

Neurofeedback — The Mental Health Treatment Alternative



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Vol. 2 Issue 2

www.jmacoaching.com

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Imagine a drug that had virtually no short-term side effects and no long-term side effects; that worked for a wide spectrum of diseases from epilepsy to ADD to sleep disorders; that effectively took away symptoms and suffering and after the course of treatment the symptoms remained absent. Imagine that this drug produced results in 75% to 80% of the individuals who tried it. Imagine that preliminary research has granted the highest efficacy for its use. Such a drug would be the most highly marketed and most touted drug in our lifetime. It would be a household name.

Now stop imagining. There is no such drug. There is, however, an application of neuroscience known as neurofeedback, or EEG biofeedback, that fits this description.

"If any medication had demonstrated such a wide spectrum of efficacy, it would be universally accepted and widely used ... neurofeedback is a field to be taken seriously by all." (Dr. Frank Duffy, Boston Children's Hospital)

Neuroscience is an emerging psychotherapy field that emphasizes neurofeedback treatments to change brain structure and function. Often referred to as "brain training," neurofeedback helps people control brain functions related to stress, anxiety, depression and other mental disorders. Now, therapists can help clients rewire the neural networks of the brain that have been linked to associated problem areas of their clients by using neurofeedback as a framework necessary to support safe healing. The results have been exhilarating as clients discover how to use their own brain processes to overcome their mental disorders.

Neurofeedback not only helps people suffering from mental disorders to regain their personal lives, it also helps healthy people who want to perform better in their personal and professional lives. Individuals are using it to improve their work productivity, learn new stress management techniques, heighten memory functions and accelerate their brain activity control.

Understanding the Brain

"Taking a ride on the neural network highway"

We have traditionally understood the brain to be a fixed organ that is developed by genetic programming and early childhood experiences. New technological advances in brain imaging have revealed that the brain is an organ that is constantly being built and rebuilt by our experiences throughout life. Even if dysfunction and deregulation have occurred because of bad childhoods or trauma, in many cases the brain can be repaired and the symptoms such as depression, anxiety and mood disorder can be managed. The brain's ability to rebuild itself is not limited to an individual's age; repair can happen even much later in life.

The recent revolution in neuroscience has to do with the discovery of the brain's "plasticity" or its ability to change structure and function in response to experiences. For over 100 years psychotherapy has operated with no hard science to support it. Due to that gap in knowledge, many forms of psychotherapy were developed before we had any real understanding of how the brain works. Despite these limitations, many forms of psychotherapy are now being validated as effective as a result of new brain imaging techniques. We are only now beginning to apply some of our new insights into the brain's rebuilding capabilities to psychotherapy treatments. (*The Neuroscience of Psychotherapy*: Louis Cozolino)



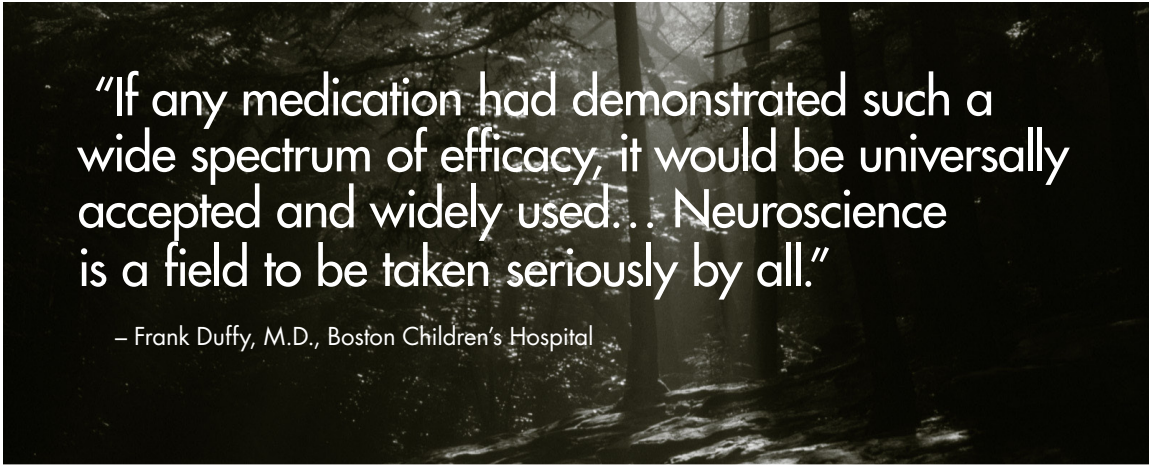
All About Us

Jody Michael Associates

We are a Chicago-based coaching and consulting company passionate about facilitating individual, team and organizational change.

