YOUR PRESENTATION WILL BEGIN SHORTLY

PLEASE USE THE Q & A AND CHAT TO COMMUNICATE WITH THE PRESENTERS AND WITH ONE ANOTHER!



WE ARE TOGETHER, THE VOICE THE VOICE FOR BEST PRACTICE THE VOICE FOR QUALITY THE VOICE FOR CHILDREN & FAMILIES

www.togetherthevoice.org



You Don't Have to be a Neuro-Guru



Mom on a Mission

Dianne Kosto, SCN, Founder & CEO SYMMETRY Neuro-Pathway Training SymmetryNeuropt.com Dianne@SymmetryNeuroPT.com 844- BRAIN ON (844-272-4666)



- Applewood Transitions for Young Women
- The Journey Transitions for Young Men
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Owner on a Mission

Angie Shockley, MA, CSP CEO & Founder Q&A Associates, Inc. ashockley@qa-associates.com 304-642-9070

Today's Outline

- 1. Who are we
- 2. Biopsychosocial model
- 3. Trauma/Tech-effects
- 4. What
- 5. Why
- 6. How



BIO

Gender Disability Physical health Neurochemistry Stress reactivity Genetic vulnerability

IQ Temperament

PSYCH

Behaviour Personality Attitudes/Beliefs Learning and memory Coping and social skills Self-esteem and emotions

WELL-BEING

Substance abuse

Family relationships Life events

SOCIAL

Education Social support Peer relationships Family background Socioeconomic status

My Story



Dianne Kosto, SCN, Founder & CEO

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Silver Linings



who looks happier?!?

Silver Linings

JackKosto.com

SevenSpiresBand.com



Impacts of Stress - Brain & Behavior



Key Factors that Impact our Mental and Physical Health

Self-actualization

desire to become the most that one can be

Esteem

respect, self-esteem, status, recognition, strength, freedom

Love and belonging

friendship, intimacy, family, sense of connection

Safety needs

personal security, employment, resources, health, property

Physiological needs air, water, food, shelter, sleep, clothing, reproduction



Impacts of Stress - Brain & Behavior

Trauma impacts the integrative areas of the brain:

- Thalamus
- The Hypothalamus
- The Amygdala
- Corpus callosum
- Hippocampus
- Cerebellar vermis
- Prefrontal cortex
- Anterior cingulate



Impacts of Stress - Brain & Behavior

PTSD, Trauma, stress can often look like ADHD & this:

- Sleep disorders
- Attentional problems
- Hypervigilance
- Learning disabilities
- Memory problems
- Immune to internal cues
- Emotional numbing
- Attachment difficulties

Brainwave activity is measurable



EEG powered by BCILAB | SIFT

Video of brain networks firing

Arousal Level & Disorder Stratification



Arousal Level & Disorder Stratification

Brain Too Fast: Beta (Overarousal)

Anxiety, OCD, Mania, Worry

Excess Idling: Alpha (Inhibited)

Depression, Lethargy, Fibromyalgia, Hypothyroid, Toxins, Hepatic Issues, Drug Burnout.

Brain Slow: Theta (Underarousal)

ADHD, Head Injury, Toxic Encephalopathy, Cortical Damage

Brain Very Slow: Delta

TBI, LD, Dementia, White Matter Damage.



Stages of Oxidative Stress Cycle



Neurofeedback's Effects on Trauma & Technology Impacted Brains

What & How

What is Neurofeedback?



Neurofeedback is a method of training brain waves to alter the structure and function of the brain.

Neuroplasticity and Learning



Changes associated with learning occur mostly at the level of the synapses between neurons.

New synapses can form and the internal structure of the existing synapses can change.

Neuroplasticity and Learning

Neuroplasticity occurs in the brain:

- At the beginning of life, when the immature brain organizes itself.
- In case of brain injury: to compensate for lost functions or maximize remaining functions.
- Through adulthood: whenever something new is learned.

Learning is Permanent

Once we learn something it becomes a permanent part of our behavior.

Follow up studies in neurofeedback show that the effects continue for up to 30 years.



What is Neurofeedback?



Neurofeedback is also known as EEG biofeedback.

It is a simple learning modality using technology and works by training the brain to produce healthier patterns.

It is painless, drugless and non-invasive and safe for all ages.





BEST OF

THE BRAIN

SCIENTIFI

AMERICAN





NEUROFEEDBACK IS BASED ON OVER 50 YEARS OF CLINICAL RESEARCH PROVING ITS EFFICACY





Case Reports in Neurology Neurofeedback and Neuromodulation Techniques and Applications









What is Neurofeedback used for?

