Resilience Research Initiative

#FindingHopeandPurposeTogether #lifeaidhope

Mission: Suicide Prevention by Improving Health and Resilience.

Goal: My Brain, My Health, My Resilience
Creating a bridge between technology and brain health to treat injuries vs. symptoms. **Life Aid Research Institute** seeks to improve brain health by researching and validating emerging technology and functional medicine therapies in order to create new treatment protocols. The whole health approach empowers resilience by combining peer support, technology, functional medicine, and community activation that will reduce suicide in military, veterans and first responders. This integrative therapy, evidence based, approach utilizes objective quantitative analysis using data from before and after brain imaging. This uniquely comprehensive approach will start saving and improving the quality of lives NOW!

Why: Many of these heroes currently suffer from a reoccurring complex pattern of isolation, cardiometabolic & neuroendocrine disorders, mental health, chronic pain, and sleep disorders that are the result of unique predispositions, vulnerabilities, occupational exposures, and lifestyle factors. These can be systematically identified and addressed in a way that empowers the patient to reclaim and own their health – but we need a structured and validated approach to harness the scope and potency of such a solution.

How: Restructuring the way we deliver mental health therapies using innovative solutions to promote Holistic Brain Health & Suicide Prevention, addressing the root of the problem, not merely the symptom. This population deserves brain health check-ups at regular intervals to detect the need for resilience training, thus improving global health and preventing suicide.

Complementary Neuropsychiatry for Veterans Experiencing Rehabilitation without Technology Study "CONVERT Study"

Taking a Person-Oriented Medical Approach to patients with invisible wounds from various signature Brain Injuries diagnosed by the VA—mainly TBI, PTSD, and/or concussion.

Issue:
20+ Veterans a day commit suicide;
Police & Firefighters are more likely to die by suicide than in the line of duty. In 2017, there were 103 firefighter suicides and 140 police officer suicides

Clinical Practice Study

Our Pilot Project, proof of concept, builds on previous studies that have shown the utility of imaging to enhance proper diagnosis when attempting to distinguish PTSD and TBI in the veteran population. We hope to conclusively show that adding Imaging to the traditional model practiced at the VA would significantly increase diagnostic accuracy and treatment effectiveness within the veteran population. The goal of this project is to show the objective use of imaging as a way to measure brain health improvement from an intervention using imaging data analysis.

This ultimately will translate to a significant reduction in veteran suicide rates and reduced total mental health spending (from improper diagnosis, medication/treatment trial and error, hospitalizations, disability benefits, etc.).

Goal: My Brain, My Health, My Resilience

Creating a bridge between technology and brain health to treat injuries vs. symptoms. It seeks to establish a new platform and protocol of care that will significantly reduce suicides, by improving health outcomes, and empower resilience for military, veterans, first responders, and their families by combining peer support, technology, functional medicine, and community activation compared to the current Veterans Administration PTSD/TBI healthcare model.

How: Restructuring the way that we intervene for mental health by implementation of innovative solutions to address Holistic Brain Health & Suicide Prevention by addressing the root of the problem rather than just the symptom.

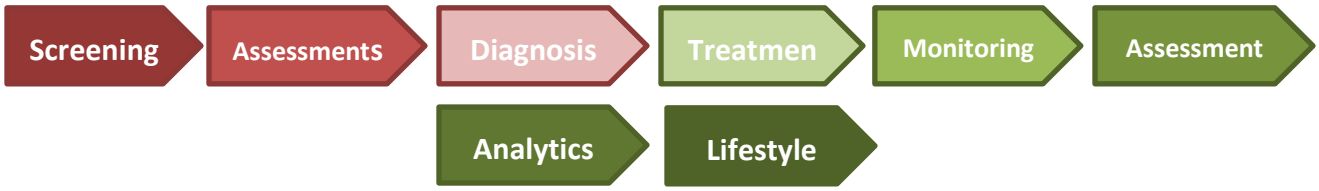
The approach will utilize brain imaging and lifestyle assessments, functional medicine evaluations, social network platforms and other technologies to deliver personalized action plans, peer support, and professional coaching to help them address the health of their brain and body (undo damage and support optimal function). This protocol could be adopted by DoD and VA as an evidence based method of predicting those at risk and preventing further deterioration of brain and body health increasing readiness and decreasing risk of co-morbidity health concerns.

Adding Neurological imaging to the traditional model practiced at the VA would significantly increase diagnostic accuracy and treatment effectiveness for veterans with mental health conditions while simultaneously reducing the high burden that comes from improper diagnosis and treatments. This ultimately will translate to a significant reduction in veteran suicide rates and reduced total mental health spending from improper diagnosis or medication/treatment trial and error, hospitalizations, preventable disability, etc.

Working Group:

Travis Dalton – President, Cerner -Government Services
Dr. Chris Whitlow – Wake Forest University Research – Functional Medicine and Imaging
Dr. Daniel Amen – CEO Amen Clinics
Dr. Jon Fellus - Founder/CMO NeuQ --Clinician expert in TBI/concussion and Suicide; pharm/nutra/electroceuticals
Matt Crawford - Advanced NeuroCare
Jim Hart – CEO NeuQ
Dr. Rebecca Siegel – Clinician – Functional Medicine expert
Dr. Melissa Quinn – Clinican - Functional Medicine expert
Robb Gorton – Cerner Director and Pharmacy Executive
John Wordin – Founder and Chairman – Life Aid

The Life Aid CONVERT Study will identify and quantify patient-specific factors important when formulating a targeted and personalized treatment plan in each participant. Promising pilot data suggest this approach will result in significantly improved treatment outcomes including decreased suicide rates.



Study Phases

Identify Study participants using defined patient experience and registries
Assess current state of participants thru imaging
Categorize based on assessment
Create personalized treatment plan utilizing LIFE AID CLI
Begin Personalized treatment plan using study modalities
Monitor treatment progress
Assess how we did
Analytical analysis of outcomes

Goals for Study are:

- Analysis of before and after data to determine effectiveness of the process and any statistical significance
- Significantly improve brain function underlying resilience
- Create a predictive model that improves diagnostic accuracy for future cohorts
-Populate a database that will eventually drive therapeutic efficiency thru artificial intelligence tracking and optimization of outcome
- Evaluate feasibility of scaling to larger populations

PROCESS/PROTOCOL of STUDY

1. **Identify Study participants using defined patient experience and available registries**

Participant Inclusion Criteria

Ages: No restrictions
Gender: M/F
Group: Military Veterans, or first responders who've served and been diagnosed by the VA or similar for TBI, PTSD, Concussion or some or all between years 1990-91 (Iraq & Kuwait) and 2002–2018 (Iraq, Kuwait, Afghanistan, Uzbekistan, Kyrgyzstan, Africa, Pakistan, USA, and Syria). No restrictions on life stage at time of outcome assessment.

