

THE LENS EXPERIENCE

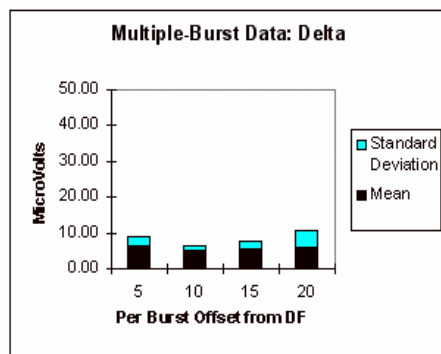
Since neurotherapy is not yet widely known as a treatment modality, most people entering a neurotherapy treatment program are understandably curious about what it will entail for them in terms of specific procedures, treatment effects, and the number of sessions necessary to resolve their complaint. This document is designed to answer some of these questions.

The Evaluation Period

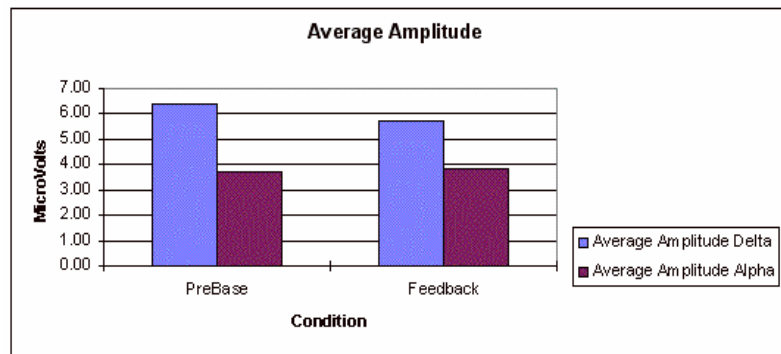
Every treatment program begins with an initial consultation, lasting approximately 60 minutes. During this time, an intake interview will be conducted during which information will be gathered about the person. This interview will entail review of numerous informational forms. Time will also be spent describing the course of treatment and answering any of questions and/or concerns. If the person decides to continue with neurotherapy, s/he will be asked to sign an Informed Consent document.

The Offset

For the second portion of the evaluation, the therapist will administer an *offset* procedure to determine the most effective dosage for treatment. The offset establishes a baseline of one's brainwave amplitudes prior to any neurofeedback and then measures the response to varying degrees of stimulation. In this session, we are seeking to determine how both the person's brain and his/her symptoms respond to the particular type of stimulation provided by neurofeedback. The offset is an exploratory procedure in which the computer is used to record a person's brainwave activity at one site. After six minutes of monitoring the raw EEG to establish the baseline, four invisible and gentle radio-wave stimulations are given. Each burst is separated by a minute of observation and recording of the changes in the brainwaves brought about by the stimulation. The 10 minutes of offset data are recorded and translated into graph form. This information helps us to evaluate a variety of settings, which can help make treatment more efficient, and potentially reduce the time and expense of treatment. This information is crucial in establishing the format of future treatment sessions and the optimal stimulation dosage for the person's particular circumstances.



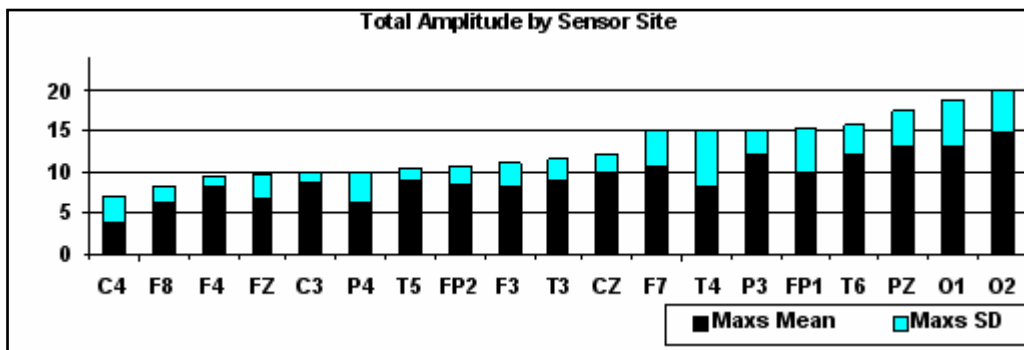
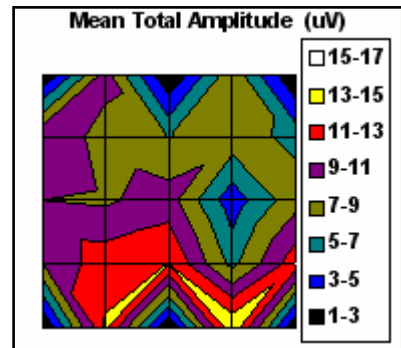
This graph shows the stimulation effects on the delta brainwave amplitude at different offsets.



