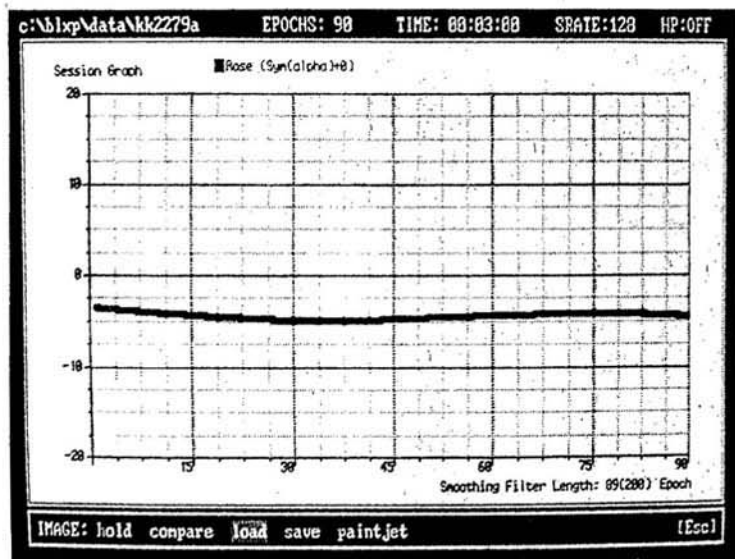


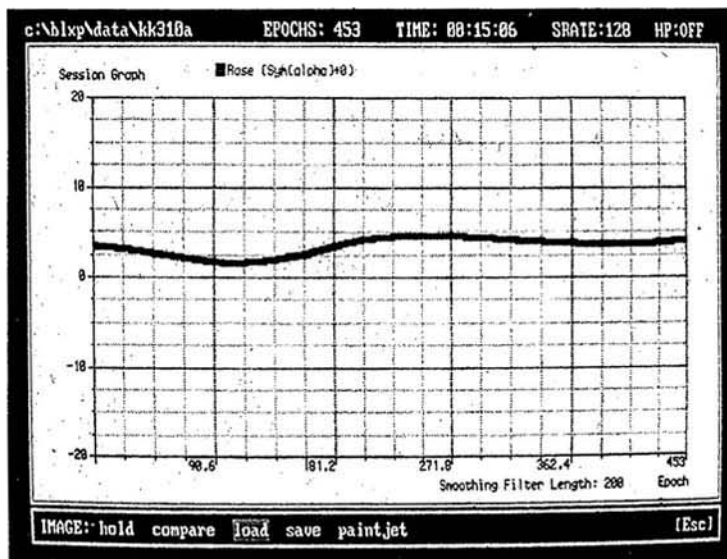
Depression in graphic form

In this biofeedback method, patients are hooked to a computer through electrodes for a reading on their moods.



Depressed

With a reading below the zero, in negative territory, the graph created by using brain-wave biofeedback techniques. A pilot study by Rosenfeld and the Baehrs on non-depressed people suggested that 58 percent or more of the time, the right frontal cortex is less active than the left, opposite of the situation in depressed people.



Non-depressed

With a graph showing a reading above the zero, the person is in the proper, non-depressed state of mind. The Baehrs train their patients to increase the activity in the left frontal cortex and thus moving away from depression.

Taking control

Depression sufferers try changing their brain waves

By Joanne Dandres
Special to the Tribune

It may seem like something out of science fiction, but some people have found relief from clinical depression by modifying their own brain waves.

Clinical depression can affect anyone. Some of the most common symptoms are prolonged depressed moods, diminished interest or pleasure in all or most activities, significant weight loss or gain, change in sleeping patterns, fatigue or decreased levels of energy, feelings of worthlessness or guilt, poor concentration or indecisiveness and recurrent thoughts of death or suicide.

At the forefront of this emergent approach to depression are licensed clinical psychologists Rufus and Elsa Baehr of the NeuroQuest Neurofeedback Center in Evanston. They are using a new non-medical treatment for clinical depression called brain-wave biofeedback, or neurofeedback, that helps normalize brain-wave activity.

It started in the early 1990s, when psychologist Richard Davidson and colleagues at the University of Wisconsin discovered a brain-wave signature for clinical depression. Davidson's research showed that the left frontal cortex is more hypoactive (slower) than the right one in cases of negative mood states. (It's interesting to note that other studies have shown the same type of shift in brain-wave asymmetry in normal infants when their mothers leave the room.)

