The **Extended assessment** provides a very in-depth look at the brain and body. You will receive a detailed written report which includes the Stress Test, surface, cortical, and network maps, plus information about psychological wellbeing, and/or cognitive processing. We will do either the CNS Vitals Test or an ERP (Event Related Potentials) test.

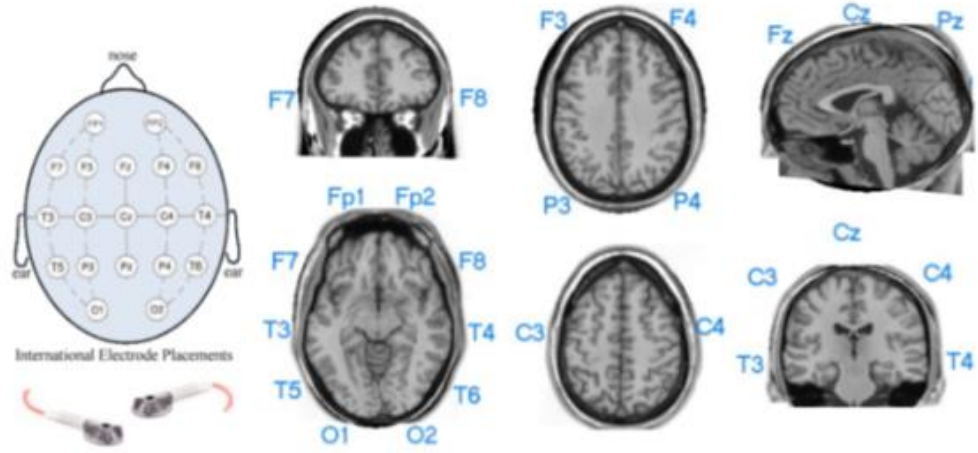
Images of Extended Assessment Report

This is an extensive report which summarizes the multiple assessment data collected from you and makes recommendations for potential treatment at Stable Roots Therapy, as well as practices that you can do at home.

We offer innovative neuroscience-informed, connection-focused counselling and therapy services for children, youth, and adults. Our unique services include options such as farm-based & nature-based therapy, play therapy, in-office psychotherapy, equine facilitated wellness, and neurotherapy. The ultimate goal is to enhance client wellbeing.

Table of Contents

The international 10-20 system for electrode placement is used and electrode impedance of less than five kilo ohms is used. Activity at the functional regions of the brain, including Brodmann areas (BAs) are incorporated into the findings with the use of Low-Resolution Brain Electromagnetic Tomography (LORETA) software.



BIOFEEDBACK MEASURES

Since the brain and body are intricately connected, it is important to also collect physiological data. The Thought Technology system is used with the BioGraph Infiniti encoder. Sensors are placed on the thumb (to measure heart rate/pulse), shoulder (to measure muscle tension), around the waist (respiration), pointer and ring finger (skin conductance - sweat), and pinky finger (skin temperature).