Note: We list the beginning and ending dates for the "periods of war" found in Title 38 of the Code of Federal Regulations, dealing with the Department of Veterans Affairs (VA). Inclusion criteria pertaining to service in military capacity per DoD regulations for 3-months continued service in one of the countries listed above, obtaining award for service during specified time frame.

Psychiatric Disorders: Diagnosis of Traumatic Brain Injury, Post Traumatic Stress Disorder, Major Depressive Disorder, Suicidal Ideation +

Medical Clearance: Required.

Participant Exclusion Criteria

The following are conditions that preclude participation: Pregnancy or breast feeding, organ transplants (anti-rejection medications rendered ineffective), certain heart conditions including pacemaker/defibrillator devices, hemophilia, end-stage renal pathology, epilepsy, thermo-regulation inhibitors, and complete ambulatory disability. Skull deformity or history of Thoracic Surgery.

2. **Assess current state of participants thru imaging**
   Imaging/screening tools: Spect Scan, qEEG
   Tools: Brain imaging to help diagnose and establish a baseline

3. **Categorize based on assessment**

Objective data evaluations (using imaging Phenotypes) will determine how to categorize based upon similar pathological patterns that will emerge rather than solely relying on medical history.

4. **Create personalized treatment plan utilizing: Current VA treatment path vs. Life Aid Personalized Treatment**

   Tools: Life Aid DEN/CLI
   Combine peer support, functional medicine, technology, and community activation to improve health and empower resilience, resulting in better outcomes for the targeted population.
   Diet, Nutrition, Exercise
   Hyberbaric Therapy

5. **Monitor treatment progress**
   Diet, Nutrition, Exercise, Supplements, HBOT, Yoga, Immersion Therapy, Cannabis (smoke)

6. **Assess how we did using imaging screening tools.**

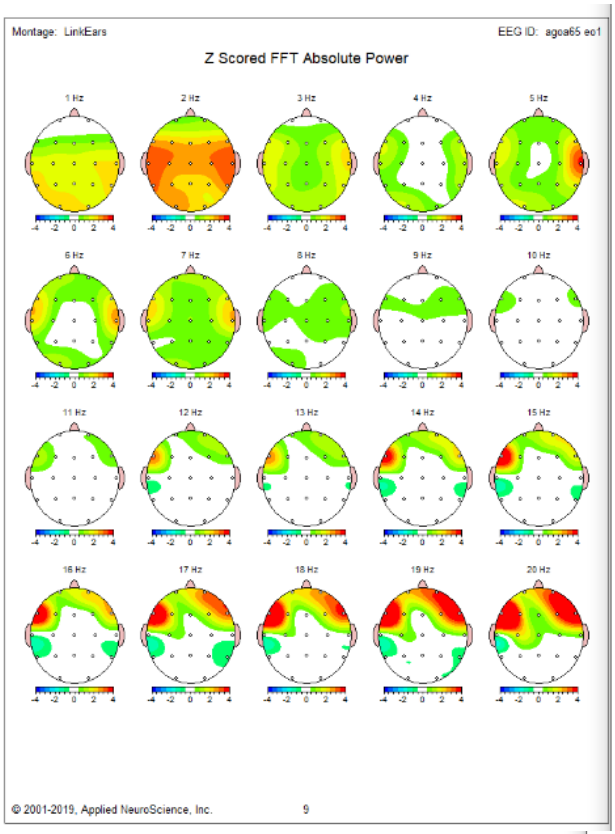
Results:

Participant Female 65
Army
Diet, Nutrition, Exercise, Supplements

Eyes Open
Absolute Power: Delta and Theta have improved 2-3 SD, to "normal." Alpha has mildly increased from 2 SD, 2.5 SD at 7 hz, Beta and High Beta have globally improved.
Amplitude Asymmetry: Global improvements across all bands.
Coherence: Global improvements across all bands.

Eyes Open - Absolute Power			
Hz	**AOI**	**Before**	**After**
1 hz	Temporal-Occipital, Left	2 SD	0 SD
2 hz	Temporal, Bilateral	3 SD	0 SD
3 hz	Temporal, Bilateral	2 SD	0 SD
5 hz	Temporal, Right	3 SD	1.5 SD