Several years later, psychologist J. Peter Rosenfeld

and colleagues at Northwestern University determined that this brain-wave pattern could be modified using brain-wave biofeedback techniques. A pilot study by Rosenfeld and the Baehrs on non-depressed people suggested that 58 percent or more of the time, the right frontal cortex is less active than the left, opposite of the situation in depressed people.

Rosenfeld designed a patented biofeedback protocol that the Baehrs were the first to test. Some of the patients they had been treating by a more traditional approach agreed to try the unusual treatment. The goal: to train the patients to modify their own brain waves to resemble those of non-depressed people.

22 of 26 succeeded

The Baehrs started using the method in 1994 and have treated 26 people to date, 22 of whom have had positive results. A recent follow-up study of their first patients treated this way shows encouraging results. One patient has been out of treatment with no regressions for seven years, one for two years and the third for one year.

"I was sitting in a restaurant and suddenly I realized I was smiling," said one of the Baehrs' patients. "My friend commented that it was the first time she'd seen me smile in a long time. In general, I feel better after each treatment and have fewer negative thoughts. I am able to function with more energy and relate to people in a more positive way."

Dr. Mark Levey, a psychiatrist and associate clinical psychiatry professor at the University of Illinois at Chicago, said one of the patients he referred to the Baehrs showed quick results.

"One woman who has only had three or four sessions with Dr. Elsa Baehr said she likes this treatment," he said. "She finds it calming and already feels better. I hope to be able to decrease her medication."

Elsa Baehr explained that though some people can

find relief within the first five sessions, it takes 20 to 60 sessions for the brain waves to stabilize in their new configuration.

Several factors may interfere, such as extreme hormone dysfunction, head injuries or attention-deficit disorders, Baehr added. These need to be dealt with before beginning the brain-wave biofeedback treatment. One of Baehrs' patients whose hormones have begun to stabilize now is responding to the biofeedback treatment.

"This is an experimental procedure," Baehr said. "Until further control studies are completed, it isn't known to what extent this treatment is effective." She explained that the treatment doesn't stand alone but is an adjunct to other forms of therapy.

Many of her patients who started out on medication have been able to either reduce the amount or eliminate it.

"Changing one's brain-wave asymmetry doesn't protect people from being depressed," Baehr said, "but after successful treatment, it helps them to recover more quickly, to bounce back the way non-depressed people do. One's perception of life changes, and depressed people can then see other options and other ways of doing things. Life is seen in a more positive way, and patients are more amenable to traditional forms of treatment such as psychotherapy."

This treatment of depression consists of training one's brain to change brain-wave asymmetry. After being diagnosed as clinically depressed, the patient is given an electroencephalogram, or EEG, to provide baseline information on brain waves.

How it's done

The patient then is hooked to a computer through electrodes on the head and is told to close his eyes and relax.

The patient sits in a comfortable chair in a darkened room; restful music is optional. The therapist teaches relaxation techniques and gives suggestions for thought control. When the patient relaxes and the brain-wave asymmetry is greater in the right frontal cortex, a bell rings. After a while the brain becomes conditioned to hearing the bell. At first, patients find they have to experiment with their own thoughts in order to find positive ones. Some think of colors, others of music or nature. But after a few sessions, most people don't have to work at it; they simply relax and the bell rings. Using this conditioning method, the brain-wave asymmetry is normalized.

The use of neurofeedback for depression is still in the early stages.

"I first heard about neurofeedback at a conference two years ago," Levey said. "A woman was telling about her experience with it. A psychologist friend of hers was just learning how to use it, and the woman volunteered to be a guinea pig. After a weekend of treatment, she said, 'I feel like I'm thinking with a new brain.'"

"What I like about it is that there are no side effects, unlike medication, which can have bad effects. Neurofeedback is an exciting physical, biological intervention that has great promise. ... When effective, the patient senses a different kind of personal potential. And after all, if it doesn't work you can always stop with no risk."



Elsa Baehr takes readings from John Joyce, a salesman who was recruited to contribute comparative readings from a non-depressed research subject.

Tribune photos by Charles Osgood