Behavioral Resources and Institute for Neuropsychological Services

the BRAINS *Express*

In this Issue: Volume 1, Number 3

Upcoming Education/Seminars:
Please RSVP for Presentations:

- Is this Bipolar? Learning about mood disorders and treatment for Children/ Adolescents
  - Michael Wolff, PsyD
  - Wednesday, June 25th 6:00-7:30p
  - Cost: $35.00 (per person or couple)

- Neurofeedback: Is this for me? Demonstration will be provided
  - Jennifer Bazner, MA
  - Wednesday, July 16th 6:00-7:30p
  - No Cost

- Where are we at with understanding and treating autistic spectrum disorders: The brain, assessment, and intervention.
  - Michael Wolff, PsyD, Rochelle Manor, PhD, Tom Denczek, MSW, & staff from BRAINS
  - Monday July 28th 6-8:00p
  - Cost: $50.00 (per person or couple)

Summer Program:

We are excited about the 2nd Annual BRAINS Summer Institute. The Summer program is designed to help children maintain, learn, and build different skills during the summer months. This includes programming to help with movement and learning, communication, social skills, and other areas. For more information—contact BRAINS, LLP or see: www.brainspotential.com

Some Details:

Dates: June 23rd - July 31st, 2008

Children ages: 4 - 17 years old

Cost:
Four (3-hour) session— $420.00
Five (3-hour) session—$525.00
Six (3-hour) session—$630.00

[*equivalent to $35.00 an hour for fully licensed professionals or special educators*]

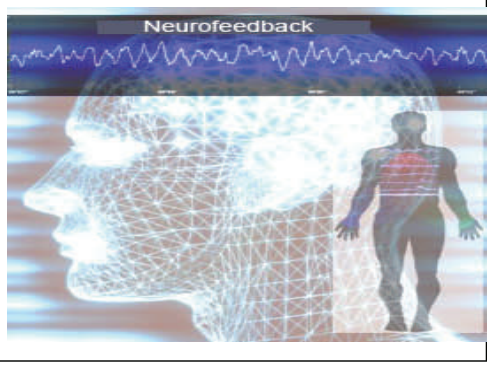
Volunteers Still Needed:
High School and College Volunteers still needed for Summer Program—call if interested in gaining volunteer hours!

What is Neurofeedback Anyway?

What is Neurofeedback?

Neurofeedback is a technique in which we train the brain to improve functioning. When the brain is not well regulated, evidence of this can be visible in the brainwave patterns, which are measured via an EEG (Electroencephalogram). By challenging the brain to change brainwave patterns, much as you challenge your body in physical exercise, we can help your brain learn to function better.

Neurofeedback has been implicated for several areas of concern and for performance enhancement. Neurofeedback has been used to treat the symptoms of many diagnoses including, but not limited to ADHD (1, 8, 9), learning disabilities (2, 16), cognitive enhancement (2, 3), even migraines/headaches (7, 10, 13, 17) and seizures (14, 15, 18, 19). Preliminary studies, as well as clinical reports also suggest Neurofeedback is useful in managing many symptoms associated with Autism Spectrum Disorders, including socialization,



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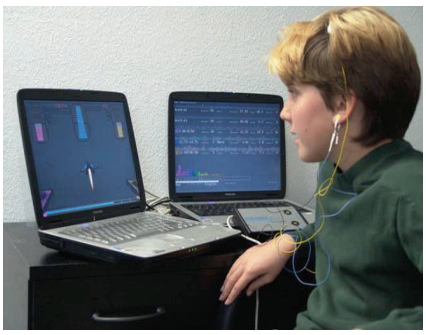
vocalization, anxiety, schoolwork, tantrums, focus, attention, and sleep (6, 11, 12). Preliminary studies and clinical reports also suggest Neurofeedback is useful in enhancing peak performance (3, 4, 5). These improvements translate to benefits in every aspect of life. When we sleep better and have improved emotion regulation, we enjoy improved relationships and an increase in self-esteem. When we are better able to focus and pay attention, we experience increased productivity in all areas of our lives including home, academics and work.