Image from Surface Reports

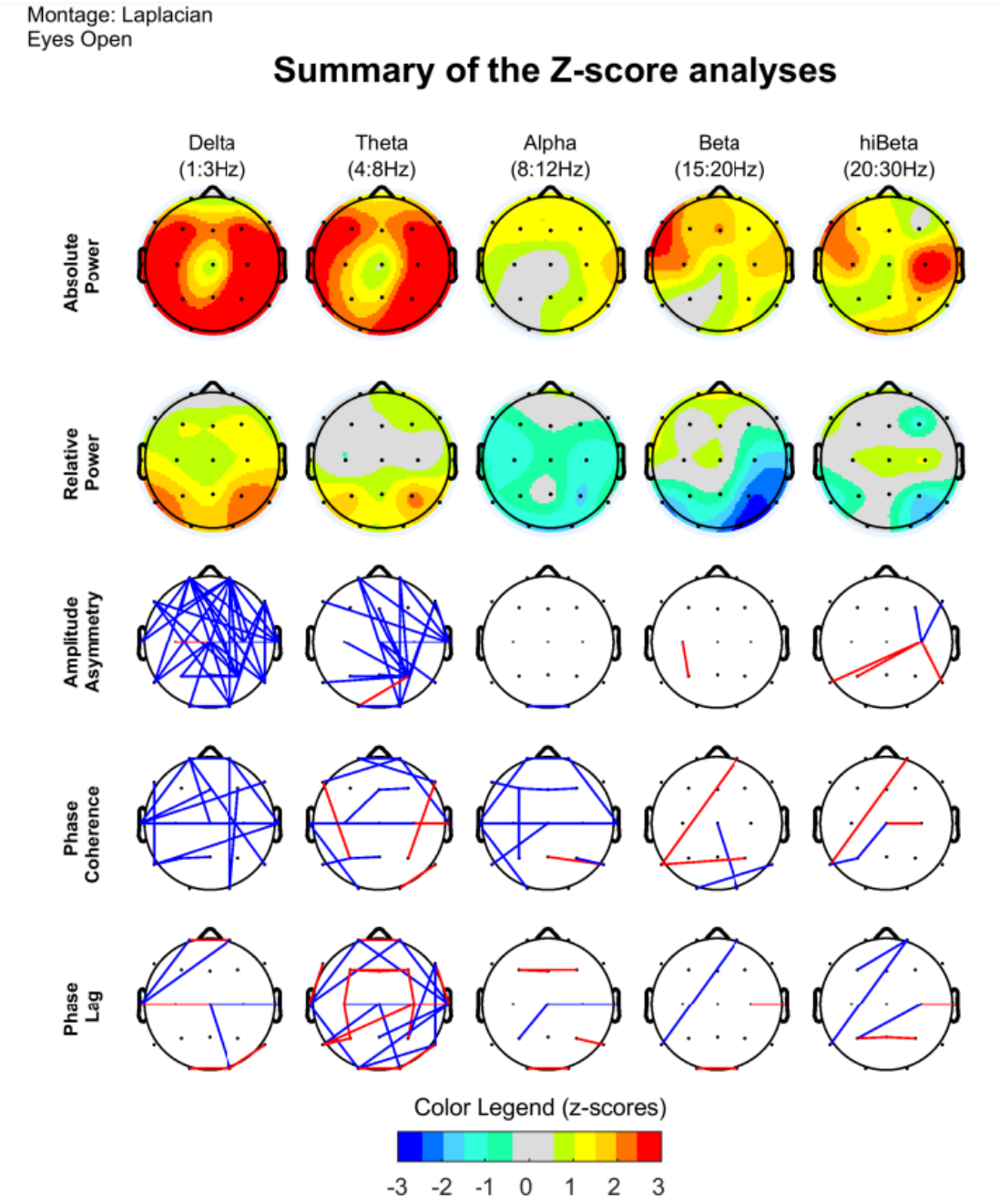
