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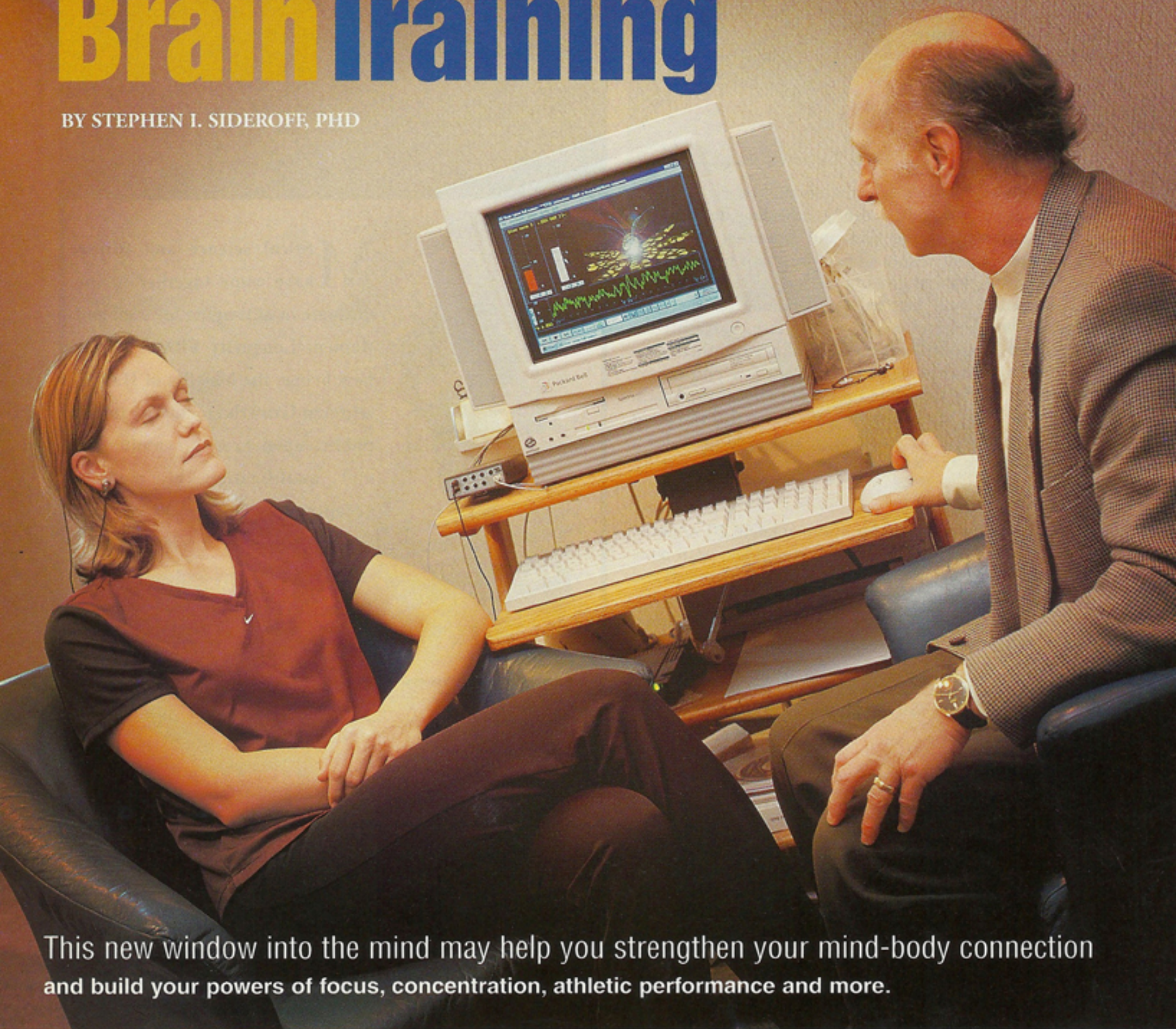
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Brain Training

BY STEPHEN I. SIDEROFF, PHD



This new window into the mind may help you strengthen your mind-body connection and build your powers of focus, concentration, athletic performance and more.

You are reading an article and your thoughts drift—suddenly you have lost the focus of what you are reading...

You are listening to a person giving a speech and you lose the thread of the speaker's argument.....

You put your keys down and then don't remember where you left them...

Sound familiar? We find all kinds of excuses to explain our lapses of thought: "I'm getting old," "I'm too stressed and distracted," or simply, "My mind isn't working well today."

When your body gets flabby, it's easily noticeable. Your body sends you the message that it needs conditioning. Although over 90% of your behavior is controlled by your brain, your tiny yet frequent mental lapses never seem to signal, "I've got to get my brain back into condition," or "My brain needs exercise."

When it comes to thinking, remembering, problem solving and decision making, we don't immediately consider sharp-

ening our brains. But, if the mind is so important, why not spend more time training it?

