The Power of Neurofeedback

By Peggy Hill, LCSW

Roberta had been neglected, abused, terrorized and overworked, first by her drug addicted mother, and later in successive foster care situations. At age 9 she was adopted by a loving, savvy family who offered her a fine home and a private school education. However Roberta raged, whined, cried, couldn't sleep, was failing at school, and seemed incredibly unhappy all the time. Was the problem the adoptive home? No! Roberta just couldn't quiet herself down. She had Post Traumatic Stress Disorder. She also qualified for a diagnosis of mild Reactive Attachment Disorder.

The family took Roberta to a highly qualified therapist who specialized in situations like hers. With intensive therapy and major changes in parenting, things got better; however Roberta was plagued with massive mood changes. A psychiatrist prescribed calming medication and an anti depressant. Neither Roberta nor her family was happy with daily medication, although it helped. The therapist suggested Neurofeedback and when Roberta was 10, the family came hopefully.

A Neurofeedback assessment showed that Roberta had serious sleep problems: it was hard for her to fall asleep. Once she was asleep she was plagued by nightmares, and had a hard time returning to sleep once she had woken. She dragged through her days and became alert only in the early evenings. Also, very minor things irritated her to distraction including loud, sudden noises and clothing labels. At times she shrank away from affectionate hugs, but could be inappropriately friendly with strangers. At other times the only thing that helped her calm down was her mother's lap. Also Roberta, who had excelled at school when in foster care, was getting B's and C's. Roberta hated living this way, and her distress seemed to make everything else worse.

The family started neurofeedback (NFB) twice a week and came to sessions consistently, even when it was hard to get out of the house, even when homework wasn't completed, even when more desirable activities or family commitments conflicted, even when Roberta's behavior had been very distressing. For the first 5 weeks there seemed to be no progress. After 10 sessions Roberta reluctantly admitted that although her mom continued to give her the medication, she wasn't taking it. Since her behavior and distress had gotten a little worse the first week, and then returned to baseline, mom and this therapist realized that progress had been made.

Starting with the 11 session, progress truly began. Roberta started to fall asleep more easily, and although she enjoyed having her mother with her at bedtime, it no longer seemed a necessity. She argued about chores and homework, but responded, finally, to "grandma's law", that is, setting the priority of work before play. Her mood continued to swing rather wildly, however she had some tools to help stay centered, and she often chose to use them without being reminded.

By the 21st session, Roberta and her mom had family discussions as part of the session. School performance was a major issue; mom wanted her to strive for excellence, Roberta wanted to get by and have fun. They managed to find middle ground, and Roberta's school performance improved. Manipulative tantrums were an issue; however behavioral interventions were finally helping in this area.

By the 31st session we began to discuss completing treatment. Issues were minimal. Roberta slept well, without nightmares, almost all the time. The occasional emotional outburst was age appropriate, and easily handled. Roberta was happy in school and also happy at home, and mom was only minimally stressed. Training was completed by the 40th session when Roberta could finally talk to her parents about what was troubling her.

Roberta and her mom have continued to "check in", and Roberta came in for a "refresher" 3 sessions when things got tough. Now age 15, Roberta has continued to do well both socially and at school. Both Roberta and her mom credit Neurofeedback as being the one intervention that helped all of the other work they did be successful.

What is this thing called Neurofeedback?

(Hammond, 2006) says "Neurofeedback training is brainwave biofeedback (p. 26)." It's a carefully designed exercise program for the brain. A course of Neurofeedback affects the brain the way a course of carefully planned physical therapy affects the muscles. "Flabby" brain functions tighten up, helping the brain move from state to state easily, upon need, rather than staying in stuck and uncomfortable places. Sleep improves, temper improves, and concentration and focus improve.