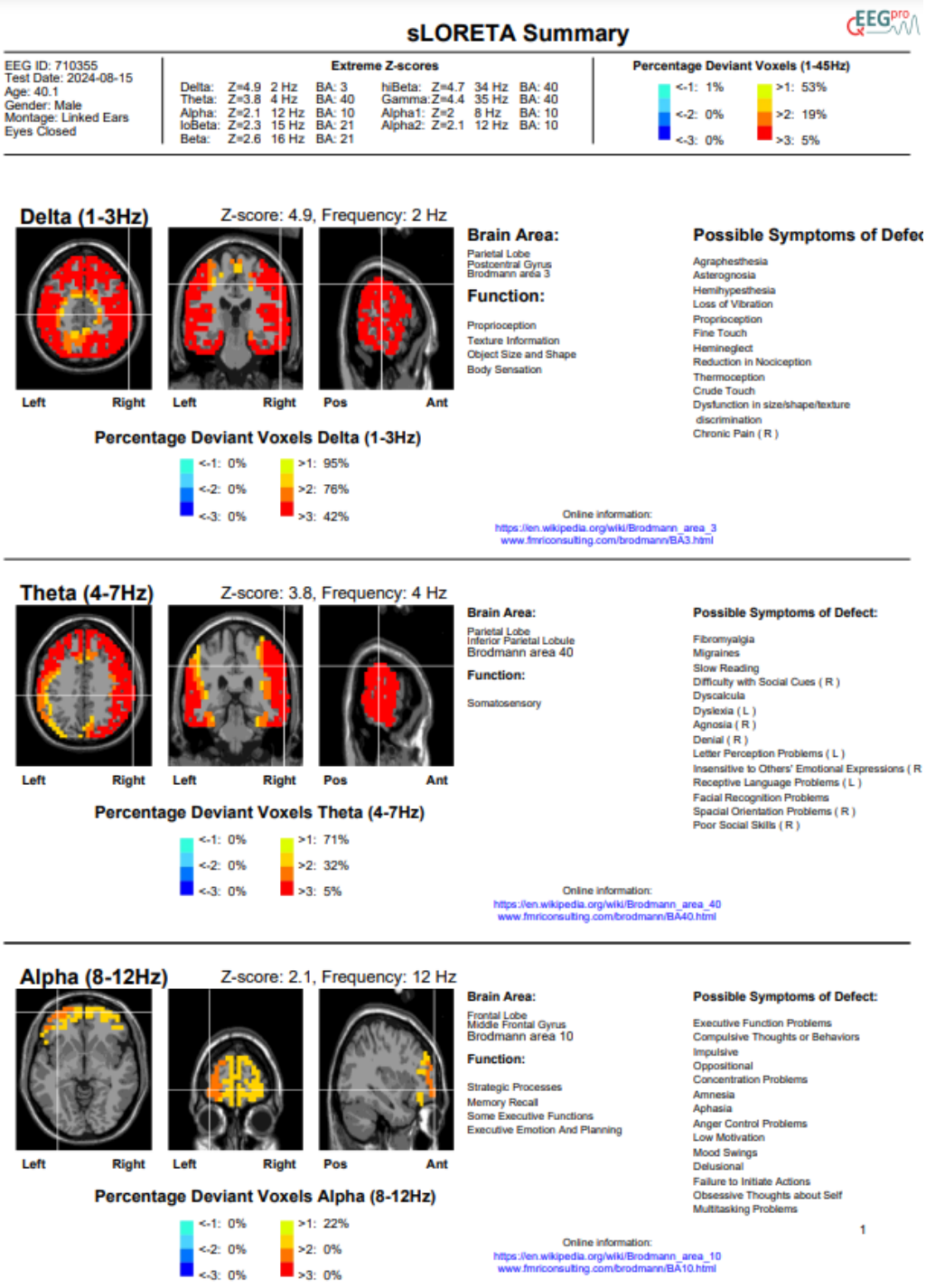


