

EEG Biofeedback and Autism

EEG biofeedback therapy for youngsters with autism is a new frontier. ACN is collecting related anecdotal reports; studies have not yet been done. The treatment is being utilized primarily for higher functioning autistics, as the subject must be able to engage his or her attention in a specialized computer program during each session. Autistic children are often adverse to having monitor wires placed on their heads during sessions, though reports suggest this reluctance can sometimes be overcome with creativity and patience. We share two case report summaries to convey the effort required for this approach, as well as the positive results that can occur. While all autistic children undergoing EEG biofeedback training may not have similar results, it appears to be an area worthy of exploration.

Editor: This 8-year-old subject attends a special school where he works with an individual classroom aide most of the day and receives physical and

Positive effects noted by parent:

- Medications have been reduced by half
- Previous "memorized"

occupational therapy. Prior to EEG biofeedback training, in spite of drug interventions of Buspar and Prozac, he remained unable to focus on tasks, adverse to many textures, foods, and sensations, as well as highly hyperactive and impulsive. Speech was usually a repetition of things he had heard; it was rapid, loud, and difficult to understand. His mother described him as: "irritable and grumpy; doesn't like to be touched, and often takes off without notice, requiring a lot of chasing."

Adapted from therapist's log:
First Month: Initially, as soon as electrodes were put on H., he pulled them off He's very sensitive to touch. An old set of

speech has been replaced by some original thought; expresses ideas and asks questions.

- Speech used to be too rapid to understand. It is now slower and more distinct. Loud outbursts are now infrequent and softer.
- Asks for hugs and will initiate touch; less sensitive to light, sound, and textures.
- Interacts with siblings and can do some group work at school for the first time.
- Responds more appropriately to parental directions.
- Improved balance and gross motor control

electrodes were sent home so he could get used to them. After that we gave him small things to hold to keep his hands occupied. Mom said he liked to hold his guinea pig (!) so we let him bring that in for several sessions. We were then able to keep the electrodes on for the entire session. Sometimes we played classical music in the background. Sessions were held three times a week.

Mom had not informed the school that she was trying biofeedback. He began focusing better, and was more responsive to verbal cues. After eight sessions, the teacher reported that H. had his best day ever. Four sessions after that, his teacher commented

- Energy level has decreased from severe hyperactivity to a more normal level.
- More awareness of feelings, emotions, and humor
- Tolerates changes in his environment better than before.
- Mood more stable and positive

(No negative effects reported.)

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The therapist commented: "In March of this year, H. celebrated his birthday by having a party at a video arcade. This is a place he could not have tolerated previously. Mom reported that he loved it,

that it was like having a different child at school-and he seemed much more cheerful.

Between sessions 12 and 28: H. began to work on school assignments at home with Mom for the first time. Speech was easier to understand. He took his first math and spelling tests and did relatively well. He continues to progress in these subjects. H. has improved in listening skills and is more compliant with parents.

After almost one year: Sessions were reduced to twice a week, then weekly. To date, a total of 98 sessions have been given

interacted with the other kids, waited his turn for games, and was not overwhelmed by the noise and activity. What a test!"

Report from an EEG therapist:

I have just completed 40

Throughout training he

sessions of EEG biofeedback training with an 8-year-old boy. The family traveled here and stayed in town for one month for intensive therapy. The subject is a relatively high-functioning autistic. His vocabulary is limited, but memory is good.

Positive effects observed by mother:

- Less ritualistic
- More imaginative in play
- Improved socialization within family
- Began reciting the news from TV programming (this was progress).
- Better language association
- Engaged in watching

demonstrated mood swings between and within sessions. Getting him to engage was a challenging task.

Negative effects observed by mother:

- More whining and crying
- Became more impatient (perhaps because more aware).

The parents are happy with the training results and have placed an order to acquire the instrument for their long-term use at home.

Kenneth Kang
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an activity from afar for the
first time.

Singapore

Note: Dr. Siegfried Othmer, director of EEG Spectrum, has taken a special interest in the use of EEG biofeedback for autistic children.

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Efficacy of Neurofeedback in the Autistic Spectrum

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The purpose of this study was to determine if Neurofeedback is efficacious for individuals in the Autism spectrum. Neurofeedback,

a process of neuroregulation has been proven to assist many with similar behaviors to those in the Autistic spectrum. This methodology has been studied and used successfully with those exhibiting ADHD behaviors, anxiety, sleep disorders, and addiction and preliminary work with individuals in the Autistic spectrum is showing promise. This process trains brain waves through operant conditioning using EEG readings, therapist computers controlling protocols, and game computers being used to provide feedback for the individual. This method allows the brain to begin to operate at optimal levels appropriate for the individual, assisting many of those in the autism spectrum to reduce confusing delta, theta, and alpha brain states and encouraging the use of beneficial beta and SMR frequencies.

Our study involved the training of 16 individuals using Neurofeedback, applying a number of assessment processes, and comparing those trained with 16 non-trained individuals.

Eighty eight percent of those trained reduced their levels of autism within months (measured by Rimland's ATEC check-list) -

on average 26% compared with control group on average of less than 5%. Before and after videos (Greenspan method) were also used for comparison purposes. All results show significant improvement on average in the areas of speech (30%), socialization (34%), other types of health (sleep, anxiety, tantrums – 29%), and cognitive awareness (16%).

When compared with other treatment modalities using the Rimland Treatment Effectiveness Survey, Neurofeedback, even in early comparison, is rated on a par with Occupational therapy, surpassed to date only by Behavior Modification and Speech therapies.

Funding: Self. (Note: Dr. Jarusiewicz is on the Board of Directors and is currently a shareholder of EEG Spectrum International, Inc., the developer of the Neurofeedback technology used.)

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