While Neurofeedback is considered to be a 'cutting-edge' treatment modality, the concept itself has been around for nearly 40 years. Neurofeedback began as a serendipitous discovery in 1968 by Barry Sterman, Ph.D., who was conducting sleep research at NASA. Dr. Sterman, while observing and documenting brainwave patterns associated with being relaxed and calm, began to wonder if he could train his subjects (cats) to create a relaxed and calm brainwave pattern if he rewarded them for doing so. Dr. Sterman measured the brainwaves, then rewarded the subjects with a few drops of chicken broth when they created the desired brainwave pattern. Dr. Sterman discovered that the cats could, indeed, voluntarily alter their brainwave patterns. He later discovered the cats that had been trained to create the relaxed brainwave pattern were significantly less likely to experience seizures when exposed to a seizure-inducing substance. This lead Dr. Sterman to wonder if his discovery, Neurofeedback, could be useful for people with epilepsy. He and his colleagues continued their research with Neurofeedback, including monkeys in their studies, and eventually human subjects. The studies by Dr. Sterman and others indicated humans with epilepsy could and do significantly decrease the number



and severity of their seizures with Neurofeedback. Since Dr. Sterman's discovery, numerous other researchers have published research studies indicating the positive impact of Neurofeedback on many different diagnoses. So why, then, is Neurofeedback considered new and cutting-edge? Until about 10 to 15 years ago, the computer technology needed to operate a Neurofeedback system was not cost-effective enough to make Neurofeedback in a clinic or office setting realistic. As technology has advanced, we now have desktop and laptop computers that have the power and memory necessary to accommodate an in-office Neurofeedback system. Since that time, programs designed to educate and prepare health professionals to provide Neurofeedback have been established and become more accessible.

How does Neurofeedback work?

Think of your brain as a kind of computer. Whether asleep or awake, your brain is constantly sending out electrical activity; delivering millions of signals per second back and forth to different sites, exchanging information and orchestrating all of your thoughts, behaviors, and movements. Those electrical signals, referred to as brainwaves, exist on a spectrum from very slow brainwaves (i.e. those brainwaves responsible for sleep) to very fast brainwaves (i.e. those brainwaves responsible for the 'fight or flight response'). When your brain produces the right brainwaves in the right places at the right time, you enjoy productive sleep, a sense of calm and well being, and can be motivated and productive with your time and energy. But when your brainwaves are out of balance, or when pathways in your brain aren't carrying an electrical signal properly, your functioning can be greatly compromised. With Neurofeedback, your brain can learn to orchestrate its own changes in those compromised areas.

In a Neurofeedback session, you sit in a comfortable chair in front of a computer monitor. Your Neurofeedback therapist places sensors on your scalp (affixed with a small amount of water soluble paste) which send your brainwave signals to the Neurofeedback therapist's computer. Your Neurofeedback therapist can then view your brainwave patterns (or EEG) to determine the underlying problem. He or she sets the parameters for your session based on what your brainwaves are currently doing, compared to what they *should* be doing. When your brainwaves get closer to the optimal pattern, you are 'rewarded' with activity on the computer monitor that you are watching. This is usually in the form of a video game. When your brainwaves move toward the optimal pattern, the game speeds up and you acquire more points. If your brainwaves start to fall back to their old, compromised pattern, the video game slows down and you cease to acquire points. Your brain very quickly learns how to make the game move faster and acquire points. The result is improved functioning in the area of the brain being

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exercised.

It's all in the brainwaves…

So what happens, then, when a compromise in brainwave patterns exists? A disruption in brainwaves will affect you. How it affects you depends on the kind of disruption, as well as where in the brain that disruption is occurring. There are three main ways in

which brainwave patterns can be out of balance. Neuroimaging studies have indicated a correlation between brainwave patterns and cortical activity. When a location in the brain has less than a normal amount of activity, this correlates with an excess of slow brainwave frequencies, which is referred to as 'underarousal'. Examples of diagnoses related to underarousal in the brain are depression and ADHD. Both of these coincide with an excess of slow wave frequencies in the certain areas in the frontal lobes. Conversely, overarousal in the same areas of the brain can lead to rage, poor decision-making, manic episodes, and a lack of empathy. Bipolar disorder is an example of a brainwave instability. The brainwaves in the frontal lobes of an individual with bipolar disorder 'swing' from a state of underarousal (depression) to a state of overarousal (mania). Underarousal in the parietal lobes (toward the back of the top of your head) is commonly found in individuals with sensory integration issues and Autism Spectrum Disorders. When these areas are trained to either increase or decrease brainwave frequencies and bring the brain into a more balanced state, the symptoms related to these diagnoses diminish. When these new and improved brainwave patterns are repeatedly reinforced (with twice weekly sessions), the brain retains these changes and integrates them as the 'new normal' way of functioning. Over time, the brain retains these changes and Neurofeedback sessions are stopped. There are some ways in which your brain's improved functioning can be recompromised, such as a serious illness, head injury, or natural maturation of the brain. However, just like riding a bicycle, once your brain learns these changes, it generally doesn't forget them. A general guideline regarding the number of sessions needed to achieve lasting change in brainwave activity is about 20 to 40 sessions.