Image from Cortical Reports



sLORETA Summary

EEG ID: 710355
Test Date: 2024-08-15
Age: 40.1
Gender: Male
Montage: Linked Ears
Eyes Closed

Extreme Z-scores

Delta:	Z=4.9	2 Hz	BA: 3	hiBeta:	Z=4.7	34 Hz	BA: 40
Theta:	Z=3.8	4 Hz	BA: 40	Gamma:	Z=4.4	35 Hz	BA: 40
Alpha:	Z=2.1	12 Hz	BA: 10	Alpha1:	Z=2	8 Hz	BA: 10
loBeta:	Z=2.3	15 Hz	BA: 21	Alpha2:	Z=2.1	12 Hz	BA: 10
Beta:	Z=2.6	16 Hz	BA: 21				

Percentage Deviant Voxels (1-45Hz)

<-1: 1%
<-2: 0%
<-3: 0%
>1: 53%
>2: 19%
>3: 5%

Delta (1-3Hz)

Z-score: 4.9, Frequency: 2 Hz

Left Right Left Right Pos Ant

Brain Area:

Parietal Lobe
Postcentral Gyrus
Brodmann area 3

Function:

Proprioception
Texture Information
Object Size and Shape
Body Sensation

Possible Symptoms of Defec

Agraphesthesia
Asterognosia
Hemihypesthesia
Loss of Vibration
Proprioception
Fine Touch
Hemineglect
Reduction in Nociception
Thermoception
Crude Touch
Dysfunction in size/shape/texture discrimination
Chronic Pain (R)

Percentage Deviant Voxels Delta (1-3Hz)

<-1: 0%
<-2: 0%
<-3: 0%
>1: 95%
>2: 76%
>3: 42%

Online information:
https://en.wikipedia.org/wiki/Brodmann_area_3
www.fmriconsulting.com/brodmann/BA3.html

Theta (4-7Hz)

Z-score: 3.8, Frequency: 4 Hz

Left Right Left Right Pos Ant

