

## EEG Neuro-Imaging Procedure & NeuroGeniSys Procedure and Process

Over the years brain neuro-imaging techniques have become more refined and are being used at major institutions such as UCLA and Harvard. Brain neuro-imaging techniques fall into three major categories:

1. Measurements the brain anatomy and structure
2. Brain metabolic responses
3. Brain activity, timing, and functional responses to activities

In an ideal world we would prefer to measure all three measurement types in our analysis, but unfortunately that can become cost prohibitive and many insurance companies will not reimburse for multiple tests. So, to help minimize costs, the conventional approach to brain measurements focuses on the anatomy of brain structures only. This is done to rule out basic damage to the brain due to severe head injuries, and is not intended to be effective for mild head injuries, much less to look at neurodevelopment. These assessments usually use an MRI or CAT scan. These methods yield great results when attempting to rule out lesions or damage to different parts of the brain's structure. However, these tests yield little to no information concerning how well the brain is performing, especially under task or pressure.

Presently, the only technique fast enough to help measure true brain processing issues is the EEG. This method measures brain waves at the scalp's surface. Two other useful and popular techniques utilize fMRI and SPECT scans, which highlights anatomical, structural, or metabolic issues. Neither method is fast enough to read the changes that occur in the speed of processing of the brain.

The NeuroGeniSys Procedure is a proprietary process developed by Crossroads Institute and identifies dysfunctional areas of the brain and then recommends an integrated plan that assists in correcting these issues appropriately.

The NeuroGeniSys model is firmly based on a bio-social approach to healing. We look at the biology and its function, the neurology and its function, combined with the development of the personality and skill level, and environmental effects and then monitors how each interacts with the other in order to produce the desired results.

The NeuroGeniSys Procedure looks at neurodevelopment and neurofunction processing and integrates those findings with the health of the body. The process measures 293 dimensions of brain activity and how each individual compares with age appropriate and peer determined norms. This relates directly to how each individual interacts in school, work, and life. Crossroads Institute looks at each person's abilities and capabilities from a neuro-cognitive point of view. We look at 13 brain phenotypes based upon the EEG that affect specific

neuro-circuits. In addition, we consider 9 primary functions of the brain. How does the brain:

1. Receive Information
2. Process Information
3. Integrate Information
4. Express Information
5. Regulates Information
6. Think about Information
7. Attend/Focus on Information
8. Learns about Information
9. Autonomic Tone

From this we learn:

1. Higher Level Cognitive function
2. Attention function
3. Executive function
4. Perceptual function
5. Expressive function
6. Emotional Regulation function

These basic functions influence our awareness, perceptions and expressions in life. There are many interrelated neurodevelopmental underpinnings, which are also required for proper execution and expression.

When these underpinnings are fully functional, they allow each of us to perceive daily events in a healthy way and execute proper actions or reactions.

If they are dysfunctional, the underlying root cause/s of the dysfunction can block and act like shields, which will then improperly filter our perceptions and distort our experiences of life. For instance, if the brain is not processing all information quickly enough, the fullness of the situation may not be appreciated, such as a teacher assigning homework for the evening. If the student can not process the instructions fast enough or is not understanding what is being asked, chances are the assignment will go undone.

Our perceptions or distortions of life will depend upon what has been blocked and how the information has been filtered. These are experienced as learning difficulties, social inadequacies, under achievement and distorted realities, which are reflected in personality quirks.

NeuroGeniSys measures these mechanisms in order to determine if the brain is, in fact, interpreting and processing data appropriately. These measures help highlight an individual's overall cognitive performance and learning differences. Through our extensive analysis process, Crossroads is able to achieve a more detailed picture of processing strengths and weaknesses and then create an individualized program based on the results of these measures.

Each individual will undergo an eight (8) stage process.

1. Intake Process
2. Data Collection

3. Data Analysis and Interpretation
4. Program Design
5. Monitoring and Supervision
6. Re-assessment and refinement
7. Graduation
8. Post assessment

The NeuroGeniSys evaluation identifies loss of function or missing stages of development that may hinder performance into adulthood.

The neurocognitive evaluation takes a "snapshot" of each individual's present abilities and indicates areas of the brain that need to be retrained or enhanced.

Our integrated approach utilizes qEEG brain mapping, a neuro-development evaluation and a cognitive abilities assessment to screen issues such as: dementia, short term memory loss, head trauma, depressions, addictions, ADD, learning disabilities, stress and anxiety. This comprehensive evaluation also helps to identify whether the issue is physiological or psychological in nature.

If the problem is medical-related we recommend licensed specialists who can investigate further. This can be in the form of nutrition, toxicity (medication or environmental pollutants), metabolic and body health.

We believe the health of the brain can not be separated from health of the body...that both interact together and to ignore one is to limit the success of the other.