

Neurofeedback - A New Approach for Treating TBI

Mary Lee Esty, LCSW-C, Ph.D., President
Neurotherapy Center of Washington
5480 Wisconsin Avenue, Suite 221
Chevy Chase, MD 20815
301-652-7175

There is a relatively new therapeutic “kid on the block” that can be helpful to people following TBI. Biofeedback therapies have been used for a wide variety of health problems. Computer technology makes it possible to reduce symptoms in a multitude of functioning problems including headache, ADD, fatigue, depression, pain, and sleep. The most recent therapy is called neurotherapy. Computers record brainwaves to assess appropriateness of neurofeedback (EEG) treatment.

Johnathan Walker, MD, a neurologist in Dallas, TX, writes, “In addition to treating illness, neurofeedback can help in improving mental and athletic performance in healthy persons. I love this approach to helping my patients. Often, the patient no longer has the problem or can control it without help from doctors, drugs, or any other treatment. Side effects are extremely rare, . . . In my opinion, neurofeedback . . . will largely supplant drugs and surgery in treating our patients in the future. If you are involved or plan to become involved in this type of treatment, you are riding the wave of the 21st century.”¹ Dr. Walker’s observations are consistent with the clinical results from neurotherapies, and muscle biofeedback (EMG) for TBI. Treatment plans are tailored to each person’s particular needs.

Case example: Shawn, early teens, was physician-referred 1½ years post MVA causing right frontal and left basal skull fractures, and left-sided stroke. After 3 weeks in the ICU plastic surgeries reconstructed the cheek, eye area, and nose. Treatment was requested for problems with memory, concentration, follow-through, explosiveness, anxiety, and headaches with arm, back and leg pain. After one treatment he could stand without pain for the first time. After 6 EEG

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sessions and 5 muscle biofeedback (EMG) sessions his back pain was so low he could walk 4 hours around a mall. His father said the difference was “phenomenal.” He was no longer explosive, had age-appropriate behavior, and his focus and concentration abilities were greatly improved. Seven months of treatment concluded after 17 EEG and 11 EMG treatments. Shawn began working part time and had no arm pain despite increased use of his arms on the job.

How can neurotherapy and biofeedback treatments make such changes possible? The answer may lie in the internal crisis following TBI that causes a neurochemical imbalance. One result of this reaction is a flood of ions constricting arteries, keeping nutrients from injured cells that can then no longer fire appropriately. Initially this may be a neuroprotective inhibitory reaction preventing further damage. But this can result in slower processing causing cognitive difficulties and fatigue. Dr. Ayub Ommaya, neurosurgeon, observed patients’ treatment responses, and thinks treatment increases blood flow and improves neurochemical functioning. Over 1,100 people have been treated at NCW since 1994, of which 540 have a history of TBI and the vast majority report improvement. Frank Duffy, M.D., pediatric neurologist at Harvard Medical School, writes that neurofeedback “should play a major therapeutic role in many difficult areas. In my opinion, if any medication had demonstrated such a wide spectrum of efficacy it would be universally accepted and widely used. It is a field to be taken seriously by all.”² Neurofeedback adds a new resource to the many interventions that are needed to recover from the effects of TBI.

¹ - Jrl. Of Neurotherapy, Vol. 8 (2) 2004 p. 98

² - Duffy FH., Editorial: The state of EEG biofeedback therapy (EEG operant conditioning) in 2000: An editor’s opinion. *Clinical Encephalography*. 31(1): v-viii, 2000.



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