Brain Area:

Parietal Lobe
Inferior Parietal Lobule
Brodmann area 40

Function:

Somatosensory

Possible Symptoms of Defect:

Fibromyalgia
Migraines
Slow Reading
Difficulty with Social Cues (R)
Dyscalcula
Dyslexia (L)
Agnosia (R)
Denial (R)
Letter Perception Problems (L)
Insensitive to Others' Emotional Expressions (R
Receptive Language Problems (L)
Facial Recognition Problems
Spacial Orientation Problems (R)
Poor Social Skills (R)

Percentage Deviant Voxels Theta (4-7Hz)

<-1: 0%
<-2: 0%
<-3: 0%
>1: 71%
>2: 32%
>3: 5%

Online information:
https://en.wikipedia.org/wiki/Brodmann_area_40
www.fmriconsulting.com/brodmann/BA40.html

Alpha (8-12Hz)

Z-score: 2.1, Frequency: 12 Hz

Left Right Left Right Pos Ant

Brain Area:

Frontal Lobe
Middle Frontal Gyrus
Brodmann area 10

Function:

Strategic Processes
Memory Recall
Some Executive Functions
Executive Emotion And Planning

Possible Symptoms of Defect:

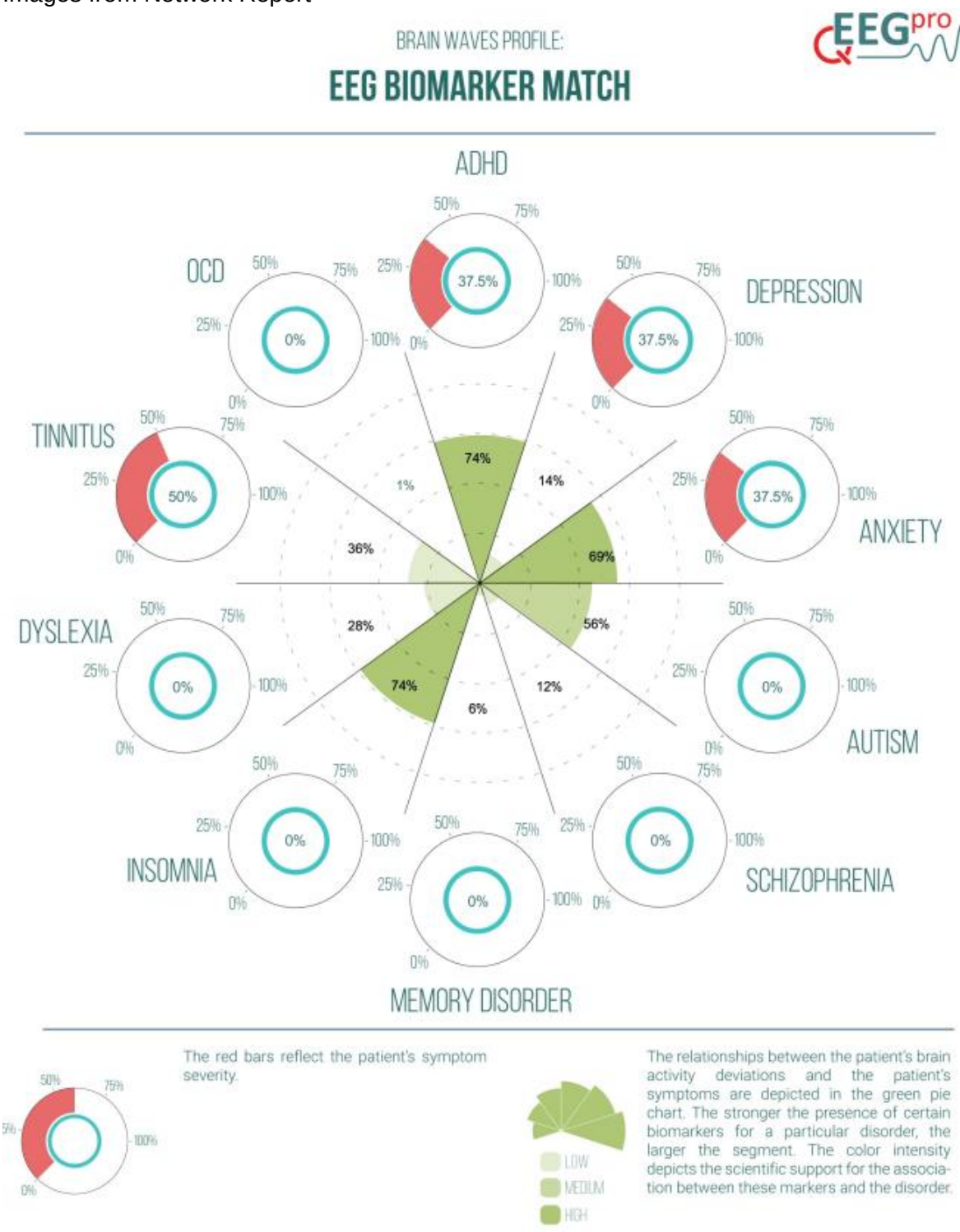
Executive Function Problems
Compulsive Thoughts or Behaviors
Impulsive
Oppositional
Concentration Problems
Amnesia
Aphasia
Anger Control Problems
Low Motivation
Mood Swings
Delusional
Failure to Initiate Actions
Obsessive Thoughts about Self
Multitasking Problems

