



Clarity Enterprises Inc.

NeuroBehavioral Learning

An Overview

July, 2010

Contact Dean Kraemer, Chief Marketing Officer, (818) 383-6673

www.clarityenterprisesinc.com

info@clarityenterprisesinc.com

TABLE OF CONTENTS

WHAT IS NEUROFEEDBACK TRAINING?	1
NEUROFEEDBACK & ADDICTION.....	2
THE CLARITY MODEL®	3
CONTINUING CARE	5
MANAGEMENT.....	6

WHAT IS NEUROFEEDBACK TRAINING?

Neurofeedback, or EEG-biofeedback, is literally brainwave biofeedback. During typical training one or two electrodes, connected to a PC interface, are connected to specific sites on the scalp, with a reference electrode connected to an earlobe. Heart rate, temperature, skin conductance and breathing are also measured. The electrodes measure the electrical activity (frequency) in the brain – much like a doctor listens to the heart from the surface of your skin. No electrical current is put into the brain. By using simple training techniques, brainwave activity is changed. When it reaches a desired level (frequency and amplitude), the computer program provides “feedback,” usually in an aural or visual form. The brain begins to crave this feedback and changes its function toward this preferable brainwave activity. The mechanism of the action is called operant conditioning – literally reconditioning and training the brain. It is the cerebral equivalent of going to a gym and working out.

Prolonged substance abuse and addiction result in brain damage. Neurofeedback training restores the brain functioning, reduces cravings, and helps the person control impulses and deal with the cravings that can trigger relapse.



NEUROFEEDBACK & ADDICTION

Over the past 20 years, studies have consistently proved the effectiveness of neurofeedback in treating alcoholics and drug addicts. Three of the most prominent studies are

Peniston, 1989 – done in conjunction with the Veterans Administration in Colorado. All subjects were Vietnam veterans who previously had other forms of treatment with unsuccessful results. They were all severe alcoholics who also suffered from post traumatic stress disorder (PTSD). The subjects were assigned to one of two groups: ten were assigned to the experimental group using neurofeedback therapy, and ten were assigned to the control group, using traditional psychotherapy.

Outcome: an 80% abstinence rate in the experimental group (80% of the subjects stayed sober as of both the three-year and ten-year follow-ups), compared to a 20% abstinence rate in the control group. The experimental group also experienced no further issues with PTSD, and all clinical scales were within normal ranges on the Millon Clinical Multiaxial Inventory (MCMI) (Peniston, 1998).

Diné (Navajos), 1994 – A neurofeedback study conducted with 19 alcoholic Native Americans using culturally appropriate treatment.

Outcome: The three-year follow-up showed that 80% of the subjects stayed sober (Kelley, 1997).

Cri-Help, 2005 – Cri-Help is a recovery center in North Hollywood, California. The study included 121 subjects (60 in the control group receiving no neurofeedback; 61 in the experimental group that received neurofeedback training).

Outcome: A three-year follow-up concluded that 77% of the experimental group remained sober (those that received the neurofeedback training) versus 44% of the control group (those that did not receive the neurofeedback treatments). The Cri-Help study also documented that the neurofeedback training significantly improved anxiety, depression, stress, sleep and other disorders, and the experimental group stayed in treatment 50% longer than the control group (Scott, 2005).

Clarity goes beyond standard neurofeedback training by creating a complete addiction program that is customized to the individual client – NeuroBehavioral Learning.

THE CLARITY MODEL®

Clarity trains technicians in the recovery facility (usually alcohol and drug counselors) to administer EEG-biofeedback sessions with direct live supervision of both the client and technicians. The supervision is accomplished in real time through the Internet with voice and IM capability by experts in the neuroscience foundations of addiction and EEG-biofeedback. In this way recovery centers get a turnkey system that does several things no other provider of neurofeedback does:

1. Sessions and program are customized to the individual.
2. Sessions and program are constantly monitored by experts in the field, rather than individuals who are briefly trained and use a “one-size-fits-all” protocol.
3. Clarity’s program incorporates a comprehensive initial assessment
4. The clients experience continuous evaluation and self-assessment throughout the program, allowing them to feel ownership in their recovery program.

THE CLARITY DIFFERENCE

The Peniston-Kulkoski Protocol for Alpha-Theta Neurofeedback was developed over twenty years ago, and most neurofeedback providers use the Peniston protocol unchanged. They also provide minimum training to clinicians; so quality control is limited, at best.