There are numerous diagnoses that respond favorably to Neurofeedback. Mood disorders (i.e. depression, anxiety, bipolar disorder, rages), learning disabilities (i.e. dyslexia, ADD/ADHD, verbal and non-verbal disorders, and processing disorders), acquired brain injuries (i.e. traumatic brain injury and stroke), sleep disorders (i.e. insomnia and sleep apnea), and seizures are a few broad-reaching categories that Neurofeedback can improve. While underlying causes of the symptom may affect some outcomes, Neurofeedback has been found to be highly effective in reducing or eliminating numerous symptoms associated with brain functioning.

Not all neurofeedback is created equal

Neurofeedback, when provided effectively and accurately, is a worthwhile investment in increasing quality of life. However, this is only true if you are receiving Neurofeedback from a competent provider, with an effective Neurofeedback system, in a reputable clinic. This is why it is very important to be a savvy consumer when searching for a Neurofeedback provider. Following are some important factors to remember in your search:

1. Know your Neurofeedback provider's background. What is their education? To truly have an understanding of Neurofeedback and brain functioning, make sure your provider has *at least* a Master's degree in a health or mental health field and is *fully credentialed and licensed* in that field. Make sure they have a thorough educational background in brain functioning and its effects on behavior. Changes achieved with Neurofeedback are most often quite profound. Our Neurofeedback therapists are fully licensed counseling psychologists, ready to assist you in making sense of and assimilating these changes into the new life that awaits you, as well as continually assess you or your child. In the event that further assessment might be necessary, due to missed information, unexpected response to Neurofeedback training, or a misdiagnosis altogether, our qualified and degreed mental health professionals have the education and experience necessary to guide you and your child in the right direction.

2. Just as all Neurofeedback providers are not created equal, neither are all Neurofeedback systems created equal. Some systems are very effective, some mildly effective, and some are a waste of time. There

are home neurofeedback systems, but be warned that there is no reputable research that speaks to the effectiveness of these systems. While they may provide some benefit, it is questionable whether these benefits are worth the high price tag attached. Other systems utilize technicians to run the neurofeedback session. These systems are designed to provide more general changes in brain functioning, moving all brains towards the same 'established normal'. However, all brains are different, and most require more specific attention. The manufacturers of these systems do not have any educational requirements of the purchaser.

At BRAINS, our Neurofeedback therapists have been trained through EEG Spectrum International, the world leader in Neurofeedback training and equipment. Our equipment allows greater flexibility and individuality in regards to training sessions, and EEG Spectrum requires all Neurofeedback therapists have a Master's degree in a health or mental health field with full licensure before educating or providing equipment to them. BRAINS does has also not used technicians to complete the training.

3. Make sure you have an accurate diagnosis. Lack of thorough testing and assessment from an appropriately credentialed health or mental health professional can lead to critical information being missed, and even a complete misdiagnosis. Having a misdiagnosis can lead to a great deal of wasted time and money in regards to any therapy or treatment you might pursue, medications that are not effective, and unpleasant side-effects. BRAINS, LLP offers neuropsychological assessments and testing using the most researched and reputable measurements in the mental health field to ensure you have a thorough and accurate diagnosis. Once the diagnosis has been accurately formed and you have found a properly educated provider with the most effective equipment, you are far more likely to get every ounce from your Neurofeedback investment.