Percentage Deviant Voxels Alpha (8-12Hz)

<-1: 0%
<-2: 0%
<-3: 0%
>1: 22%
>2: 0%
>3: 0%

Online information:
https://en.wikipedia.org/wiki/Brodmann_area_10
www.fmriconsulting.com/brodmann/BA10.html

Images from Network Report



THE DEFAULT MODE NETWORK

The Default Mode Network (DMN) is active during rest and is associated with self-reflective processes or mental simulation. Low DMN activity may reflect an inability to switch from a task-oriented state to a rest-oriented state. Abnormal DMN activity has been associated with a number of psychological disorders.

NETWORK ACTIVITY

The DMN consists of frontal brain areas that are known to be involved in higher executive functions such as working memory, planning and cognitive control. The Angular Gyrus is known to be involved in allocation of attention and the Posterior Cingulate Gyrus is associated with self-referential processes.

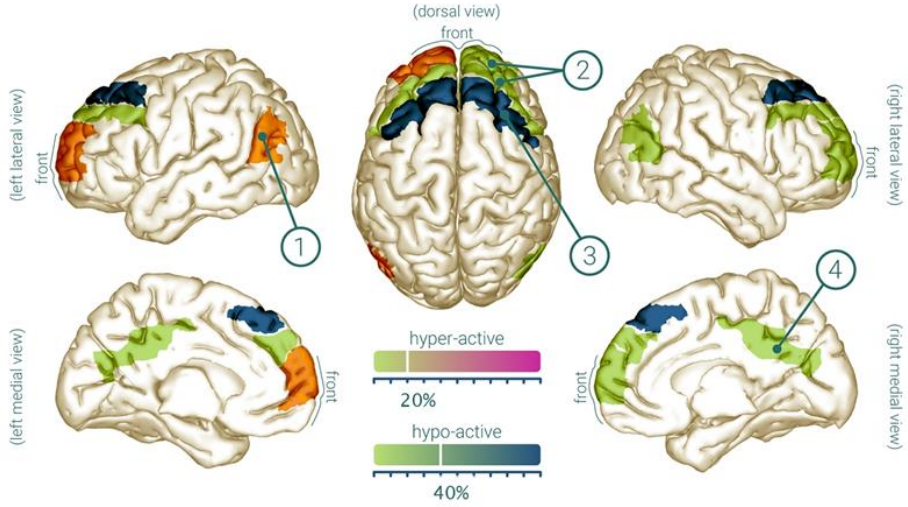
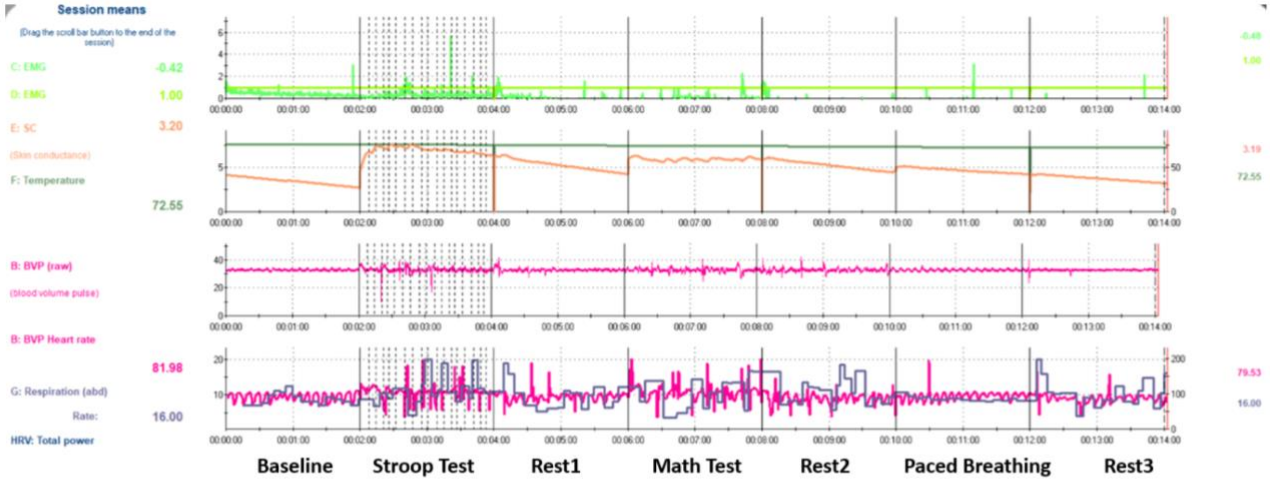


Image from Stress Test Report



	EMG (uV)	SC (uS)	Temp (F)	HR (beat/min)	Respiration (b/min)
Baseline	0.38	3.44	76.28	92.56	8.83
Stroop Test	0.25	6.92	75.77	106.09	11.40
Rest1	-0.04	5.25	75.11	93.44	9.76
Math Test	-0.07	5.92	74.33	107.17	10.36
Rest2	-0.02	5.24	73.74	88.85	10.77
Paced Breathing	-0.24	4.66	73.02	95.20	8.71
Rest3	-0.42	3.75	72.63	88.97	10.28

Cognitive Processing Report

Age: 62	Language: English (United States)	
Total Test Time: 33:25 (min:secs)	CNSVS Duration 33:24 (min:secs)	Version 4.0.107