7 hz	Temporal, Bilateral	2 SD	2.5 SD
14-15 hz	Frontal-Temporal, Left	4 SD	1 SD
16-20 hz	Frontal-Temporal, Left	4 SD	0 SD
17 hz	Frontal, Right	3 SD	2 SD
18-20 hz	Frontal, Right	4 SD	1.5 SD
21-25 hz	Frontal-Temporal, Bilateral	4 SD	0 SD
26 hz	Frontal-Temporal, Bilateral	4 SD	0 SD
26 hz	Frontal-Parietal, Bilateral	2 SD	1 SD
27-28 hz	Global	3 SD - 4 SD	0 SD - 2 SD
29-30 hz	Global	3 SD - 4 SD	0 SD - 4 SD
Eyes Open - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Theta	F7 - Fz, F7 - C3	mild hypo-	mild hypo-
Theta	F7 - Cz	moderate hyper-	mild hyper-
Alpha	F7 - Fp1	mild hypo-	mild hypo-
Beta	Global	moderate hyper-	normal
Beta	F7 - O1, F8 - O2	moderate hypo-	normal
High Beta	Global	moderate hyper-	normal
High Beta	F7 - O1, F8 - O2	moderate hypo-	normal
Eyes Open - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Global	severe hyper-	mild hyper- at F8, otherwise normal
Theta	Frontal-Occipital, Bilateral	severe hyper-	normal
Beta	F3 - F8	moderate hypo-	normal
High Beta	F7-F8	moderate hypo-	normal
High Beta	Fp1 - O2	mild hypo-	mild hyper-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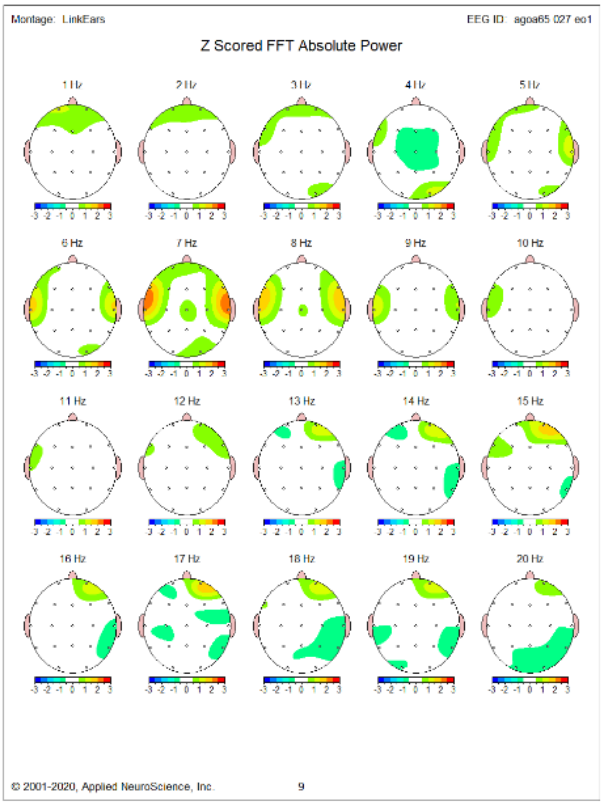
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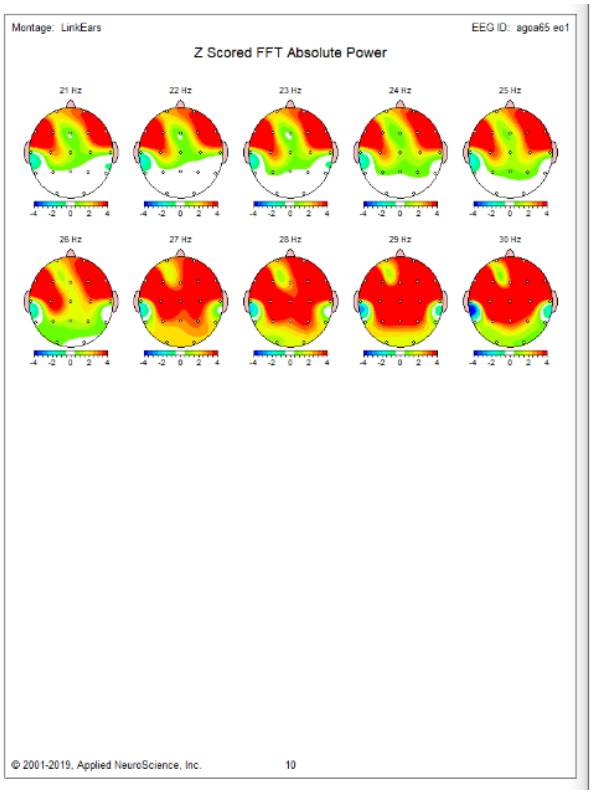
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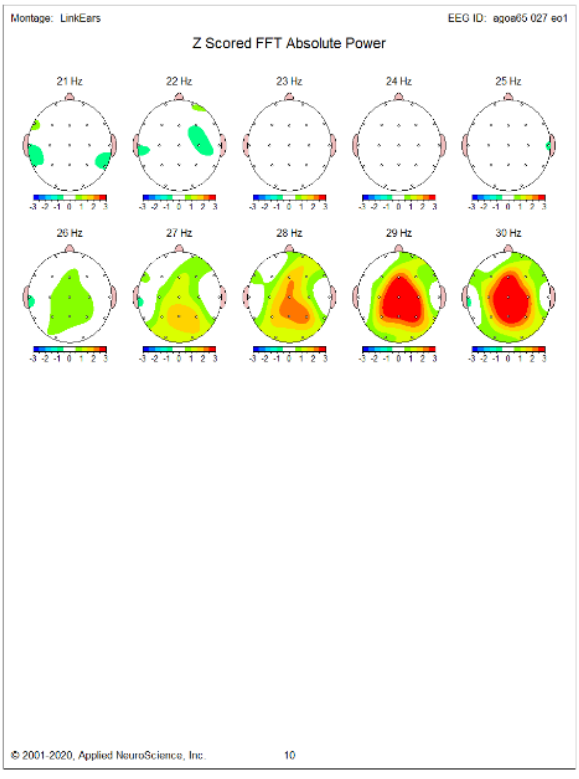
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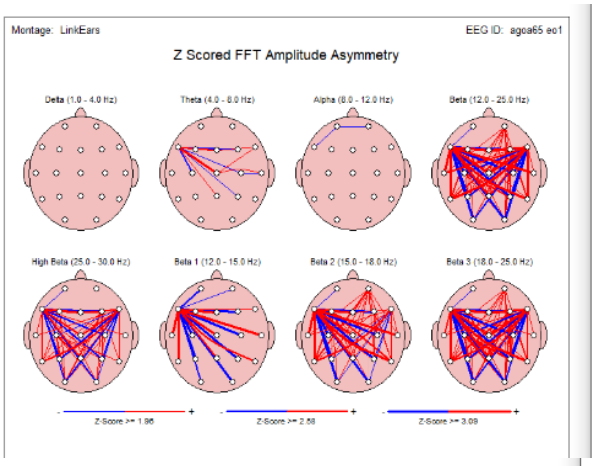
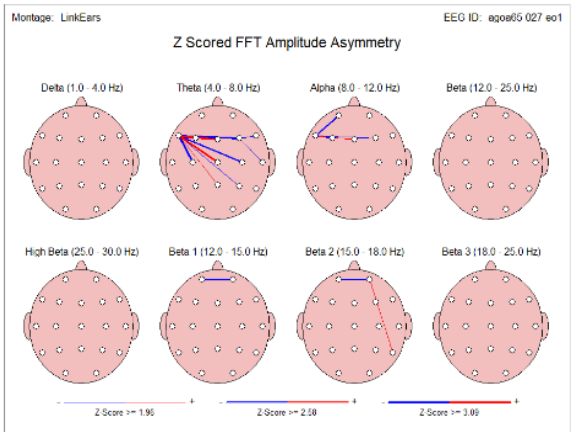
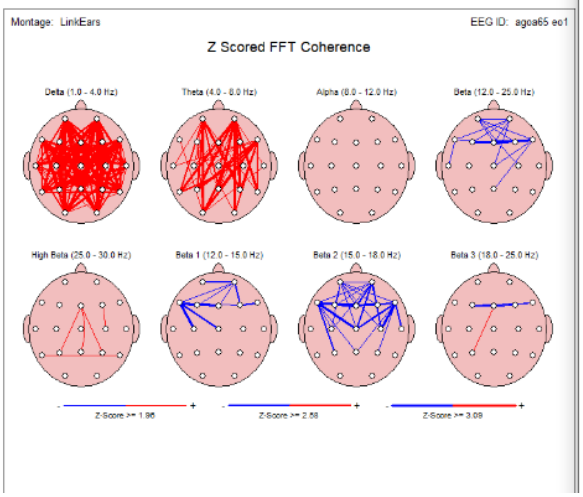
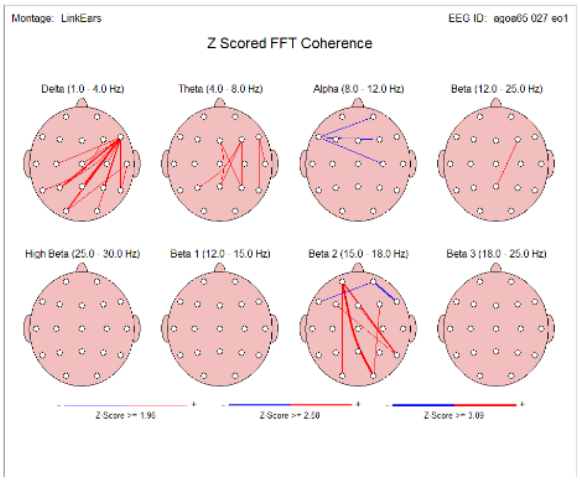