In fact, there are not many ways available to exercise your mind. Furthermore, there have not been any good ways of determining that you are successful, even when you try. But in the last 5 to 10 years, a new procedure has been quietly gaining clinical respectability for the enhancement of brain function. It is called EEG (electroencephalogram) biofeedback or "neurofeedback." This procedure is the first that lets you to train the brain directly, and verifies how successful you are.

Neurofeedback is a procedure for train-

ing brain waves. Brain waves are a representation of the electrical activity, or means of communication, of many nerve cells in the brain.

Neurofeedback "brain training" may help you in a variety of ways: you could improve your athletic performance in a specific sport, for example, or improve your ability to stay focused for your job or creative projects. It can also be valuable in treating specific physical and emotional problems.

Neurofeedback allows us, for the first time, to know when the brain is in specific mental "states" that make it more efficient and sharper. It can also help individuals go into states that facilitate other types of functioning, such as giving access to the subconscious.

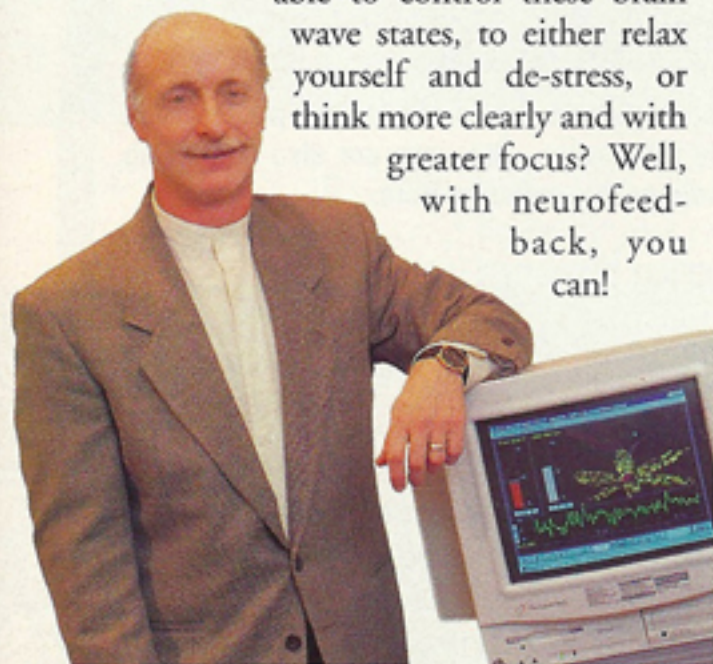
Initially found to be effective in reducing seizures in epileptics by Dr. Barry Sterman and colleagues at UCLA, this procedure was then found effective with attention deficit disorder (ADD) by Dr. Joel Lubar and others.

Getting Hooked Up

What's it like to have a neurofeedback session? At a trained professional's office, an electrode is attached to a specific area of the scalp, with two other electrodes that serve as reference and ground, attached to each ear. The electrode picks up the minute brain electrical signals through the skull and the skin.

The brain wave or EEG signal is then fed into a computer that is able to separate out its different components, such as theta, or slow wave activity (which is a less focused, more relaxed brain state), or beta activity (a faster wave activity which is common during periods of focused attention). This information is then displayed on the computer monitor, moment by moment.

Now, wouldn't it be great if you were able to control these brain wave states, to either relax yourself and de-stress, or think more clearly and with greater focus? Well, with neurofeedback, you can!



Wouldn't it be great if you were able to have more control over these brain wave states, to either relax yourself and de-stress, or think more clearly and with greater focus?

Using software specifically designed for this purpose, you might hear a pleasant sound when your brain waves go above a certain level. Or, your success might be represented by a Pac Man-like image going faster on the screen and gobbling up more little figures. The more successful you are at achieving the desired brain state, the more success you will have at the computer game on the screen.

Neurofeedback does two valuable things: 1) It lets you know when you are in the right brain state, thus yielding an important awareness, and 2) It lets you know if you are doing better at getting into the correct brain state. You can even see it on the computer monitor as it is happening.

People who have participated in neurofeedback sometimes notice an enhanced sense of clarity. They may also experience increased energy. If they are experiencing pain, they may notice a reduction or elimination of that pain. For the full benefits of the treatment, 10 to 40 sessions are generally recommended. In some cases, additional sessions are necessary.

When To Use Neurofeedback

One of the important pieces of information we have about EEG is that children—and adults—with ADD, have an excessive amount of the low frequency theta brain waves. These brain waves are between 4 and 7 cycles per second.

When a child or an adult is trained to suppress the lower, theta frequencies, and at the same time learns to increase the higher, beta frequencies of 15 to 18 cycles per second, it coincides with a shift to a greater ability to focus and stay alert. This change is frequently accompanied by an increase in IQ score. In my office I have worked with both children and adults to improve focus and concentration.

Just as neurofeedback can help a person with ADD be more focused and attentive, it can help people without this deficit—including athletes—to be more focused.