Over 50 years of peer reviewed, university based research has demonstrated the efficacy of neurofeedback in addressing many common concerns

| Autism/Asperger's | Anxiety | ADHD |
|-------------------------|---------------|------------|
| Insomnia | Chronic Pain | Bedwetting |
| Migraine | Fibromyalgia | TBI |
| Tension Headache | PTSD | Depression |
| Learning Disorders | Panic Attacks | Tics |

Neurofeedback research is based upon the principle that many of these concerns are the related to brainwave dysregulation.

How Can One Modality Effect So Many Different Conditions?





Neurofeedback's Effects on Other Approaches

When you help the brain better regulate it most often makes other therapies and approaches <u>more effective!</u>

Why and How?



Barry Sterman - 1960s

- Barry Sterman, PhD. was a <u>sleep researcher</u> who <u>stumbled upon</u> the miracle of neurofeedback during one of his experiments involving cats back in 1965.
- His work eventually lead to the <u>discovery of a</u> <u>neurofeedback protocol that is still used today</u> to treat grand mal seizures in epileptics.

Sterman, M.B., Egner, T. (2006) foundation and Practice of Neurofeedback for the Treatment of Epilepsy, Applied Psychophysiology and Biofeedback, 31(1), 21-35





Barry Sterman - 1960s



Thanks to the kitties!



First Year for Specific Neurofeedback Application

1967 SMR conditioning in general **1973 Epilepsy 1975 Peak Performance** 1976 ADHD 1977 Addiction **1978 Anxiety disorders** 1978 Learning disabilities **1980 Sleep Disorders** 1995 Brain Injury 1995 Lyme's Disease 1996 CFS 1997 Mood disorders

Dr. Frank H. Duffy Professor and Pediatric Neurologist at Harvard Medical School reported,

"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."

ADDRESSING Mental Health CONCERNS IN A CUNICIAN'S TOOLKIT

EVIDENCE-BASED CHILD AND ADOLESCENT PSYCHOSOCIAL INTERVENTIONS

This report is intended to guide practitioners, educators, youth, and families in developing appropriate plans using psychosocial interventions. It was created for the period November 2012–April 2013 using the Practice/Wise Evidence-Based Services (PWEBS) Database, available at www.practice/wise.com. If this is not the most current version, please check the American Academy of Pediatrics mental health Web site (www.ap.org/mentalhealth) for updates.