Eyes Closed

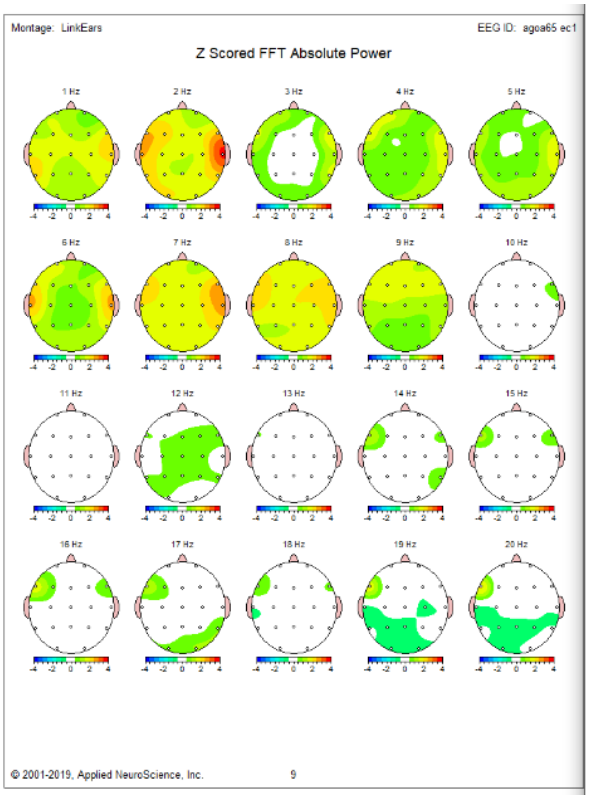
Absolute Power: Temporal delta and theta remain heightened. Alpha and beta have globally increased since the previous scan.

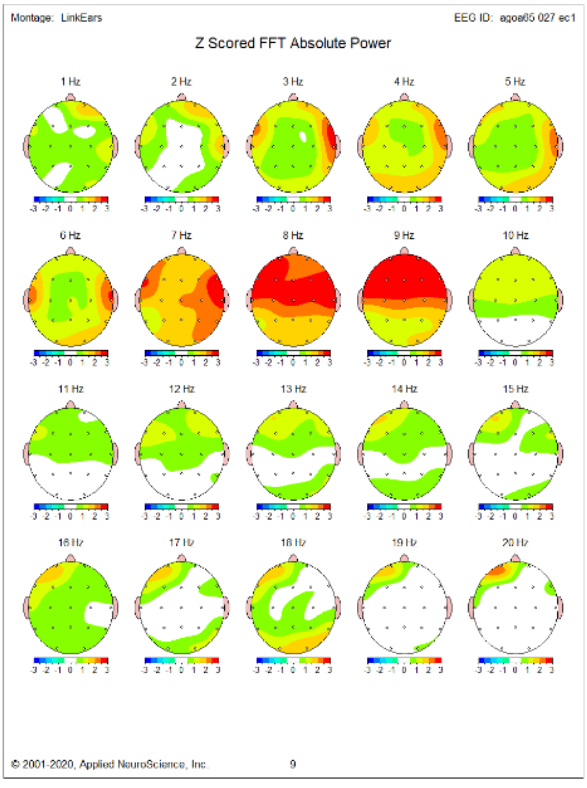
Amplitude Asymmetry: The moderate asymmetry in beta and high beta in the previous scan has improved.

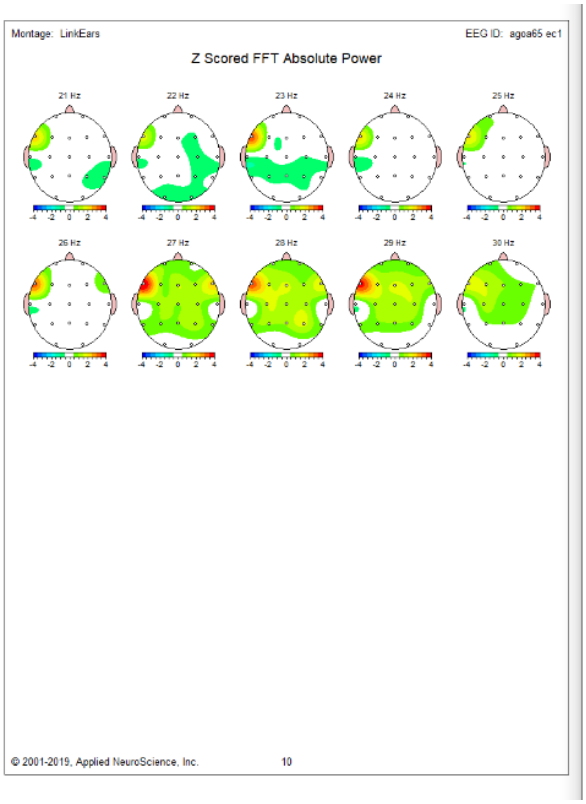
Coherence: Delta band's hypercoherence has improved. Beta and high beta's hypocherence have improved.

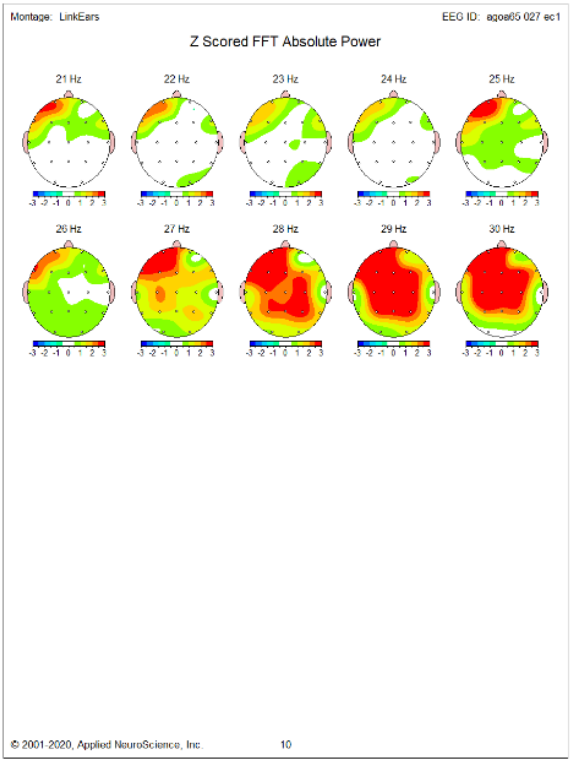
Eyes Closed - Absolute Power			
Hz	**AOI**	**Before**	**After**
2 hz	Temporal, Bilateral	3 SD - 4 SD	2 SD
3-5 hz	Temporal-Occiptal	2 SD	3 SD
6-9 hz	Temporal-Frontal, Bilateral	3 SD	4 SD
14-20 hz	Frontal, Left	1.5 SD	2.5 SD
17 hz	Occipital, Right	1.5 SD	2 SD
19-20 hz	Parietal-Occipital	-1 SD	0 SD
21-30 hz	Frontal, Left	2 SD - 4 SD	2 SD - 4 SD
27-30 hz	Frontal-Parietal, Bilateral	2 SD	2 SD - 4 SD