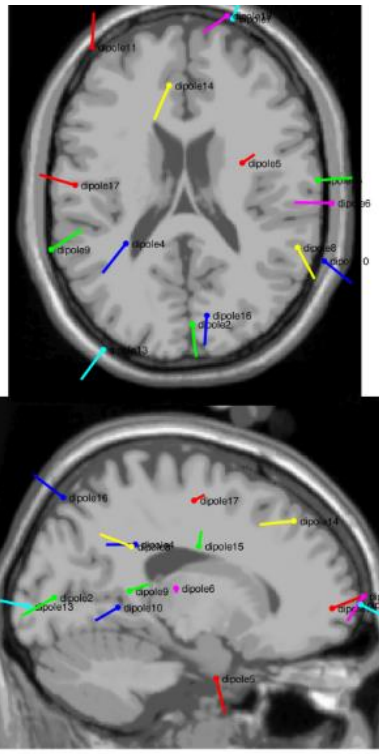
Patient Profile	**Percentile Range**				**> 74**	**25 - 74**	**9 - 24**	**2 - 8**	**< 2**
	Standard Score Range				**> 109**	**90 - 109**	**80 - 89**	**70 - 79**	**< 70**
Domain Scores	**Patient Score**	**Standard Score**	**Percentile**	**VI****	**Above**	**Average**	**Low Average**	**Low**	**Very Low**
Composite Memory	102	113	81	Yes	X				
Verbal Memory	55	115	84	Yes	X				
Visual Memory	47	107	68	Yes		X			
Reaction Time*	707	100	50	Yes		X			
Cognitive Flexibility	31	95	37	Yes		X			
Processing Speed	40	95	37	Yes		X			
Executive Function	32	94	34	Yes		X			
Working Memory	-1	68	1	No					X
Sustained Attention	19	85	16	No			X		

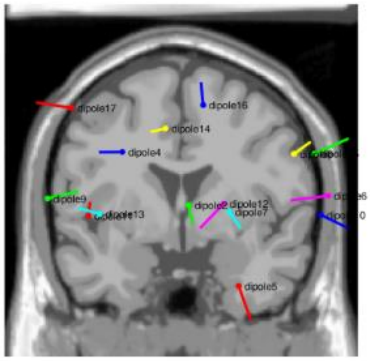
Domain Dashboard: Above average domain scores indicate a standard score (SS) greater than 109 or a Percentile Rank (PR) greater than 74, indicating a high functioning test subject. Average is a SS 90-109 or PR 25-74, indicating normal function. Low Average is a SS 80-89 or PR 9-24 indicating a slight deficit or impairment. Below Average is a SS 70-79 or PR 2-8, indicating a moderate level of deficit or impairment. Very Low is a SS less than 70 or a PR less than 2, indicating a deficit and impairment. Reaction times are in milliseconds. An * denotes that "lower is better", otherwise higher scores are better. Subject Scores are raw scores calculations generated from data values of the individual subtests.

VI** - Validity Indicator: Denotes a guideline for representing the possibility of an invalid test or domain score. "No" means a clinician should evaluate whether or not the test subject understood the test, put forth their best effort, or has a clinical condition requiring further evaluation.

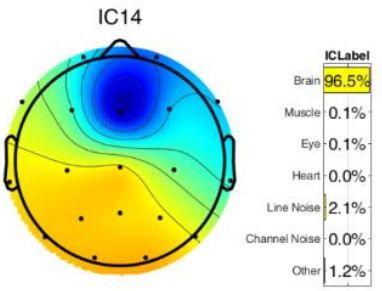
Verbal Memory Test (VBM)	**Score**	**Standard**	**Percentile**	
Correct Hits - Immediate	13	108	70	Verbal Memory test: Subjects have to remember 15 words and recognize them in a field of 15 distractors. The test is repeated at the end of the battery. The VBM test measures how well a subject can recognize, remember, and retrieve words e.g. exploit or attend literal representations or attribute. "Correct Hits" refers to the number of target words recognized. Low scores indicate verbal memory impairment.
Correct Passes - Immediate	14	98	45	
Correct Hits - Delay	13	115	84	
Correct Passes - Delay	15	109	73	
Visual Memory Test (VSM)	**Score**	**Standard**	**Percentile**	
Correct Hits - Immediate	15	122	93	Visual Memory test: Subjects have to remember 15 geometric figures, and recognize them in a field of 15 distractors. The test is repeated at the end of the battery. The VSM test measures how well a subject can recognize, remember, and retrieve geometric figures e.g. exploit or attend symbolic or spatial representations. "Correct Hits" refers to the number of target figures recognized. Low scores indicate visual memory impairment.
Correct Passes - Immediate	10	93	32	
Correct Hits - Delay	15	123	94	
Correct Passes - Delay	7	83	13	
Symbol Digit Coding (SDC)	**Score**	**Standard**	**Percentile**	
Correct Responses	42	96	40	The SDC test measures speed of processing and draw upon several cognitive processes simultaneously, such as visual scanning, visual perception, visual memory, and motor functions. Errors may be due to impulsive responding, misperception, or confusion.
Errors*	2	92	30	
Stroop Test (ST)	**Score**	**Standard**	**Percentile**	
Simple Reaction Time*	382	87	19	The ST measures simple and complex reaction time, inhibition / disinhibition, mental flexibility or directed attention. The ST helps assess how well a subject is able to adapt to rapidly changing and increasingly complex set of directions. Prolonged reaction times indicate cognitive slowing / impairment. Errors may be due to impulsive responding, misperception, or confusion.
Complex Reaction Time Correct*	714	92	30	
Stroop Reaction Time Correct*	699	107	68	
Stroop Commission Errors*	1	103	58	
Shifting Attention Test (SAT)	**Score**	**Standard**	**Percentile**	
Correct Responses	43	95	37	The SAT measures executive function or how well a subject recognizes set shifting (mental flexibility) and abstraction (rules, categories) and manages multiple tasks simultaneously. Subjects have to adjust their responses to randomly changing rules. The best scores are high correct responses, few errors and a short reaction time. Normal subjects may be slow but accurate, or fast but not so accurate. Attention deficit may be apparent.
Errors*	11	94	34	
Correct Reaction Time*	1099	105	63	