We apply cutting-edge, theoretical and practical coaching approaches to help individuals, teams, and organizations bring about significant personal and professional transformation.

Our clients' accomplishments often surpass their own initial aspirations. Their enthusiasm for the new capabilities and successes they now possess, contributes to our own success. In fact, over 93% of our new clients are directly referred to us by satisfied, existing clients. We have taken great pride in maintaining this metric for over fourteen years. Simply put, your success guarantees ours.



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– Frank Duffy, M.D., Boston Children's Hospital

We are beginning to understand that psychotherapy works by changing the relevant neural circuits in the brain that haven't developed adequately, either because of poor early childhood environments or trauma. Essentially, psychotherapy helps restore healthy brain functioning by altering the brain's architecture. (*The Neuroscience of Psychotherapy*: Louis Cozolino)

Neurofeedback works by reinforcing the neural network responses that lead to the desired positive mental state. For example, children suffering from ADD/ADHD who go through neurofeedback treatment are often able to more readily perform basic tasks that had eluded them before treatment, such as reading a book or listening to a class lecture.

Training the Brain

"The instrument provides the feedback; the brain does the work."

Neurofeedback retrains the brain by capturing and recording brain waves through positive reinforcement, also known as operant conditioning. Over time, this conditioning encourages the brain to develop new neural pathways. By rewiring the brain to work on a specific problem area again and again, it reinforces desirable brain patterns. This rewiring creates systemic brain change in the individual that continues to work even after treatment ends; unlike drugs that only address the system while in the system.

How does it work in session? The treatment involves the clinician strategically placing one or more sensors on the scalp and the ear of the client. After sensor placement, the client is hooked up to a computer that will record and monitor the client's brain waves. The therapist then designs a video game to reward certain brain wave patterns so as to support the appropriate rewiring of the brain. The client then begins to play the video game by using their brain as the joystick to drive the game. The therapist sees the actual brain wave patterns. The client experiences the brain wave patterns as their effectiveness in playing the video game: the video game moves faster when brain activity

increases in a desired frequency band and slows down when brain activity shifts to an adverse frequency band.

Brain training occurs as the brain responds to the cues it is being given, thus creating new brain wave patterns and building new neural pathways. These newly learned patterns emulate those found in healthy individuals. An apt analogy is that "neurofeedback is like resetting a broken bone that has healed badly; the neural memory process systems are loosened so that they can be reformed in positive ways." (*The Neuroscience of Psychotherapy*: Louis Cozolino)

The results can be dramatic and a marked improvement in mental states. But neurofeedback is a learning process, so the results are gradual as they build over time. Initial progress can be seen after 10 sessions; significant progress is generally noted after 20 to 40 sessions. Frequent sessions are usually needed — a couple times a week — to reinforce the brain pattern development. The great benefit of sessions is that the results stay in place over time; they remain active and can be reinforced through other psychotherapy work.

The results are particularly striking with children and adolescents. Children who are dealing with ADD/ADHD and hyperactivity issues become focused enough to perform well in school. In several controlled studies of a representative group of children with ADD/ADHD, IQ score increases of 10 points were noted in one study and an average increase of 19 to 23 IQ points were reported in two other clinical studies.

Neurofeedback has had findings that have proven so successful that... "EFB [neurofeedback] meets the American Academy of Child and Adolescent Psychiatry 'Clinical Guidelines' for treatment of ADHD, seizure disorders, anxiety (e.g., OCD, GAD, PTSD, phobias), depression, reading disabilities, and addictive disorders. This finding suggests that EFB [neurofeedback] should always be considered as an intervention for these disorders by the clinician...and will apply approximately 75% of the time." (*Emerging Interventions*: Laurence M. Hirshberg, Sufen Chui, Jean A. Frazier)

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Jody Michael Bio

Jody Michael, M.A., L.C.S.W. is founder and president of Jody Michael Associates, a coaching consultancy that works one-on-one with individuals, teams and organizations to reach their goals.

She brings to her coaching practice over fifteen years of corporate leadership in the finance industry, successful entrepreneurial ventures, teaching credentials, an M.A. and PhD studies from the University of Chicago, and more than twelve years of practice applying clinical psychology principles to work-life, career, and business building issues.

To schedule an in-person office visit or an out-of-town phone consultation with Jody Michael, please call 773-275-5566.