And how can one train the brain? Tiny sensors placed on the scalp read brainwaves. That information feeds into a computer. The clinician evaluates the brain function, determines training protocols, and then sets training parameters. (Hammond, 2006) says, "The trainee then watches a display on the computer screen and listens to audio tones, sometimes while doing a task such as reading. The training sessions are designed to teach the person to slowly change and retrain their brainwave pattern. With continuing feedback, coaching and practice, the healthier brainwave patterns are maintained (p.28). (Hammond, 2006) goes on to say, "Ordinarily, a person cannot reliably influence their brainwave patterns because they lack awareness of them. However, when you see your brainwaves on a computer screen a few thousandths of a second after they occur, it gives you the abili-

ty to influence and change them. The mechanism of action is operant conditioning. We are literally reconditioning and retraining the brain (p.26)."

What does neurofeedback help?
At the present time neurofeedback is noted for its success with reducing symptoms of ADHD without medication, in calming emotional storms, and in helping handle all kinds of anxiety including problems with test taking and performance. (Hammond, 2005) Stabilizing the brain to minimize migraines and mood swings is also very successful.

Neurofeedback essentially helps the brain move to optimal regulation. Emotional outbursts in children, although sometimes manipulative in origin, almost immediately throw the brain out of optimal regulation, so that a tantrum, possibly initially caused by a reaction to parental direction, to a situation that caused fear, or to a feeling of disconnectedness, may get out of control. It can be hours or days before a child with attachment issues or major emotional storms can find emotional balance again. (Schore & Schore, 2008) Since neurofeedback trains a person to move from brain state to brain state easily, the training almost always helps a person return more quickly to optimal brain regulation, thus helping resolve emotional storms more quickly. As a person's brain becomes stronger, the person may choose to avoid these storms altogether.

Are there side effects?
(Hammond, 2006) says, "Mild side effects can sometimes occur during neurofeedback training. For example, occasionally someone may feel tired, spacey, anxious, experience a headache, have difficulty falling asleep, or feel agitated or irritable. Many of these feelings pass within a short time after a training session. If you make your therapist aware of such feelings, they can alter training protocols and usually quickly eliminate such mild adverse effects. (p. 32)." (Hammond, 2006) goes on to say," It is possible, however, for more significant negative effects to occur (Hammond, Stockdale, Hoffman, Ayers, & Nash, 2001) if training is not being supervised by a knowledgeable, certified (*www.bcia.org)* professional who will individualize the training. A "one-size-fits-all" approach that is not tailored to the individual will undoubtedly pose a greater risk of either producing an adverse reaction or of simply being ineffective (p.32)."

Who is qualified to offer Neurofeedback?
Almost anyone may take training in biofeedback and neurofeedback techniques; a person qualified to offer neurofeedback professionally, however, is a licensed medical or counseling professional. Medical and alternative physicians, nurses, including registered nurses (RN) and advanced practice registered nurses (APRN), licensed mental health therapists including, doctoral level psychologists and neuropsychologists, clinical social workers, licensed mental health counselors, marriage and family therapists and also physical therapists, occupational therapists and speech therapists are all qualified to practice neurofeedback. Full qualification, however, requires advanced study. A clinician is fully qualified to offer neurofeedback only after taking a beginning and advanced course of study in the field, practicing under supervision for 1 year, and passing a qualifying exam offered by the Biofeedback Certification International Alliance (www.bcia.org). Fully qualified clinicians who have met all these criteria are considered Board Certified in Neurofeedback (BCN) and may be located via the BCIA web page *(www.bcia.org).* A list of qualified practitioners in the State of Hawaii is appended.

