's wisdom, turn off the mind, and allow the brain to self-regulate. This mind-body unity is achieved when the conscious mind is in a state of focused relaxation -- quiet but highly alert. It is like the state of "flow" that successful athletes sometimes feel when they "just know" the putt will go into the hole or the fly will land six inches in front of the trout's nose.

A New York psychologist, Jeff Carmen, has specialized in treating migraines with biofeedback for many years. He began with a group of procedures that have proven successful in many research studies. These are ways of learning consciously to relax, to turn off the "fight-or-flight" side of the autonomic nervous system (ANS), the so-called "sympathetic" branch. This allows the other side, the relaxed "parasympathetic" arm of the ANS to be dominant. Sympathetic overarousal has a number of effects, all deleterious: cold hands, fast heart rate, fast shallow breathing, muscle tension, and sweat gland overactivity. Classical biofeedback for migraine involves learning to warm the hands, reduce sweating, slow down breathing, and lower muscle tension. There are separate instruments that measure each of these, and information is presented to the client on a computer screen. By watching the display, these physiological processes become normalized. In addition to biofeedback in the office, home practice is essential. Two twenty-minute periods of daily practice, and numerous short periods of a few seconds at a time are required.

About four years ago, Dr. Carmen invented a new biofeedback procedure, which he has found to be faster and to offer even greater migraine control, with less need for home practice. This involves learning to control the temperature, and hence the blood flow and metabolism, of the prefrontal areas of the brain, the location of the so-called "executive" functions of self-control, memory, and attention. A sensor is placed on the forehead that looks deeply into the brain by measuring far infrared temperature. These rays pass directly through the skull and can be seen by the optical sensor. It is similar to the new heat-imaging techniques police use to look through the walls of houses in search of marijuana grow lights. Dr. Carmen uses movies on a VCR as the feedback signal: when the head temperature rises, the movie comes on; when temperature drops, the movie pauses. Most people are able to learn to control their temperature within a very few sessions. The results over the years have been striking: about 80-90% of clients report significant improvement in migraine frequency or intensity, and over half have no migraines at all following the treatment.

Dr. Carmen has presented his results over the past three years at the Society for Neuronal Regulation. Other physicians and health practitioners are now using his system with good results. Our clinic has used his devices for the past three years, and our experience agrees with Dr. Carmen's. In a particularly successful case, a ten-year -old boy ("Adam" of the first paragraph) who used to have weekly severe migraines has had almost none in the past two years, and the two or three he has had have been of markedly lower intensity.

The best news is that in most cases the brain temperature biofeedback is quite fast, often giving relief from headaches in as little as 2-5 sessions. Because the technique is new, however, it has to be regarded still as experimental. The older processes of finger temperature biofeedback, breathing, etc. are much better established. We use both approaches in our clinic. But in all forms of biofeedback a similar mental attitude is important.

Jeff Carmen has a picture of Yoda, from Star Wars, on his wall to illustrate the correct attitude. Yoda stands with his arm extended, a peaceful but

focused look upon his face as he invites the "force" to lift Luke Skywalker's space ship out of the swamp. It is obvious from the look on Yoda's face that he has no headache, that he is relaxed but deeply aware. Without forcing things, or getting anxious about it, the frontal areas of his brain are in charge and are fully cooperating with his whole body and mind, as well as the forces of the universe outside. That is the state that biofeedback, like meditation, yoga, and the martial arts teaches. When it is applied to control a migraine- or ADD, anxiety, and even epilepsy-wonderful results can follow.

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