This graph shows the overall effect of the four stimulations on amplitudes of Alpha and Delta, and the standard deviations.

The Brain Map

To conclude the evaluation, a full topographic brain-mapping procedure will be conducted, in which brainwave information will be collected from 19 specific sites on the scalp by moving the active sensor from site to site and measuring amplitude and frequency. The equipment does not emit any electricity. It only reads the tiny electrical signals coming from the brain through the scalp. No electrical activity is ever administered to the brain. This information will be computer processed to provide a "map" or chart of the person's individual brainwave patterns, and will help to determine the nature and extent of any brainwave irregularities that may be present, as well as give us an outline for how to proceed with the neurotherapy treatment. The brainwave map (above) shows us the total amplitude and frequency levels at each site. The brighter colors show where the cerebral cortex, the outer layer of the brain, functions poorly to inhibit electrical activity coming from within the brain.



Finally, the above graph shows the same activity as the map in bar graph form. Each bar represents the total brain wave amplitude and variability at each place on the scalp from which the brain waves are recorded. The importance of this graph is that it tells the order in which each area on the scalp is to be used to guide the feedback. We work with each site from shortest bars, first, proceeding to the highest bars last. The lowest bars represent where brain functioning is best. Thus the treatment works with the strength of the brain, helping it to work and communicate better with itself. This site sort is used throughout treatment to document actual change in the brainwaves. The lowering of the colored bars shows the amplitudes of the brain waves diminishing. This reflects increasing functionality of the cerebral cortex to quiet the unnecessary activity of the brain.

Upon completion of the Intake Interview, Offset, and Brain Mapping, the evaluation is finished. At this time, using an understanding of the person's history, observations of the brain's reaction to treatment and careful reports of subjective and symptomatic responses, it will be possible to project an estimated treatment length for one's situation.

Regular Treatment Sessions

The next phase of treatment is a series of individualized sessions. After a therapeutic consultation lasting approximately 30 minutes, the neurofeedback treatment takes about 30 to 45 minutes. Visits are usually scheduled on a weekly basis, in which brainwave activity will be monitored from one to four sites on the scalp. The sites and dosages chosen for treatment will depend on the results of the evaluation procedures. The session format and dosage may change as the course of treatment progresses as a result of the reactions the person may experience during and immediately following the session, as well as in the time period leading to the next session. The following estimates are based on our experience; some persons have needed fewer sessions, and some occasionally need a few more.

The following is a general guideline:

1. If the problem is of recent duration after a life of high functioning, and the person is not overly-sensitive to neurofeedback, we estimate 8 to 10 sessions.
2. If the problem is of recent duration after a life of high functioning, and if the person is highly-sensitive to neurofeedback, we can expect approximately 10 to 20 sessions.
3. If the person has a lifelong history of multiple problems and is very sensitive to the feedback, we estimate up to 30 or more sessions.

Pre-Session Report

Prior to the actual running of each treatment session, we will inquire about reactions since the previous session over the short-term (12-24 hours after the session) and the long-term (the remainder of the time up to the day and time of the current session). The reports of the person's reactions to the treatment are critical to our ability to determine the optimal treatment parameters for each session, so we strongly encourage the person to be accurate and thorough in self-observations during the time between sessions. We provide a brief daily log of identified symptoms and reactions. We are especially interested in knowing about any *changes* that occur in the frequency, intensity and duration of any usual symptom patterns, for better or worse, so that we are able to determine the efficacy of the neurotherapy and make any necessary adjustments. In keeping track of a person's reactions, we suggest that s/he familiarize oneself with the three major domains, or areas, into which most of the symptoms of Central Nervous System dysfunction fall.

They are:

1. Problems of **Force** - energy/stamina (fatigue), sleep patterns, initiative, motivation, perseverance, movement/coordination.
2. Problems of **Focus** - attention/concentration, distractibility, cognition, mental clarity, comprehension, memory, sequencing, prioritizing, decision-making.
3. Problems of **Feeling** - mood (depression, anxiety), self-concept, panic, hypervigilance, obsessiveness, irritability, rage, explosiveness.

The pre-session report is a critical aspect of the treatment regime, and so we stress that a person do his/her best to be attentive to one's functioning in the above-referenced domains between sessions.