Summary
Neurofeedback, originally researched in the 1960s, has been successfully used to help people regulate their brain states, and thus stabilize emotions and behavior, for the last 50 years. The training does not target specific diagnoses but rather exerts an overall calming and stabilizing influence on distressed brains. Symptoms, including anxiety conditions, focus and concentration concerns, sleep problems, mood disorders, and symptoms resulting from psychological and physical trauma respond quickly and easily to neurofeedback training. Although neurofeedback may not replace medical and psychological treatment, a course of neurofeedback usually augments the effectiveness of those treatments, causing symptoms to resolve more quickly. Neurofeedback is an entirely safe, non-invasive procedure when offered by a fully trained and qualified practitioner. The State of Hawaii Department of Public Health Child and Adolescent Mental Health Division consider it an "effective best practice". (Child and Adolescent Mental Health Division, Department of Health, Hawaii, 2008) It is readily available on most Islands in the State of Hawaii *(see list of providers).* Many neurofeedback providers are qualified to offer mental health services in conjunction with neurofeedback, and thus medical insurance will usually cover the cost of the service.

Author Peggy Hill, LCSW, is with the Windward Biofeedback Associates . See box for contact info.

See page 3 for references.

LIST OF PROVIDERS

Cecilia Ala'Ilima, MD, Gen'l Medicine (Oahu) Honolulu (808) 258-5609 calailimamd@aol.com
Amanda Armstrong Ph.D, LCSW (Oahu) Honolulu 808-951-5540
Peggy Hill, LCSW (Oahu) Windward 808-781-3007 windwardbiofeedback@gmail.com www.windwardbiofeedback.net
Rick Szuster, MD, Psychiatrist (Oahu) Kahala 808-737-3800
Mark Ansel, Ph.D, LCSW, CSAC (Big Island) Kamuela & Kapaau (808) 884-5300 docmga@yahoo.com
Thomas Bearden, Ph. D (Big Island) Hilo 808-935-2605 drtbearden@hawaiiantel.net
Dave Davis, Ph.D. (Big Island) Hilo 808-756-1863
Terry Ann Fujioka, Psy.D. (Big Island & Maui) 808-324-0434 tokie@verizon.net
Levie Yamasaki-Gray, LMHP (Molokai) 808-336-1151 leviegray@yahoo.com

References

Child and Adolescent Mental Health Division, Department of Health, Hawaii. (2008). *Effective best practices, state of Hawaii*. Retrieved from http://www.hawaii.gov/health/mental-health/camhd/library/pdf/ebs/ebs022.pdf

EEG Institute (2007). *Protocol guide: case study PTSD.* Woodland Hills, CA: EEG Institute.

Spencer, D. (2010). *Training mind as well as body helped Alexandre Bilodeau capture moguls gold.* Retrieved from http://neurofeedback-singapore.com/news-update.html

Stallard, P. (2002). *Think good - feel good.* New York, NY: John Wiley & Sons Ltd.

neurofeedback-singapore.com/news-update.html

van der Kolk, B. A. (1987). *Psychological trauma.* Boston, MA: American Psychiatric Press, Inc.

Evans, J. R. (2007). *Handbook of Neurofeedback; dynamics and clinical applications.* New York, NY: Informa Healthcare.

Evans, J. R., & Abarbanel, A. (1999). *Quantitative EEG & Neurofeedback.* San Diego, CA: Academic Press.

Gruzelier, J., & Egner, T. (2005). Critical validation studies of Neurofeedback. *Child & Adolescent Psychiatrics Clinics of North America: Emerging Interventions, 14*(1), 83-104.

Hammond, D. C. (2005). Neurofeedback with anxiety and affective disorders. *Child & Adolescent Psychiatric Clinics of North America: Emerging Interventions, 14*(1), 105-124.

Hammond, D. C. (2006). What is Neurofeedback. *Journal of Neurotherapy, 10*(4), 25-36. Retrieved from http://jn.haworthpress.com

Hammond, D. C., Hoffman, D., Nash, J., & Ayers, M. E. (2001). Adverse reactions and potential iatrogenic effects in neurofeedback training. *Jounral of Neurotherapy, 4*(4), 57-69.

Schore, A. N. (2003). *Affect regulation and the repair of the self.* New York, NY: WW Norton & Co., Inc.

Schore, J. R., & Schore, A. N. (2008). Modern attachment theory: The central role of affect regulation in development and treatment. *Clinical Soc Work Journal, 36*(7), 9-20.