If you want to play a better game or be more alert and focused for any purpose, you can use neurofeedback to learn how to pro-

CONTINUED ON PAGE 64

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CONTINUED FROM PAGE 63

can use neurofeedback to learn how to produce the correct brain waves for concentration and focus. By training athletes to be able to go into the higher frequency brain wave activity more readily, I have helped them improve their accuracy in shooting basketballs, hitting a golf ball and even hitting the perfect spike in volleyball.

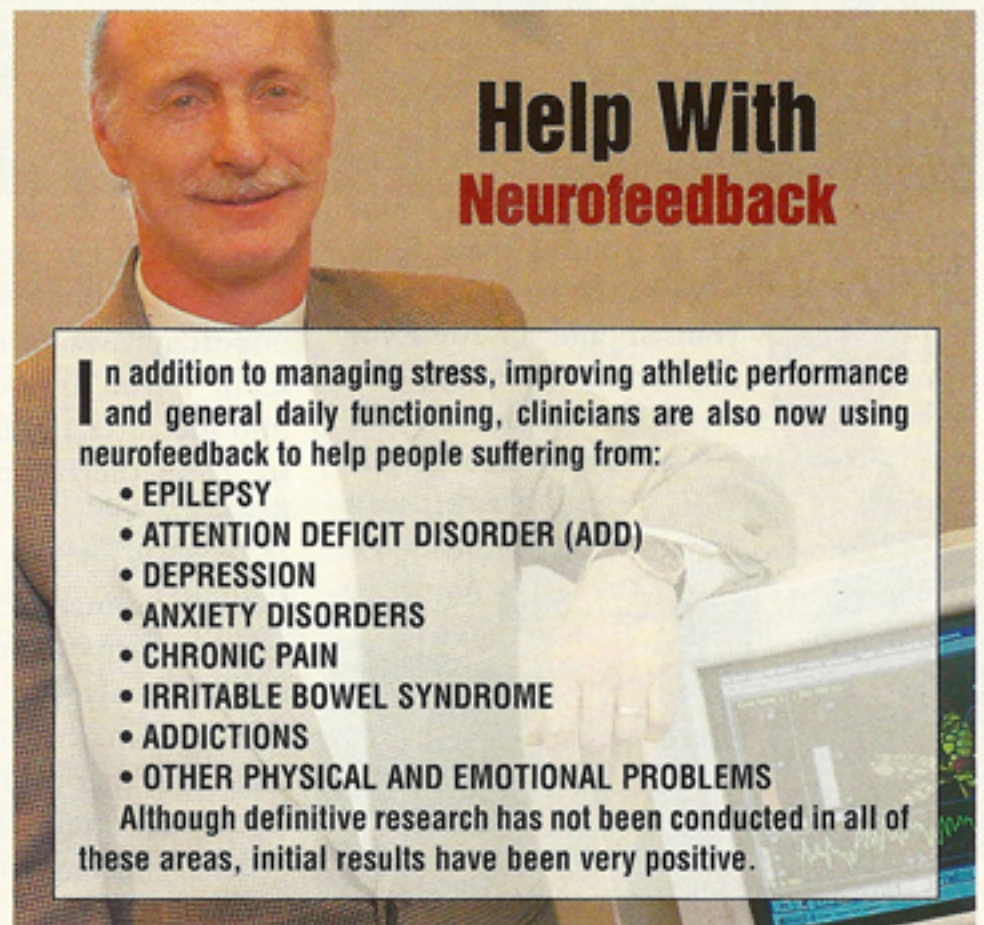
Which Brain Waves Are Best?

One way of determining the most effective brain wave pattern for specific situations is to study top performers and see how they do it. Dr. Barry Sterman, a colleague at UCLA, studied Air Force pilots to determine what their brains did when they needed to be most alert, efficient and accurate while flying an F-15 jet. These pilots' brains would go into alpha rhythm, between 8 and 12 cycles per second, and a very focused calmness in preparation for a task.

When I reinforce this same type of brain wave activity in tennis players, it prepares them to receive a serve by helping them be highly focused and ready to respond.

Although much still needs to be learned about neurofeedback, it is a process that holds tremendous promise for improving the functioning of the mind. And since the mind controls the body, this approach also helps the body to function more effectively, including facilitating the healing process. If you think neurofeedback might help improve your health or physical performance, consider discussing the option with a psychologist.

Stephen I. Sideroff, PhD, is a licensed clinical psychologist in private practice in Santa Monica. He is also Assistant Professor in the Department of Psychiatry and Biobehavioral Sciences of UCLA's School of Medicine. For more information or to experience neurofeedback, call (310) 828-1113.



Help With Neurofeedback

In addition to managing stress, improving athletic performance and general daily functioning, clinicians are also now using neurofeedback to help people suffering from:

- EPILEPSY
- ATTENTION DEFICIT DISORDER (ADD)
- DEPRESSION
- ANXIETY DISORDERS
- CHRONIC PAIN
- IRRITABLE BOWEL SYNDROME
- ADDICTIONS
- OTHER PHYSICAL AND EMOTIONAL PROBLEMS

Although definitive research has not been conducted in all of these areas, initial results have been very positive.