| Problem Area | Level 1- SEST SUPPORT | Level 2- GOOD SUPPORT | Level 3- MODERATE SUPPORT | Level 4- MINIMAL SUPPORT | Level 5- NO SUPPORT | |
|--|---|--|---|---|---|--|
| Anxious or Avoidant Behaviors | Cognilive Behavior Therapy (CBT), eQT and Medication, CBT with Pacets, Education, Exposure, Modeling | Assertiveness Training, Attention, CBT for Child and Parent, Cultural Storytelling, Family Psychoeducation, Hypnosis, Relaxation, Stress Inoculation | Contingency Management, Group Therapy | Biofeedback, CBT with Parents Only, Play Therapy, Psychodynamic Therapy, Rational Emotive Therapy | Assessment/Monitoring, Attachment Therapy, Client Centered Therapy, Eye Movement Desensitization and Reprocessing (EMDR), Peer Pairing, Psychoeducation, Relationship Counseling, Teacher Psychoeducation | |
| Attention and Hyperactivity Behaviors | Behavior Therapy and Medication, Biofeedback, Parent Management Training, Self-Verbalization | Contiguency Management, Education, Parent Management Training (with Problem Solving, or with reacher Psychoeducation), Physical Exercise (with or without Relaxation), Social Skills and Medication, Working Memory Training | Biofeedback and Medication | Parent Management Training and Social Skills, Relaxation, Self-Verbalization and Contingency Management, Social Skills | Attention Training, Client Centered Therapy, CBT, CBT and Anger Control, CBT and Medication, Family Therapy, Parent Coping/Stress Management, Parent Management Training and Self-Verbalization, Problem Solving, Psychoeducation, Self-Control Training, Self-Verbalization and Medication, Skill Development | |
| Autism Spectrum Disorders | Intensive Behavior Therapy, Intensive Communication Training | Parent Management Training, Peer Pairing, Physical/ Social/Occupational Therapy | None | Cognitive Behavior Therapy, Massage, Social Skills | Auditory Integration Training, Biofeedback, Eclectic Therapy, Hyperbaric Treatment, Modeling, Structured Listening | |
| Delinquency and Disruptive Behavior | Anger Control, Assertiveness Training, CBT, Multisystemic Therapy, Parent Management Training, Parent Management Training and Problem Solving, Social Skills | Communication Skills, Contingency Management, Functional Family Therapy, Parent Management Training and CBT, Parent Management Training and Classroom Management, Problem Solving, Rational Emotive Therapy, Relaxation, Therapeutic Foster Care, Transactional Analysis | Client Centered Therapy, Family Therapy, Moral Peasoning Training, Outreach Counseling, Peer Pairing, Self-Control Training | CBT and Teacher Training; Parent Management Training, Classroom Contingency Management, and CBT; Parent Management Training and Self-Verbalization; Physical Exercise; Stress Inoculation | Behavioral Family Therapy, Catharsis, CBT and Anger Control, CBT with Parents, Collaborative Problem Solving, Education, Exposure, Family Empowement, Family Systems Therapy, Group Therapy (!!), Imagery Training, Parent Management Training and Peer Support, Play Therapy, Psychodynamic Therapy, Self-Verbalization, Skill Development, Wraparound | |
| Depressive or Withdrawn Behaviors | CBT, CBT and Medication, CBT with Parents, Family Therapy | Client Centered Therapy, Cognitive Behavioral Psychoeducation, Expressive Writing/Journaling/Diary, Interpersonal Therapy, Relaxation | None | Problem Solving, Self-Control Training, Self-Modeling | Life Skills, Play Therapy, Psychodynamic Therapy, Psychoeducation, Social Skills | |
| Eating Disorders | None | CBT, Family Therapy, Family Systems Therapy | None | None | Client Centered Therapy, Education, Goal Setting | |
| Elimination Disorders | Behavior Alert; Behavior Alert and Behavioral Training; Behavioral Training; Behavioral Training, Dietary Care, and Medical Care (with or without Biofeedback) | Behavioral Training and Dietary Care; Behavioral Training, Hypnosis, and Dietary Care; CBT | Behavior Alert and Medication | None | Assessment/Monitoring, Assessment/Monitoring and Medication, Behavioral Training and Medical Care, Biofeedback, Contingency Management, Dietary Care, Dietary Care and Medical Care, Hypnosis, Medical Care, Psychoeducation | |
| Mania | None | Cognitive Behavioral Psychoeducation | None | None | Family-Focused Therapy, Psychoeducation | |
| Substance Use | CBT, Community Reinforcement, Family Therapy | Assertive Continuing Care, CBT and Medication, CBT with Parents, Contingency Management, Family Systems Therapy, Functional Family Therapy, Goal Setting/Monitoring, Motivational Interviewing/ Engagement (with and without CBT), Multidimensional Family Therapy, Purdue Brief Family Therapy | Drug Court, Drug Court with Multisystemic Therapy and Contingency Management | Goal Setting | Behavioral Family Therapy, CBT and Functional Family Therapy, Client Centered Therapy, Drug Court and Multisystemic Therapy, Education, Family Court, Group Therapy (II), Motivational Interviewing/Engagement with CBT and Family Therapy, Multisystemic Therapy, Parent Psychoeducation, Problem Solving, Project CARE (II), Psychoeducation | |
| Suicidality | None | Attachment Therapy, Counselors Care, Counselors Care and Support Training, Multisystemic Therapy, Social Support Team | None | None | Accelerated Hospitalization, Counselors Care and and Anger Management | |
| Traumatic Stress | CBT, CBT with Parents | Exposure | None | EMDR, Play Therapy, Psychodrama | Client Centered Therapy, CBT and Medication, CBT with Parents Only, Interpersonal Therapy, Psychodynamic Therapy, Psychoeducation, Relaxation | |
| lote: Level 5 refers to treatments whose tests were unsupportive or inconclusive. The symbol (!!) indicates that at least one study found negative effects on the main valcome measure. The risk of using treatments so designated should be weighed against potential benefits. This report updates and replaces the "Blue Menu" originally stribuid by the Hawaii Department of Health, Child and Adolosscent Menual Health Schild and Adolosscent Menual Health Child and Childran Terms at a under of metal care. Virtuina Address of Menuscines and the Otober 2012. All Refers Resret. | | | | | | |

Academy of Pediatrics does not review or endorse any modifications made to this document and in no event shall the AAP be liable for any such changes.

DICATED TO THE HEALTH OF ALL CHILDREN"

American Academy of Pediatrics reported Biofeedback/Neurofeedback as a Level 1 - Best Support for Attention and Hyperactivity Behaviors.

| Attention and Hyperactivity Behaviors | Behavior Therapy and Medication, Biofeedback, Parent Management Training, Self-Verbalization | Continge Manage Teacher without H Working |
|--|---|---|
| Autiem Spectrum | Intensive Rebaulor Therany | Doront M |

Neurofeedback is based upon the principle that there is a normal pattern of brain wave activity and that the brain regulates itself based upon this pattern.





Research demonstrates that this normal pattern may become disrupted resulting in a dysregulated brain and causing various negative concerns.