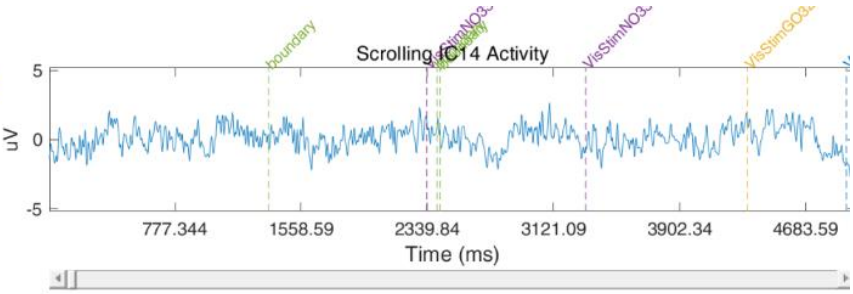
Images from Event Related Potentials (ERP) Report



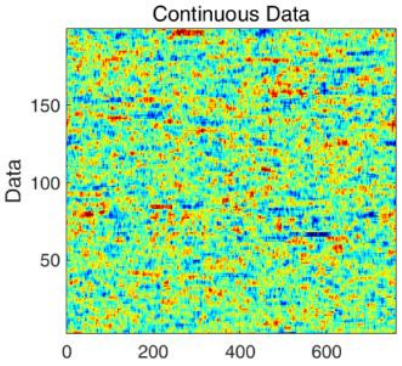


Comp. 2 (RV:0.63%; Tal:4,-81,9)
Comp. 4 (RV:1.55%; Tal:-30,-39,32)
Comp. 5 (RV:3.30%; Tal:29,-2,-30)
Comp. 6 (RV:1.89%; Tal:74,-20,10)
Comp. 7 (RV:11.08%; Tal:24,71,-2)
Comp. 8 (RV:1.75%; Tal:57,-41,31)
Comp. 9 (RV:0.63%; Tal:-67,-43,10)
Comp. 10 (RV:2.13%; Tal:70,-49,3)
Comp. 11 (RV:6.50%; Tal:-47,56,-3)
Comp. 12 (RV:2.83%; Tal:21,72,2)
Comp. 13 (RV:9.99%; Tal:-41,-93,5)
Comp. 14 (RV:5.93%; Tal:-8,39,39)
Comp. 15 (RV:5.95%; Tal:67,-8,29)
Comp. 16 (RV:4.23%; Tal:11,-74,56)
Comp. 17 (RV:6.82%; Tal:-55,-9,51)





% scalp data var. accounted for: 1.5%



RMS uV per scalp channel