FAQ NeuroEval® and NeuroCodex®

What is the NeuroEval® / NeuroCodex® ?

The NeuroEval® and NeuroCodex® analysis process starts with a NeuroPsych exam with tasks that are designed to engage the brain in a certain manner. On top of that we have added a neuro-electric exam using EEG measuring the brain wave activity during the tasks/activities. Over the years, with thousands of clients, we have been able to create a normalized database, (based upon age) of where a person should be with brain performance. In other words, we know what the EEG reading should show, based on norms of performance measures on each activity at different ages. We take those brain-based responses and correlate those measures and responses to symptoms, behaviors, and expressions.

How Does the NeuroEval® / NeuroCodex® differ from the typical QEEG EO/EC?

Our NeuroEval® has many levels to it. The first level is measuring brain wave activity (EEG) with the brain at rest, known as Eyes Closed (EC). We also measure brain wave activity with Eyes Open (EO). That is the individual's baseline brain wave activity reading. However, we know that is not sufficient to see how the brain operates under tasks, activities, stress, or fatigue. Most of us do not stay in a state of "rest" during our daily lives and cognitive function. We are actively involved in tasks and activities, and this is what indicates cognitive connectivity and cognitive abilities. So, we do next level EEG measures, by conducting a neuropsych testing and classic neuroscience processes that measures the brain in a task mode. We measure Event Related Potentials (ERPs) and brain processes as the client goes through each particular task to measure what the brain *should* be doing vs. what it is *actually* doing. The brain systems should be connecting and disconnecting and contributing to other brain systems in optimized and efficient timing. This is one of the most significant differences in our process from classic resting state only QEEG (EO/EC). NTL not only records resting state but also activity/task active state measurements.

How does the NeuroEval® / NeuroCodex® differ from PET, MRI, fMRI, CT when looking at brain function?

When you are looking at using imaging to determine the cognitive *function* of the brain, like NTL does, we use a very specific tool. And that tool is EEG. EEG differs from fMRI, MRI, CatScan, PET scan, SPEC scan. Each tool has its strength and weakness. The strength of an fMRI is that it can look at the brain structure in a fairly detailed way. It can project down to the lower structures. The weakness is in its "timing". It is not fast enough. It does not capture the interactions within the brain structure nor how the brain *functions*. The brain interactions work in milliseconds. The fMRI, SPEC, CT work on a roughly 2-second model. So, what goes on in-between that timing? What functions, interactions, connections are happening in-between that time? None of those tools can show that. What we have found is that it is the *engagement* "in-between" that allow the set of structures in the brain to engage or not. So, we have chosen to use the most detail-oriented tool (due to its ability to measure within a millisecond) in order to "see" the engagement within brain structures that measures function, interactions, and connections. In MRI, fMRI, CT you can see improvements in structure (healing/healed brain), but not function or cognitive abilities. While most instruments/tools think they are looking at function, the question is, how detailed? And from what angle or perspective? The fMRI is looking at function from structural engagement, not necessarily timing or phasing, because it is too slow. EEG looks at regions of the brain as they engage and contribute to specific cognitive function, abilities, and expressions. It is that timing that turns on and turns off the circuits that we have found to be most important. Most people do not have structural damage (addictions, learning disabilities, PTSD, eating disorders, even certain TBIs). We find the repair necessary because of the weakness in the timing of interactions between brain centers and brain systems. SPEC and PET scans can see the metabolic flow, so you are looking at the amount of the structure that is engaging but not "what" allowed those engagements to take place. EEG is looking at "what" mechanisms are allowing the engagement of interactions between the brain regions.

Can NeuroCodex® show the level of brain damage?

Level is not really a good term because it implies hierarchal damage. A better way to look at it is, can NeuroCodex® show how complex the issue/s are and what brain systems are compromised. And NeuroCodex® will show that.