Treatment Effect

Following are some of the reactions you may experience over the term of your neurotherapy treatment program:

1. Brief Reactions

On rare occasion, there may be some potential risks of minor discomfort. A person may temporarily feel uncomfortable, irritable, tense, anxious, or fatigued. This rarely happens for more than a second at a time. If this happens, we adjust the settings on the equipment to the extent that the person is once more comfortable. The primary signs indicating a need for adjustment are feeling overly "tired" (fatigued) or "wired" (irritable/anxious), usually occurring during or shortly after the session, or seeing no change in one's condition during the week subsequent to the session.

2. Longer Lasting Reactions

Sometimes a person experiences a one- or two-week period of anger, fear, and/or irritability during the initial phase of treatment. Others have reported feeling as if they have tremendous energy to do things, or feel very tired. These longer-lasting reactions have especially tended to occur with particular feelings that people have been struggling to control for a long time. While these feelings can be intrusive and bothersome, it has been the experience of previous persons that they are still able to function adequately. At times however, additional support from the therapist or one's own physician may be useful and should be relied upon. It has also been observed that the need for many medications often decreases. As the person's neurological efficiency improves, medications remain in the body unused. People often start having side effects from them because of the decreasing tendency of the body to rely on them, and they may no longer need the same level of medication. People being treated with neurotherapy who are also taking prescription medications are instructed to stay in close contact with their physician to monitor their reactions and possibly adjust dosages.

3. Between Sessions

While many people feel energy, ease, clarity, and happiness after a neurotherapy session, these positive feelings may precede feelings of fatigue, depression, and anxiety between sessions. Those persons "rebounding" from good feelings often feel discouraged and doubtful about their ability to finish treatment. The rebound appears to be the brain's way of struggling to remain in the old, familiar, and dysfunctional state. As people continue with neurotherapy, both the intensity of the good feelings and the unpleasant rebound periods tend to become shorter and less intense until the exaggerated feelings no longer occur. To date there have been no exceptions to this pattern. Instead, people become clearer about the entire range of feelings they have, instead of becoming numb and flat in their emotional responses.

Pre-Session Processing

An important component of the regularly scheduled session is the psychotherapeutic processing of any reactions or psychological material which may have arisen in the week prior to the session. As is any other change agent, neurotherapy is a disruptive process, with inevitable ups and downs on the road to eventual improvement. Psychotherapy or counseling during one's course of treatment is essential. A portion of each treatment session is necessarily dedicated to such processing. Our clinicians are fully licensed or license-eligible to provide psychotherapy as well as neurofeedback sessions at this office. Our treatment protocol integrates neurofeedback and psychotherapy, as a holistic treatment program.

Reassessment

After an initial course of treatment, a person may decide to continue or discontinue treatment. If the decision is to continue, we will conduct a brain remapping, which will allow us to view graphically the progress made in terms of changes in one's brainwave patterns and movement toward greater balance and flexibility. It will also allow us to determine the most effective treatment protocol. Of course, symptom improvement is the most important determinant.

Considerations After Treatment

When a person stabilizes by achieving and maintaining consistently better functioning signals, it is the time to discontinue neurotherapy. Most of those who have received neurotherapy have continued to improve long after treatment has ended. The changes generated by neurotherapy treatment tend to be permanent (as would any other behavior pattern "programmed" into the brain, e.g., reading, riding a bicycle, etc.) unless some new trauma occurs. "Booster" sessions are typically unnecessary, but some persons have found it helpful to receive one or a short series of neurofeedback sessions some time after their initial treatment program was discontinued. Generally, it is the person with the more complex case history and chronic symptoms who is seeking and benefiting from these sessions.

What Neurotherapy Will Not Do

1. Neurotherapy will not make life pretty or make other people wonderful, warm, generous, or fair. Life retains its difficulties on the outside.
2. It will not change people's moral and ethical outlook. It will make them more of who they really are, and make it *easier* for them to be themselves.
3. It will not, by itself, make people wiser. It will, however, open them up to the wisdom they have already taken in, and to the wisdom they find around them, or with which they surround themselves.
4. It will not make long-used defenses go away easily. This is a disruptive treatment, as is any change agent from yoga to moving a household. People often will feel very confused as old defenses crumble, and their brains have not yet learned how to naturally formulate new and more flexible ways to be and to function in the world. Some people who have been trying *not* to be angry will find themselves becoming angry – as they really are. However, their anger will finally pass once they let themselves feel what there is to feel, if their life is treating them right.
5. Neurotherapy will not magically make people easy to work with if they are incredibly complex, difficult, and reactive. People who feel they have a lot "wrong" with them, and who say they have lifelong difficulties, can be successfully worked with, and left very sturdy. However working with these people in the *most* complex of instances is a delicate task, and may require a long course of treatment.

We trust that this document has addressed most of the questions about neurotherapy. If you are interested in treatment, please contact our office to schedule an appointment.



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