The Clarity Model®, developed by neuroscience pioneer Dr. Robert N. Grove, incorporates the latest neuroscientific findings concerning the brain. It integrates how addiction impacts the brain (including impulsivity, relapse triggers, and kindling theory), the use of mental rehearsal as opposed to generic scripts, and the use of technology to ensure constant, continuous quality control. Additionally, the Clarity Model® incorporates the monitoring of the client’s physiology into every protocol, enabling the staff to detect increased levels of arousal even when the brain “shuts down.” The Clarity program is fully integrated into the recovery center’s existing program, enhancing the staff’s ability to provide a high level of care for their clients.

KEY CONCEPTS

- **ADDICTION** Alters brain function.
- **LEARNING IN RECOVERY** Requires “calming” of the brain -- The brain of an addict or alcoholic is damaged. Neurofeedback helps the brain heal so clients can more readily participate in and benefit from all your forms of treatment.
- **RELAPSE-PREVENTION** Requires both exposure to addiction cues (triggers) and altering the brain’s tendency to shut down while craving substances.
- **NEURO BEHAVIORAL LEARNING** Addresses these issues directly.

INITIAL EVALUATION

- Medical & Personal History
- Q-EEG -- Brain-Waves
- MMPI
- Clarity's Neuro Stress Profile®
- Clarity's Addiction Stress Profile®

We begin our program with extensive assessment using a combination of “paper and pencil” tools like the MMPI. We also use sophisticated EEG and physiological measurements, including a “brain map” or qEEG, allowing the design of a completely individualized program for each client insuring maximum effectiveness and optimal chances for success.

The program integrates into your existing treatment typically in three phases.

PHASE 1: GENERAL RELAXATION TRAINING

- Biofeedback to Raise Hand Temperature
- Rhythmic Breathing Training
- Visualization Training
- Autogenic Training
- When needed, Cognitive Rehabilitation for attention deficit problems

Phase 1 focuses on relaxation and “calming” the brain, which allows the client to benefit more from all the other treatments your facility offers, as well.

PHASE 2: ALPHA/THETA TRAINING

- Alpha/Theta neurofeedback
- Guided Imagery
- Constructed Imagery (Mental Rehearsal)

The focus of Phase 2 is the classic alpha/theta sessions proven to be so successful in past research studies. During this phase a client can sometimes suddenly remember a past traumatic event that had been forgotten or buried for years. Because Clarity trains counselors from your facility to conduct the sessions, it means these events can be carried right into the other treatment sessions to be dealt with thoroughly.

PHASE 3: RELAPSE PREVENTION TRAINING

External Cues – things/places/people associated with drug use will trigger strong reactions in persons with a history of drug or alcohol abuse.

Internal Cues -- emotions and feelings also trigger drug cravings in ex-addicts and ex-alcoholics long after drug / alcohol use has stopped.

Phase 3 is all about relapse prevention with exposure to cues that can trigger a relapse. This is a critical part of the program and is essential to the client's success after returning to his/her daily life. Part of this training includes altering the brain's tendency to shut down during periods of craving. We will actually trigger cravings in the client to desensitize the client to them, therein breaking the link from cravings to using.

Planned Exposure = **Systematic Desensitization**

ADDITIONAL BENEFITS

- **Reduced impulsivity.**
- **Better sleep.**
- **Less anxiety.**
- **Reduced stress.**
- **Reduced depression.**
- **Far more receptive to other therapies such as individual and/or group counseling, nutrition, yoga meditation etc.**
- **More likely to stay in treatment longer.**

CONTINUING CARE

CLARITY offers a Continuing Care Program that features outpatient service, a "take-home" unit, and continuing assessment to further assure success and validate outcomes. We recommend the program for at least one year.

Clarity will also coordinate any other services the client may require, if desirable.

CLARITY's Continuing Care Program can be offered in one of two ways:

1. Directly through the facility and its website. All billing to the client is generated by the facility.
2. The client deals directly with Clarity after being referred by the facility. Clarity will issue reports to the facility on status of the client for its records.

The Clarity Continuing Care Program insures you have a year-long relationship with every client and that you document and verify your success rates with clients through comprehensive continuing assessment and outcome studies.