A recent ADD/ADHD control group study of young people by the Monastras found that neurofeedback produced improvements that were superior to Ritalin. Participants who received neurofeedback as part of their treatment program showed measurable behavioral, neuropsychological and electrophysiological improvements that remained permanent, even after the “washout” effect when they were taken off Ritalin. Eighty percent of the people whose treatment included neurofeedback were able to decrease their daily dosage of Ritalin by at least 50%. (*Emerging Interventions*: V. Monastra and D. Monastra) This is a good example of neurofeedback’s synergistic effect when combined with other traditional drug therapies. It not only works well on its own, it enhances other therapies. By contrast, the young people who were treated only with Ritalin showed no long-lasting effects when tested without medication; no dosage was reduced for any individual; and 85% had to have their dosage increased. Neurofeedback made significant long-term improvements in overcoming ADD/ADHD for these young people; Ritalin did not.

People dealing with depression have experienced affective or emotional responsiveness as part of their gradual recovery, as well as an energy lift and reduced fatigue. People dealing with anxiety and panic attacks are able to better regulate their moods and reduce the number and severity of their episodes. People dealing with other mental health issues generally see lasting improvement and are able to cope without dependence on drugs.

Why Use Neurofeedback?

“Neurofeedback gives control back to the individual.”

Steinberg and Othermer have identified six ways that differentiate neurofeedback from traditional therapies. When considered together, they create a compelling case for its expanded use.

Neurofeedback:

1. Provides a viable alternative to psychotropic medication
2. Trains individuals to self-regulate naturally and safely
3. Trains individuals to adjust automatically to changing demands and conditions
4. Emancipates individuals from continual professional supervision
5. Creates a synergistic effect that can help other treatments work more effectively
6. Involves individuals directly in the treatment process

(ADD: The 20 Hour Solution: Training Minds to Concentrate and Self-Regulate Naturally Without Medication: Mark Steinberg and Siegfried Othermer)

The key reasons for using neurofeedback is that it is adaptive, flexible, works with other treatments, and gives people increased control over their lives as they go through the treatment process. This safe treatment allows people to improve by using the strength of their own neural motivation.

The Drug-Free Alternative

“Drugs only treat symptoms. Seventy percent of all drugs have sexual side effects on the libido.”

Drug therapy always involves potential risks. Drugs need to be monitored and constantly calibrated. A dosage that is too low can prove ineffective; one that is too high can cause serious side effects and mood swings. Additionally, 70% of all individuals who take psychopharmacological drugs report negative sexual side effects.

Because neurofeedback is long-lasting and does no harm to the body, it offers the benefit of hope to people who have become frustrated with traditional drug therapies that alter their bodies through chemicals under the ongoing supervision of a pharmacologist.

Not Just for Mental Illness Disorders

“Meditation is to the mind what working out is to the body.”

Mentally healthy people can also benefit from neurofeedback because it can condition their brains to function more optimally. Individuals looking for that extra edge in their competitive life can heighten their performance and reduce stress through the reinforced positive neural networks of brain training. Individuals suffering from anxiety and chronic stress can use it to clear their minds of distracting and non-productive concerns. Managers can use it to develop better leadership skills based on superior situation assessment, clearer thinking, and accelerated brain activity control.

Athletes can use it to improve their game. In fact, players on Italy’s 2006 World Cup winning soccer team used neurofeedback throughout their 2006 winning season to enhance game performance during clutch situations.

The positive effects of neurofeedback are just as valid at home as at the workplace. Everyone has areas of their lives where they want to make some improvement, from polishing up their golf game to honing their leadership style. Neurofeedback helps them reach those objectives. As such, it can be used just as well in an executive coaching setting as in a psychotherapy environment.

Scientific tests have also shown that repeated neurofeedback exercises can produce deeper levels of meditation akin to those found in Buddhist monks, without years of rigorous training. And as a recent study cited in *The Wall Street Journal* noted, the

How a Coach Can Help You

Whether your career is not quite where you’d like it to be, you’re a small business owner in search of new ideas, or you’re an executive reaching for the next rung, a coach can prove instrumental in helping you identify, accomplish, and achieve. Please refer to ‘Client Case Studies’ and read a few examples of how JMA coaches have helped their clients overcome obstacles and succeed.

A Listening Exercise for Couples

Reciprocal listening is a powerful tool for couples who need to improve their communication. Couples who try this may become aware of how limited their communication has been in the past. They also learn an effective technique, which can increase the respect, trust, and intimacy of their relationship. This exercise may seem structured and perhaps contrived at first, but stay with it. The rewards can be immense.

