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## NEW HOPE FOR SUFFERERS OF CHRONIC PAIN

By Siegfried Othmer

Pain is one of several sensory systems that keep us apprised of the status of our bodies. As we hurry through our daily lives, we usually view pain at the very least as an inconvenience, if not a major disruption. It's fortunate that we have our pain sensors—they provide a valuable warning to us that we need to stop and take care of our selves. Pain has considerable survival value, but when an injury has healed and the pain continues unabated, or when pain seems to have no obvious connection to any injury, it no longer serves a useful purpose. Pain of this type is referred to as chronic pain, and once you have fallen under its sway, it may be very difficult to escape.

### The Challenge of Pain Management

The management of chronic pain has always been a medical challenge. Treatment often involves increasing doses of a variety of medications in an effort to gain a measure of relief. In some instances, the pain is significantly reduced with the use of medication, but when the drugs are removed the pain returns, and so they become a more or less permanent fixture of life, often resulting in drug dependence or even addiction. In other cases even heavy use of medication provides the sufferer little or no relief; the brain

### What is EEG biofeedback

EEG biofeedback uses sophisticated computer technology to allow the therapist to monitor your brain waves, which in many cases may exhibit patterns of hyper-vigilance and over sensitivity. These signals are then relayed to a second computer on which the patient is provided a symbolic display of moment-to-moment brain activity. Visual and auditory cues are given to the patient to coach him/her to alter the brain waves toward more normal patterns of activity. Brain waves are a representation of the way you pay attention, both to the outside world and to your internal feelings. In the case of chronic pain, your brain is paying too much attention and has become over-sensitized. By learning to control your brain waves with the aid of EEG biofeedback, you can affect the underlying structure of your attention and return your brain's pain sensitivity to normal levels. A case in point is "Ted" (not his real name), who was nearly electrocuted. Three years later he was still "...suicidal with agony." He had been to a number of psychiatrists, and some of the medications they provided helped for a while, but the pain always returned. In great desperation, he came in to have his pain sensitivity retrained with EEG biofeedback. After only a few sessions, his pain was reduced to where it no longer bothered him, and he returned to a normal life.

simply adjusts to the presence of the medications and demands more, while the pain continues. Meanwhile, even the most thorough medical examination can find no real reason that the pain should persist. This all becomes clearer when we reflect on the fact that pain is not "out there" in the body where it is felt. Pain is actually sensed in the brain. It is a result of the way the brain interprets messages coming from the body; a determination that you should receive an "I hurt" warning so you won't just ignore an injury that needs care. The brain is ultimately in charge of how severely the pain is perceived and where it is localized in the body. Pain is not an absolute measure like a temperature. It varies according to what is going on in the brain. And depending on the way the brain interprets incoming signals, pain may not be accurately scaled to the actual injury, and may persist long after the injury is healed. The brain also registers pain emotionally, and feelings of fear, trauma, or helplessness may increase pain sensitivity. The increased sensitivity intensifies the experience of pain, which in turn increases the trauma and causes the cycle to spiral out of control. When the sensitivity escalates to the highest levels, injury messages are no longer necessary to sustain the experience of pain—even normal nerve impulse will do! The only way to deal with this self-reinforcing cycle is to redefine the way the brain interprets nerve impulses and allow its sensitivity to return to normal levels. Recent clinical outcomes indicate that the technique of EEG (brain wave) biofeedback can be used to break the cycle and lead to a major decrease or total elimination of chronic pain.

Another example is "Jack", who came in with a diagnosis of fibromyalgia, a kind of whole body pain, along with chronic fatigue syndrome. Within three weeks, he was free of what he described as "bone crushing pain" for the first time in six years. He went on and did a number of additional sessions of EEG biofeedback to consolidate his gains, but the major difference was made early on.

One of the most gratifying examples of the power of EEG biofeedback to relieve pain was the case of "Doris", who underwent hip-replacement surgery in April of 1996. After several months, the pain was still at "six" on a scale of 1-10 despite heavy medication, and she continued to require crutches to walk. She began a program of EEG biofeedback and within a month the pain had been reduced by half. By November she was no longer using crutches and began to be able to make dance movements, while having greatly reduced episodes of significant pain. As of the writing of this article, she is essentially pain-free, and only uses medication occasionally at night. Now she is even able to do a bit of running.

One medical doctor, a chronic pain patient himself, was so pleased with the benefits he gained from the EEG biofeedback process for his own post-operative pain that he now offers it in his practice. Another MD, a rheumatologist, was so impressed with preliminary clinical outcomes on his fibromyalgia patients, that he has undertaken a formal controlled study of the use of EEG biofeedback for chronic pain in association with a local university. Data from this study will not be available for some time, but results obtained at a number of clinics throughout the country make it clear that EEG biofeedback represents a significant addition to

the arsenal of available therapies for chronic pain.

EEG biofeedback is a non-invasive process which uses state of the art digital technology to monitor and train the brain in ways which were previously not thought possible. Yet the key to its remarkable effectiveness in dealing with chronic pain is not the hardware or software, but rather the brain's ability to learn to reorganize and maintain its own functional state. EEG biofeedback is simply the most advanced way of retraining the brain, and it now offers new hope to sufferers of chronic pain.

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*Since 1988, Siegfried Othmer has been engaged in research and management of the clinical application of EEG biofeedback through EEG Spectrum, Inc., as its president. He provides training for professionals in EEG biofeedback, and presents research findings in professional forums.*

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