MANAGEMENT

Rick Sautter, M.S. President/CEO – Mr. Sautter is a graduate of the U.S. Naval Academy with a Masters degree in management from the University of Southern California, and both during and following a distinguished career in the U.S. Navy, he has gained invaluable experience in management in the alcohol and drug treatment industry. As Deputy Director of a treatment center for drug, alcohol and overeating disorders, the largest in the Defense Department, he was in charge of day-to-day operations of 200-bed inpatient treatment facility with 110 member staff, ½ military and ½ civilian. He prepared and administered a \$6,000,000 budget, and he directly contributed to patient treatment process by administering discipline system, improving treatment success rate. He organized and supervised the Center's Training Department move to co-locate the Navy's only Alcohol and Drug Abuse Counselor School with the main facility; the project was accomplished on time and under budget. He also guided the organization to full accreditation by Commission on Accreditation of Rehabilitation Facilities (CARF). Mr. Sautter has also held key positions in organizations serving the drug and alcohol treatment field, having been the Executive Director of the California Association of Alcoholism and Drug Abuse Counselors (CAADAC) and Director of Operations for Aegis Medical Systems, a corporation administering 26 opiate treatment facilities throughout California.

Mr. Sautter holds a Bachelor of Science degree from the U.S. Naval Academy and a Master's of Science degree in Systems Management from the University of Southern California.

Robert N. Grove, Ph.D., Vice President/Chief Science Officer – Dr. Grove is an expert in the treatment of addiction, and he is one of the pioneers of neurotherapy. As a National Institute of Mental Health (NIMH) pre-doctoral fellow, he majored in psychology and minored in medical at the University of Minnesota, earning his Ph.D. and specializing in the neurobiology of addiction long before it became popular. As a NIMH Post-Doctoral Fellow at the University of Chicago Pritzker School of Medicine, he worked on the neurobiology of addiction with primates during the night while working with neuropsychophysiology conditioning factors in street drug addicts during the day. Dr. Grove was the Director, Substance Abuse Primate Drug Self-Administration Unit, Laval University, and he was the Founder, Behavioral Medicine Unit, Laval University School of Medicine, a project funded by the Canadian Research Counsel. Dr. Grove was also Co-director, Clinical Psychophysiology Unit, Sepulveda VA Medical Center, funded by NIMH.

A licensed psychologist since 1981, Dr. Grove has continued to teach as a lecturer at the UCLA Substance Abuse Training Program for the last 17 years. In addition he has taught at USIU, Alliant University, and at professional conferences in Substance Abuse Treatment and Rehabilitation. He has established several hospital behavioral medicine units in substance abuse, pain and head injury rehabilitation. He is a distinguished Senior Fellow in the

Biofeedback Certification Institute. He developed some of the first systems to help people control brain waves. In the early 1990's, he co-founded the International Society of Neuronal Regulation (ISNR), the premier professional society of neurofeedback. At the same time, he has guided the Biofeedback Society of California across 3 decades as a member of the board of directors and 3-time president.

Julie Madsen, Psy.D., BCIAC, Vice President/Chief Education Officer – Dr. Madsen has been a Licensed Clinical Psychologist for 20 years. She has been a staff therapist at the Beverly Hills Community Clinic, a counselor and case manager at three of the Los Angeles area residential facilities for the chronic mentally ill, as well as a senior clinical psychologist at Riverside County Mental Health Center in Indio, before going into private practice. She is an expert at assessments and evaluation for treatment, with tremendous experience with adult populations with problems from adjustment and crisis issues to ongoing neurotic character and borderline/psychotic levels of disturbance. Her background includes a wide variety of psychological testing; individual, group and family therapy integrating play, cognitive-behavioral, systems and/or psychodynamic approaches to fit type and severity of problems; referral; and EEG-biofeedback for addiction, ADHD, PTSD, anxiety and other stress related problems, chronic pain, depression, and peak performance. She has also been a long time presenter, including dual diagnosis presentations for the Betty Ford Center, among other institutions. Dr. Madsen has been a partner to Dr. Grove in developing EEG and biofeedback protocols in a variety of applications, primarily in addiction treatment. She is currently a staff psychologist at Eisenhower Medical Center; Rancho Mirage, CA and is on the board of directors for the Biofeedback Society of California.

Dean Kraemer, Vice President/Chief Marketing Officer – Mr. Kraemer has spent over 25 years in advertising, promotion and marketing, in New York and Los Angeles, working in all forms of media on a wide variety of industries – from startups to blue chips, small businesses to huge corporations, including Chase Bank, CitiBank, Miller Beer, Coke, Colgate Palmolive, Cheeseborough Ponds, Phillip Morris, Conde Nast, Time Warner, and many others. He has been an entrepreneur and marketing consultant for the past 10 years, working with a variety of companies. Mr. Kraemer is the winner of over 70 awards for his work, including Clios, Addys, Andys, recognition from two Senators, a Governor and a Mayor as well as an award from *USA Today* for having the Best Commercial on a Super Bowl.