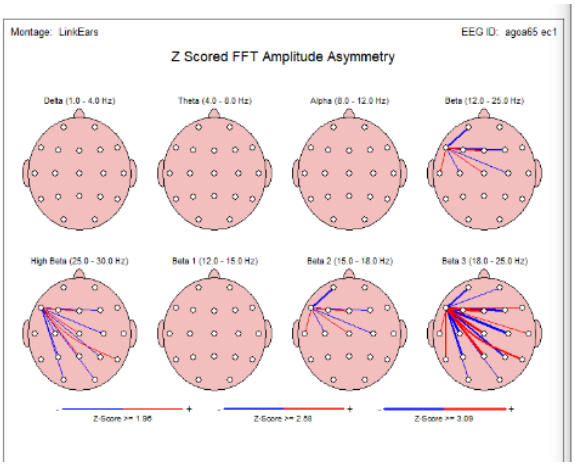
Eyes Closed - Amplitude Asymmetry			
Delta	Fp2	normal	mild hyper-
Alpha	T6	normal	mild hyper-
Beta	F7 - F4, F7 - Fp1	moderate hypo-	normal
High Beta	F7 - C4, F4, P3	moderate hypo-	mild hypo-
High Beta	F7 - Pz, Fz	moderate hyper-	normal
Eyes Closed - Coherence			
Delta	Global	severe hyper-	moderate hyper-
Beta	F7 - Fp1, Fp2	moderate hypo-	mild hypo-
High Beta	F7 - F3, Fp1, Fp2	moderate hypo-	mild hypo-

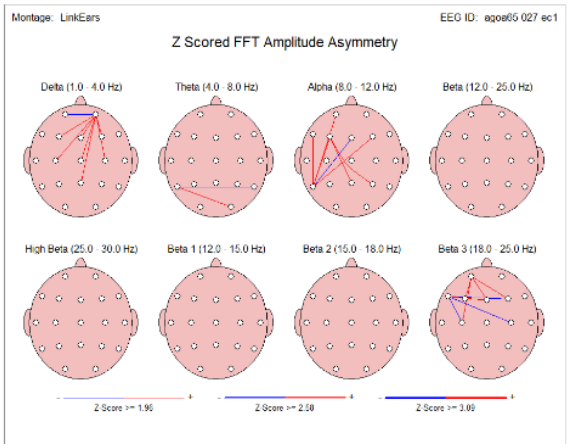








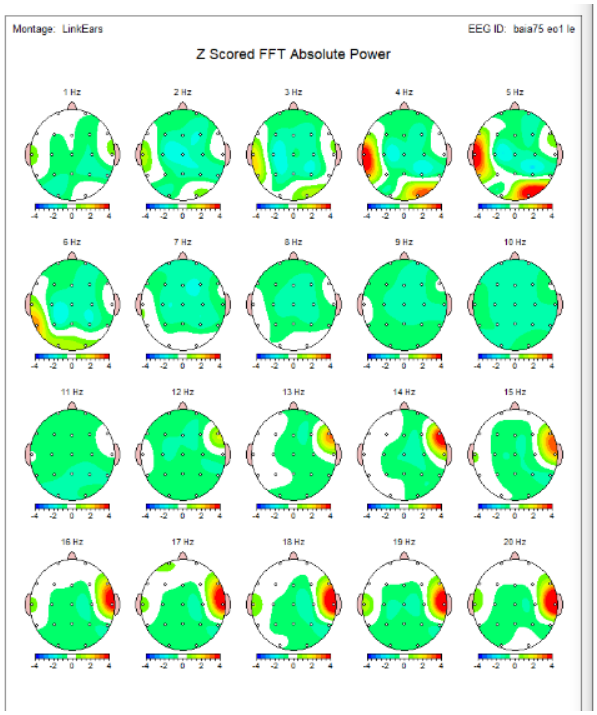




Particiapnt : Male 75
First Responder
Diet, Nutrition, Exercise, HBOT, Supplements

Eyes Open
Absolute Power: Improvement across all bands. Delta, theta and alpha have improved up to 5 SD in some areas. The heightened frontal-temporal high beta in the previous scan has improved up to 4 SD.
Amplitude Asymmetry: Improvement across all bands.
Coherence: Improvement across all bands.