4. Look for clinical measurement of Neurofeedback effects. Most Neurofeedback providers rely solely on their patient's self-report to track improvements. Since we are all complex individuals with very complex lives, it is difficult, if not impossible, to track results with self-report alone. While some diagnoses do not lend themselves to clinical testing and must rely on self-report (such as depression or anxiety), other diagnoses have established clinical tests with which outcomes can be measured. The appropriate clinical tests should be utilized for symptoms such as attention, concentration, hyperactivity, impulsivity, executive functioning, visual and auditory processing disorders, and learning disabilities. Ask your Neurofeedback provider how they measure results. If they are not utilizing clinically proven methods of tracking changes in functioning, you might want to keep searching. At BRAINS, we will track progress gained with Neurofeedback through periodic testing with the most reputable tests and measurements in the field of Psychology.

A few more things

Neurofeedback is an amazing solution for many symptoms and diagnoses. We are pleased to be able to offer this cutting-edge treatment as a means of optimizing every individual's brain potential and increasing quality of life. Imagine how your quality of life will improve when you are achieving a deep, restful night's sleep, when you can focus and concentrate keenly, and when you experience relief from depression and anxiety. Imagine how your child will prosper when his issues with attention and impulse control have been alleviated, or when her reading disability no longer stands between her and the academic achievement you know she is capable of.

While Neurofeedback has been found to be a highly successful treatment option, there are times when a more severe and persistent condition may warrant more comprehensive care. At BRAINS, LLP, we are designed to offer a wide range of treatment modalities that work in concert with each other to optimize functioning for each individual. In addition to Neurofeedback, we offer occupational, physical and speech therapy, sensory integration, social skills training, behavior modification, and individual and family therapy, as well as comprehensive neuropsychological assessment and diagnosis. These services were intentionally brought together to one location to best serve your needs and the need of your child.

Now that you understand the basics of Neurofeedback and are a savvy and prepared consumer, you might have questions more specific to your diagnosis or the diagnosis of your child, or questions regarding the process of Neurofeedback. Feel free to contact our Neurofeedback providers, and we will gladly answer your questions and offer more information. 616-365-8920

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C.I.T.Y. Program

The Community Integration Program for Teens and Youth is growing quickly. This provides a chance to bring treatment out of the clinical office and into the community. There many summer opportunities being planned, including a likely fishing seminar, summer outings, and fun interaction. Many of the children and adolescents are progressing beyond 1:1 mentoring and are actively involved in small group community activities.

Group Announcement

The adolescent and young adult female social skills and awareness group will be starting shortly. Please contact us if you are interested in enrolling your child. The cost will be $35.00 a session. It is anticipated that the group will be every other week from 6-7:00 pm. The day of the week will be decided shortly, depending on family feedback.

The group is intended to build confidence in social interactions, to gain comfort in relationships, and practice communication, pragmatic skill development, and interpersonal skills.

Summer Respite:

Do you want some time for yourself? Is finding a babysitting for your child with autistic spectrum disorder difficult?

Well fear no more! I am a University of Michigan Nursing student wanting to help you this summer take some time for yourself. I am willing to work with your kids over any time period to help you get what you need to get done. I've been working with children in Ann Arbor at Mott's Children's hospital and really want to carry over my practice to Grand Rapids.

I will be available during the summer with flexible hours working at $12 an hour. Please feel free to e-mail or call me with any questions or if you would like to meet and learn more. I am willing to work any day for any amount of time to fit your needs.

Katie McKeiver
Kmacs@umich.edu
(616) 304-4949

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Seeking Help to Collect Data:

BRAINS is working with Western Psychological Services to provide information on the **Developmental Behavior Checklist.** This is a measure being developed to provide more information about emotions and behaviors for children between the ages of 4-18 with Intellectual scores below 70. One questionnaire needs to be completed by the parent/guardian and the other by the Teacher/school. These are 90-question surveys that will not take long.

Please let us know if you can help us collect data for this new measure. 616-365-8920

ASK The Expert:

Dr. Lien will be accepting questions between BRAINS Express Columns. Families, school personnel or others can ask questions pertaining to assessment, diagnosis, treatment, or other questions of interest.

Please send questions to:
mlien@brainspotential.com
In the subject line, please put: Ask the Expert

Dr. Lien will respond to several of these questions in the next BRAINS Express.

The Next BRAINS Express

The next BRAINS Express Column will be released in August, 2008. The focus of the educational article will be on:

Understanding Sensory Integration

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