Neurological Dysregulation

Brainwave Imbalance or Neurological Dysregulation may be caused by:

- Variations in brain structure
- Developmental interruptions
- Drugs, Prescriptions & Toxins
- Poor Nutrition
- Subluxation of the spine
- Trauma
- Stress both physical and emotional

So Why Isn't this Mainstream?

- Not supported by Big Pharma
- Did start in research labs with expensive equipment and limited expertise
- Once it did move into some clinics it was still "experimental" hit and miss, trial and error with no structured system or approach
- Hard to find training a paper, or book, here and there, a class, this amp, that software...,etc.
- Software was made by engineers not clinicians as was hardware – NOT user-friendly
- Expensive and very time consuming

That as Changed, You don't have to be a Neuro-Guru anymore



Today's Reality

- Online courses- academy.symmetryneuropt.com
- Virtual training
- Simplified and automated software made for the majority not minority
- Streamlined and more sophisticated hardware amps, sensors...,etc.
- Cloud based brain mapping database for instant analysis and reporting
- Support made easy with virtual open office meetings and easy access via technology
- Affordable and quick options available

How Does Neurofeedback / Neuro-Pathway Training Work?



qEEGs measure brainwave activity



EEG powered by BCILAB | SIFT

Video of brain networks firing



qEEG Client Brain Map Report





qEEG Clinical Brain Map Report





Brain Maps are Non-Diagnostic

- Brain Maps do not diagnose any conditions.
- Brain Maps are used to determine effective neurofeedback protocols & to guide the therapeutic process.
- The goal of neurofeedback is not to cure a diagnosed condition but rather to <u>teach the brain</u> <u>how to better regulate itself.</u>



How Does NFB/ Neuro-PT work?



When the brainwave activity meets the set goals, the trainee will receive positive feedback (visual & auditory) to guide their success with the session.

Neurofeedback is painless, uses no medication, noninvasive, and promotes positive changes through operant conditioning. State-of-the-art software automatically detects when brainwaves are properly ordered and it feeds that information back to the trainee during a training session.



When you have information on what your brain waves are doing, your brain can use that information to change how it works in real time.



The goal of neurofeedback is not to diagnose or treat any particular condition or disorder.

The goal is to transform an unhealthy, dysregulated brainwave pattern into a normal, healthy, organized pattern to promote positive changes in the brain and balance in the CNS.



How Long Does it Take to Get Results?

- Trainees typically receive 40-50 sessions of training. (Approximately 20 hours of neurofeedback.)
- Sessions are usually twice a week or more.
- Each session is about 45 minutes long.
- They typically begin to see changes in about 15 sessions.



Talking to your Clients and Parents of Clients

Take aways:

- Non-invasive learning modality using technology
- Backed by decades of research proving efficacy
- Goal of all nfb is to help the brain better regulate
- Long term changes
- You don't have to be a Neuro-Guru anymore



Thank you for your attention and interest in this fascinating field!



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Q & A and More Discussion

Editorial, Journal of Neurotherapy, Spring 2013:

Ending the Evidentiary & Insurance Reimbursement Bias Against Neurofeedback to Treat ADHD: It will take Clinician

Action in addition to the Compelling Science

By H. Edmund Pigott, Ph.D., Eugenia Bodenhamer-Davis, Ph.D.,

Richard E. Davis, M.S. & Henry Harbin, M.D.

Additional Resources & References

Sterman, M.B., Egner, T. Foundation and Practice of Neurofeedback for the Treatment of Epilepsy. Appl Psychophysiol Biofeedback 31, 21 (2006)

Monastra, VJ, Lynn, S, Linden, M, Lubar, JF, Gruzelier, J, LaVaque, TJ. Electroencephalographic biofeedback in the treatment of attentiondeficit/hyperactivity disorder. Appl Psychophysiol Biofeed. 2005;30(2):95–114.

Beauregard, M, Lévesque, J. Functional magnetic resonance imaging investigation of the effects of neurofeedback training on the neural bases of selective attention and response inhibition in children with attention-deficit/hyperactivity disorder. Appl Psychophysiol Biofeed. 2006;31(1):3–20.

Additional Resources & References

International Society for Neurofeedback and Research: https://www.isnr.org/isnr-comprehensive-bibliography

The Association for Applied Psychophysiology and Biofeedback (AAPB) https://www.aapb.org/i4a/pages/index.cfm?pageid=3318

https://symmetryneuropt.com/research/

Ghaziri J, Tucholka A, Larue V, Blanchette-Sylvestre M, Reyburn G, Gilbert G, Lévesque J, Beauregard M. Neurofeedback induces changes in white and gray matter. Clin EEG Neurosci. 2013 Oct;44(4):265-72.



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