Eyes Open - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-2 hz	Frontal-Parietal, Bilateral	-2 SD	-0.5 - 0 SD
3 hz	Temporal, Left	2 SD	-1 SD
3 hz	Frontal-Parietal, Bilateral	-2 SD	-2.5 SD
4-5 hz	Temporal, Left and Occipital, Right	4 SD	-1 SD
6 hz	Temporal-Occipital, Left	3 SD	1 SD
7-12 hz	Global	-2 SD	-1 SD
14-20 hz	Frontal-Temporal, Right	4 SD	0 SD - 2 SD
21-30 hz	Frontal-Temporal, Right	4 SD	2 SD - 3 SD
Eyes Open - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Delta	Temporal-Parietal, Left	moderate hypo-	normal
Theta	Global	moderate hypo-	normal
Alpha	F8 - Fp1, Fp2	moderate hypo-	normal
Beta	Temporal-Parietal, Right	moderate hypo-	normal
High Beta	Temporal-Parietal, Right	moderate hypo-	normal
Eyes Open - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Occipital, Bilateral	moderate hypo-	normal
Theta	Global	moderate hypo-	normal
Alpha	Frontal, F7-F8	mild hypo-	normal
Beta	F8 - F3	moderate hypo-	normal
High Beta	F8 - F3	moderate hypo-	normal
High Beta	F3 - O1, O2	mild hyper-	mild hyper-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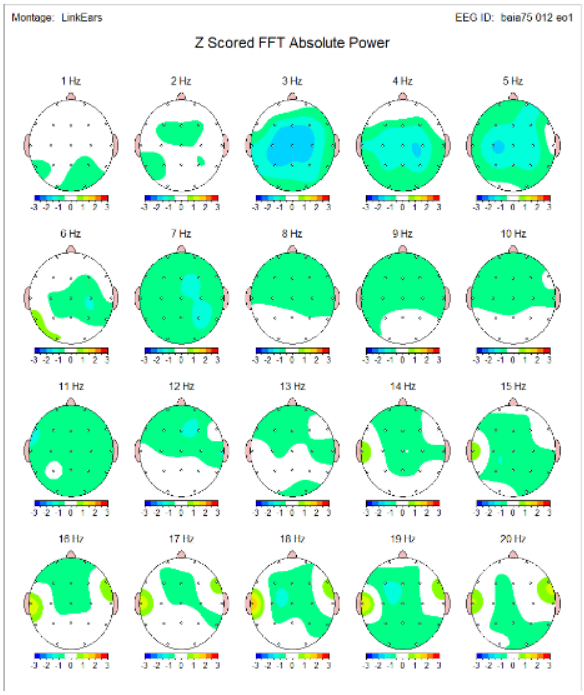
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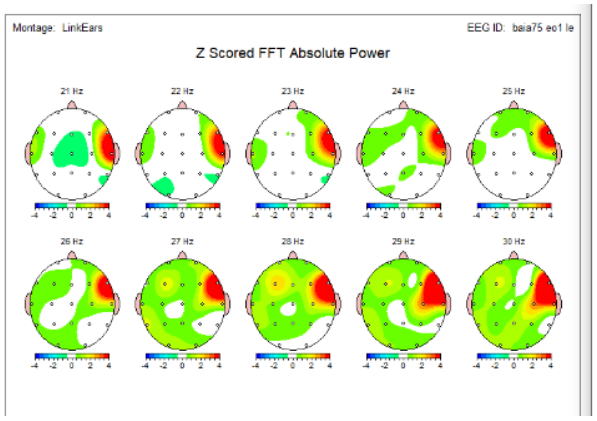
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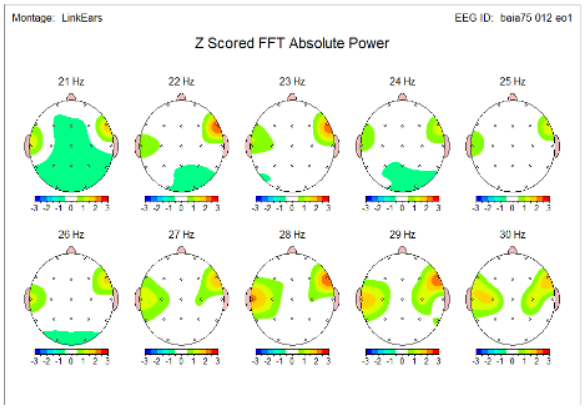
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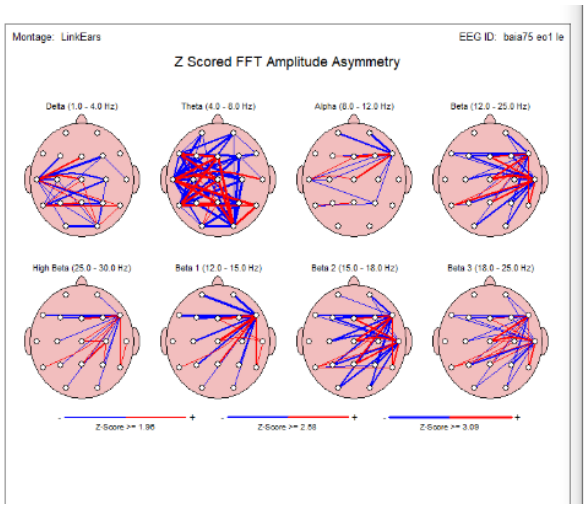
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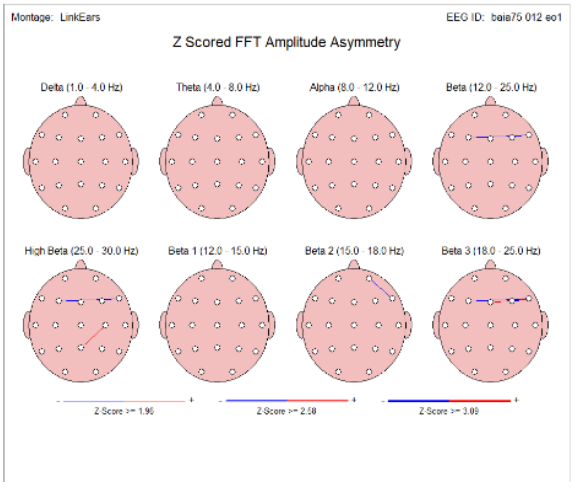
Z Scored FFT Amplitude Asymmetry
Delta (1.0 - 4.0 Hz)
Theta (4.0 - 8.0 Hz)
Alpha (8.0 - 12.0 Hz)
Beta (12.0 - 25.0 Hz)
High Beta (25.0 - 30.0 Hz)
Beta 1 (12.0 - 15.0 Hz)
Beta 2 (15.0 - 18.0 Hz)
Beta 3 (18.0 - 25.0 Hz)
Z-Score >= 1.96
Z-Score >= 2.58
Z-Score >= 3.09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Delta (1.0 - 4.0 Hz)
Theta (4.0 - 8.0 Hz)
Alpha (8.0 - 12.0 Hz)
Beta (12.0 - 25.0 Hz)
High Beta (25.0 - 30.0 Hz)
Beta 1 (12.0 - 15.0 Hz)
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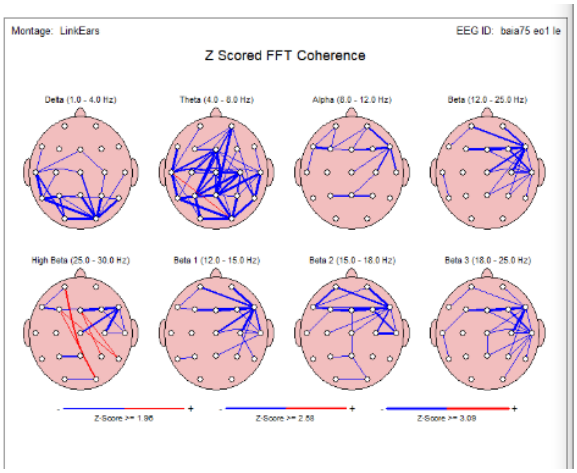
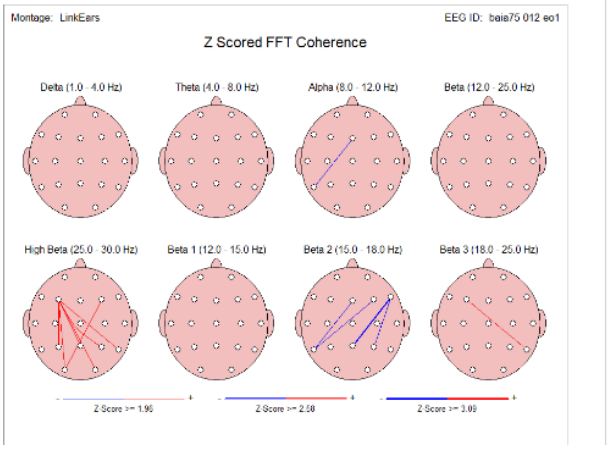
Beta 3 (18.0 - 25.0 Hz)
Z-Score >= 1.96
Z-Score >= 2.58
Z-Score >= 3.09





