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Neurofeedback: One Rider's View

By Jody B. Jaffe

IF YOU FALL FROM A HORSE and hit your head, even a certified helmet can't completely prevent some effect on your brain from the impact. Neurologists say even a small knock on the head can cause some brain damage. Such brain injuries are called "the silent epidemic" because so many go unreported or undiagnosed.

Rehabilitation—learning to cope with the problems associated with brain injury—has been the traditional treatment approach. But there's also something called neurofeedback therapy, which involves manipulating your brain waves, through neurofeedback training or EEG stimulation. Advocates say these therapies can restore brain function and help everything from epilepsy to a bad game of tennis, with stops along the way at headaches, insomnia, autism, chronic fatigue syndrome, depression, anxiety, chronic pain, Obsessive Compulsive Disorder, Attention Deficit Disorder and even lackluster job performance.

It all comes down to restoring balance among the several kinds of waves the brain generates. The slow ones—Alpha, Delta and Theta—are associated with daydreaming, sleep or distraction. You need the fast ones—"worker bee" waves like Beta and SMR (sensory motor rhythm)—to get things done, but too many fast ones can lead to agitation. Here's how the two types of neurofeedback therapy are thought to work.

Neurofeedback training has been clinically available for more than 25 years, but mainstream attention has only been recent, a result of the growing interest in mind-body medicine. In the late '60s, a sleep researcher discovered the SMR brain wave, associated with muscle tension reduction in cats. A later study showed that when people with epilepsy were taught to control this brain wave, seizure activity declined by 60 percent. Study researchers soon found that controlling brain waves also could help humans in many areas.

The feedback process is painless and fun. Brain-wave-reading electrodes are stuck to your head. Then a computer translates your waves into images—a video game—on a computer screen. As you manipulate the images by thinking about them, the therapist ratchets up the difficulty of the game, forcing your brain to work harder. "Flexing brainwaves is like weightlifting," says Dr. Deborah Stokes, a Virginia neurotherapist who has treated patients with injuries from riding accidents, "and seems to have an overall strengthening effect on mental and emotional processes such as mood, anxiety and cognitive processing." Treatment takes anywhere from 20 to 100 sessions, each costing between $50 and $125. An initial brain map costs about $150.

EEG stimulation, another form of neurofeedback therapy, works faster. Dr. Mary Lee Esty, a Maryland neurotherapist, conducted an NIH-funded study showing dramatic improvements among brain-injured patients using EEG stimulation and started using the therapy in her practice 11 years ago. She has treated several patients injured in riding accidents—including myself. Several significant knocks to the head while riding left me with common, but often ignored, brain injury symptoms: fogginess, forgetfulness, inertia, intolerance to cold and head/neck ache.

The setup for EEG stimulation is the same—electrodes, computer, therapist—but there's no game. You close your eyes and feel nothing while the computer stimulates your brain with a pico watt of power—one trillionth of a watt—sent through the electrodes to your brain. "The stimulation is so small that most doctors, until they see the effects, believe that it cannot possibly have a therapeutic effect," says Dr. Esty. After an initial $450 brain map and four sessions of EEG stimulation at $90 each, most of my brain injury symptoms were gone. **PH**