The couple decides on a minor disagreement that they need to talk about. Each partner takes turns being either the speaker or the listener. The speaker has five minutes to speak without interruption. As speaker, talk about the problem as you see it. Present your argument briefly and stick to the point. Be sure to use “I statements” to present your views and don’t place the blame on your partner (that is, just talk about how you feel about the conflict without putting your partner in a defensive position). After five minutes your partner (the listener) will verbally summarize what he or she has heard. This allows the speaker to let the listener know if anything has been left out or if it has been misinterpreted. Keep going until the speaker feels that the point has been completely heard.

scientific findings on the effects of meditation on the brain suggested that meditation is to the mind what exercise is to the body. If true, the rewards may clearly be worth the effort. (*The Wall Street Journal*, Nov. 5, 2004, p. B1)

The Future Implications for Psychotherapy

“Neurofeedback is not a cure-all, end-all treatment. It is, however, an exciting treatment that offers hope to some of the hopeless by teaching them to regulate their own inside-the-skin events.” (*Getting Rid of Ritalin*: Robert W. Hill and Edwardo Castro)

We appear to be on the threshold of a completely new way of treating a wide array of mental health disorders and improving mental faculties that is non-invasive and free of potentially harmful side effects. According to Dr. Louis Cozolino, the new emerging paradigm may be that the psychotherapist of the future will be a psychotherapy neuroscientist. We will continue to learn that the healing of the brain’s dysfunction or psychopathology can be repaired throughout life not only through drugs but through a combination of focused talk therapy and neurofeedback by a skilled clinician. Neurofeedback will play an increasingly significant role in this new paradigm. There are even pioneering efforts to extend the use of neurofeedback through research to include immune system disorders.

As Dr. Laurence M. Hirshberg noted: “I have come to the conclusion that neurofeedback should be viewed as one of the three essential or primary forms of intervention — psychotherapy,

psychopharmacology, and neurofeedback. In my experience, neurofeedback is every bit as important and powerful as the other two forms of treatment.” (*Emerging Interventions*: Laurence M. Hirshberg, Sufen Chui, Jean A. Frazier)

Neurofeedback is now a recognized treatment that can change lives for the better. Though it is unlikely that neurofeedback will ever totally replace drug therapy, it does offer an alternative for many people whose mental health issues could be mitigated just as effectively without the debilitating side effects and ongoing medication management. We’re going to learn much more about the therapeutic benefits of neuroscience as scientists and clinicians build a research base for the use of neurofeedback to ease mental disorders and enhance personal productivity, increasingly more difficult. And make sure that you can repeat them for practice. For example, if you fear public speaking, start out with making conversation with one person. Then move on to talking to a group of two or three people. Then talk to five people in an informal group. Move on to asking a question in a formal business meeting. Then talk at more length in the business meeting. And finally, after you have repeated all of these steps several times, find a way to speak in public to a large group.

As you practice going into anxiety-provoking situations, remember to relax your body. Deep breathing techniques are especially effective. Practice deep breathing until you can put your body into a relaxed state on purpose. Then go into the anxiety-provoking situations in a relaxed state. You’ll be ready to face your anxiety. It takes courage, each step of the way, but you can be successful.

As the listener, pay close attention to what is being said and try to attune yourself to your partner’s needs. When you summarize what your partner has said, make sure you don’t disagree, argue, or criticize. Just repeat what you have heard.

Now switch positions. The speaker becomes the listener and the listener, the speaker. Follow the same procedures until the new speaker feels satisfied that his or her position has been understood. It is important to avoid letting this exercise turn into an argument. Because this is such a powerful way of learning to listen and to communicate better, many people prefer to try it with a therapist present, at least for the first few attempts.

Suggested Reading...

Louis Cozolino.
The Neuroscience of Psychotherapy: Building and Rebuilding the Human Brain (first edition, hardcover), 2002, \$30.00 ISBN: 0-393-70367-3.

F.H. Duffy.
Editorial: *The state of EEG biofeedback therapy (EEG operant conditioning) in 2000: an editor’s opinion*. 2000, *Clinical Electroencephalography*, 31(1), V-VIII.

Mark Steinberg and Siegfried Othermer.
ADD: *The 20 Hour Solution: Training Minds to Concentrate and Self-Regulate Naturally Without Medication* (third edition, paperback), 2005, \$14.95 ISBN: 1-931741-37-9.

Robert W. Hill, PhD and Edwardo Castro, M.D.
Getting Rid of Ritalin: How Neurofeedback Can Successfully Treat Attention Deficit Disorder Without Drugs (first edition, paperback), 2002, \$19.95, ISBN: 1-57174-254-9.

Laurence M. Hirshberg, PhD; Sufen Chui, M.D., PhD; and Jean A. Frazier, M.D.
Emerging Interventions: Child and Adolescent Psychiatric Clinics of North America, Volume 14 (1), pages 1-19, 55-82, \$49.95, Jan. 2005, ISSN: 1056-4993.