Eyes Closed

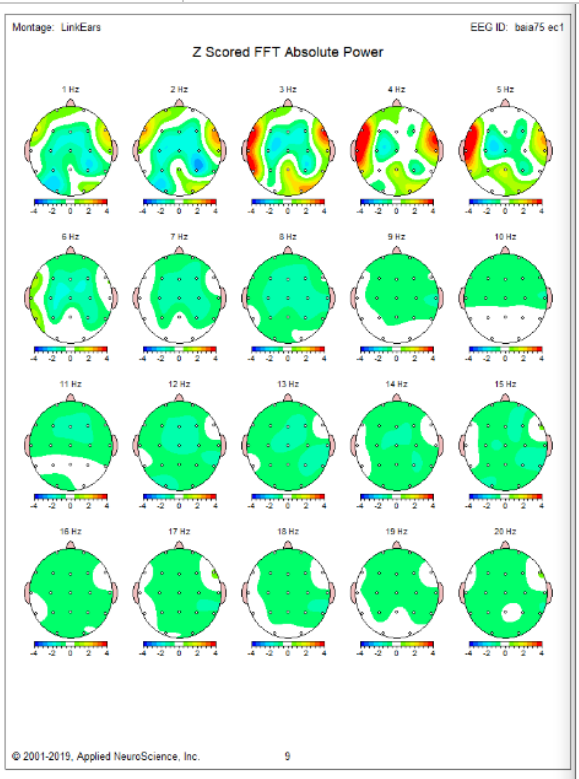
Absolute Power: Delta and theta bands have improved. Alpha has improved in the frontal and parietal lobes, but has concentrated itself posteriorly at 8hz and 9hz. Beta and high beta have improved overall.

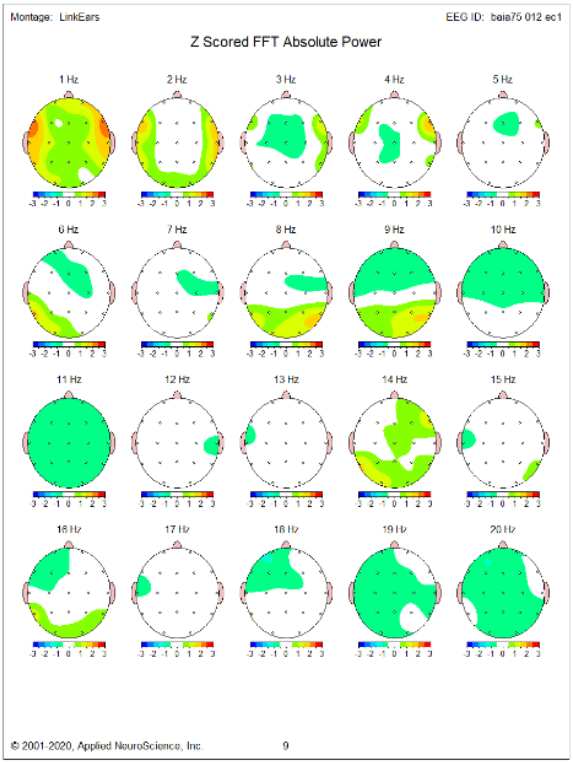
Amplitude Asymmetry: Delta and theta bands have improved to "normal," beta has also improved.

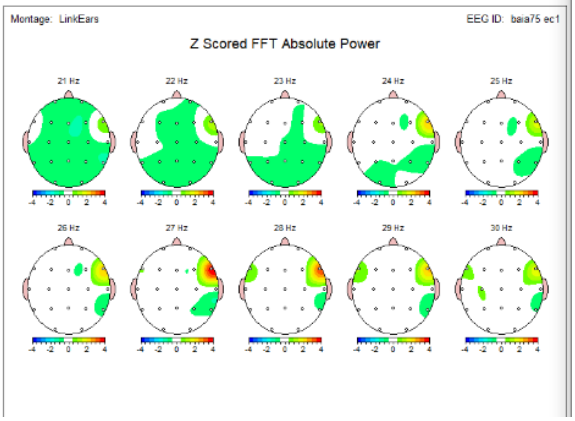
Coherence: Improvement across all bands.

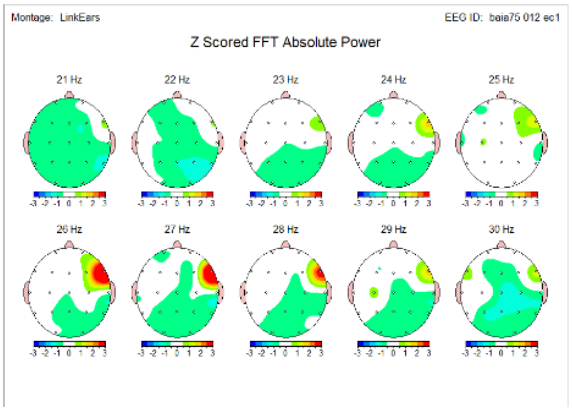
Eyes Closed - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-4 hz	Frontal-Parietal, Bilateral	-2 SD	-1 SD
2-5 hz	Parietal-Occipital, Right	2.5 SD	0 SD
2-4 hz	Frontal-Temporal, Right	4 SD	2 SD
3-5 hz	Frontal-Temporal, Left	4 SD	0 SD - 1 SD
6-11 hz	Frontal-Parietal, Bilateral	-2 SD	-1 SD - 0 SD
8-9 hz	Occipital, Bilateral	0 SD	2 SD
12-13 hz	Global	-1.5 SD	0 SD
14 hz	Frontal, Parietal, Occipital	-1.5 SD	1.5 SD
15-20 hz	Global	-1.5 SD	-0.5 - 0 SD
21-23 hz	Global	-1.5 SD	-2 SD - -1 SD
24-28 hz	Frontal, Right	3 SD - 4 SD	2 SD - 4 SD
26-30 hz	Parietal-Occipital, Right	-1 SD - 0 SD	-2 SD - -1 SD
Eyes Closed - Amplitude Asymmetry			
Delta	Global	severe hypo-	normal
Theta	Global	severe hypo-	normal
Alpha	F7-F8, T5-C4	mild hypo-	moderate hypo-

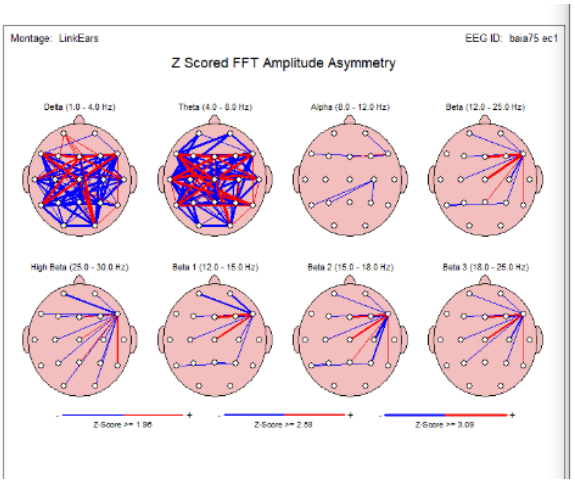
Beta	F8	moderate hyper-	normal
High Beta	F8	mild hyper-	mild hyper-
Eyes Closed - Coherence			
Delta	Global	severe hypo-	normal
Theta	Global	severe hypo-	normal
Alpha	T3-F7, Fp1-Fp2-Pz	mild hypo-	normal
Beta	Frontal, Occipital	moderate hypo-	normal
High Beta	Frontal, Occipital	moderate hypo-	mild hyper-

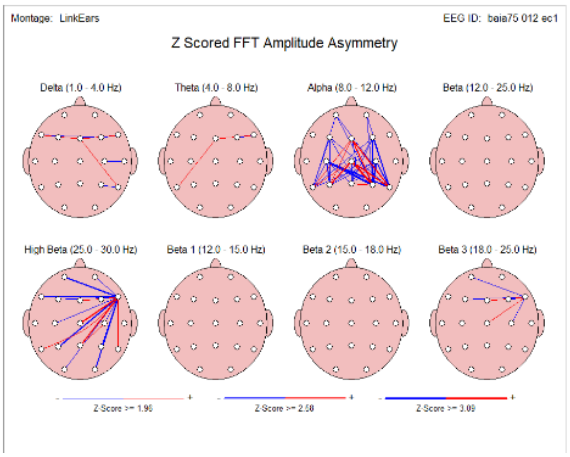










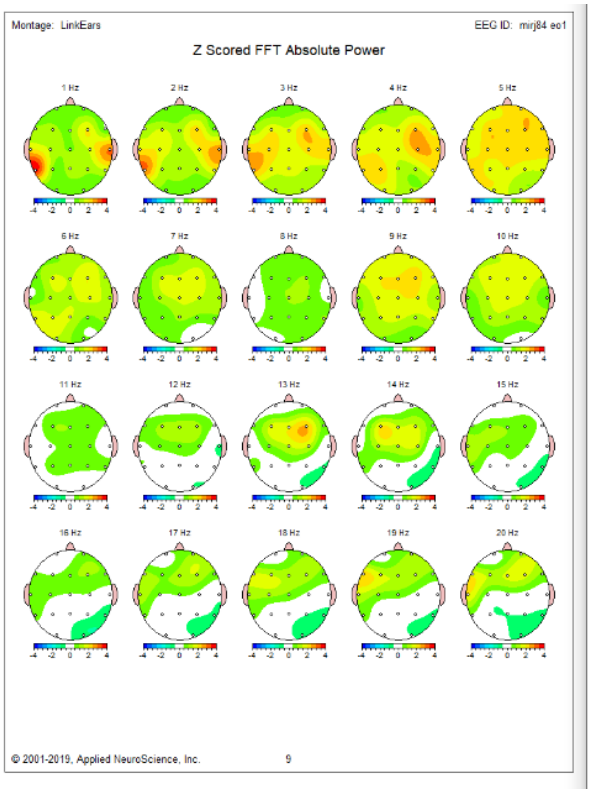


Male 84
Navy
Diet, Nutrition, Exercise

Eyes Open
Absolute Power: Delta and theta bands have globally improved. Alpha has improved at 8-9 hz while 10-11 hz has increased power in the frontal-parietal regions. The previously seen high power in Beta1 has improved, while low posterior power has increased. High beta remains high, despite some improvement, in the frontal-parietal regions.
Amplitude Asymmetry: Improvement across all bands.
Coherence: Delta coherence has improved to "normal." Theta, alpha, beta and high beta coherence show mild improvement.

Eyes Open - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-3 hz	Temporal-Parietal, Bilateral	3.5 SD	0 SD
4-6 hz	Parietal-Occipital, Left	3 SD	2 SD
5 hz	Frontal-Temporal, Right	3.5 SD	3 SD
6 hz	Global	2.5 SD	1.5 SD
7-9 hz	Global	2 SD	0 SD
10 hz	Global	2 SD	2.5 SD
11 hz	Global	1 SD	2.5 SD
12 hz	Frontal-Parietal, Bilateral	1.5 SD	1 SD
13 hz	Frontal-Parietal, Right	2.5 SD	0 SD
14-17 hz	Frontal-Parietal, Left	2.5 SD	0 SD
14-17 hz	Parietal-Occipital, Right	-1 SD	-2 SD
18 hz	Frontal-Temporal Left, Frontal Bilateral	2.5 SD	2 SD
19 hz	Frontal-Temporal, Bilateral	2.5 SD	2.5 SD
20 hz	Frontal-Temporal Left, Frontal Bilateral	2.5 SD	3 SD

21-30 hz	Frontal-Parietal, Bilateral	3 SD - 4 SD	3 SD - 4 SD
24-30 hz	Parietal-Occipital, Left	2.5 SD	1 SD
Eyes Open - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Delta	T5 - TP4, O2	moderate hypo-	normal
Delta	T5 - Cz, Pz	mild hyper-	normal
Theta	O2-O1, C4	mild hyper-	mild hyper-
Alpha	O2-T6	moderate hypo-	normal
Beta	Parietal-Occipital-Posterior Frontal	moderate hypo-	mild hypo-
High Beta	Parietal-Occipital-Posterior Frontal	moderate hypo-	mild hypo-
Eyes Open - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Parietal-Posterior Frontal, Bilateral	moderate hypo-	normal
Theta	T5	mild hypo-	mild hyper-
Alpha	Global	mild hyper-	mild hyper-
Beta	T6, O1 - F8	moderate hyper-	moderate hyper-
High Beta	T6 - F8, T4	mild hyper-	mild hyper-


Montage: LinkEars
EEG ID: mirj84 eo1
Z Scored FFT Absolute Power
1 Hz
2 Hz
3 Hz
4 Hz
5 Hz
6 Hz
7 Hz
8 Hz
9 Hz
10 Hz
11 Hz
12 Hz
13 Hz
14 Hz
15 Hz
16 Hz
17 Hz
18 Hz
19 Hz
20 Hz
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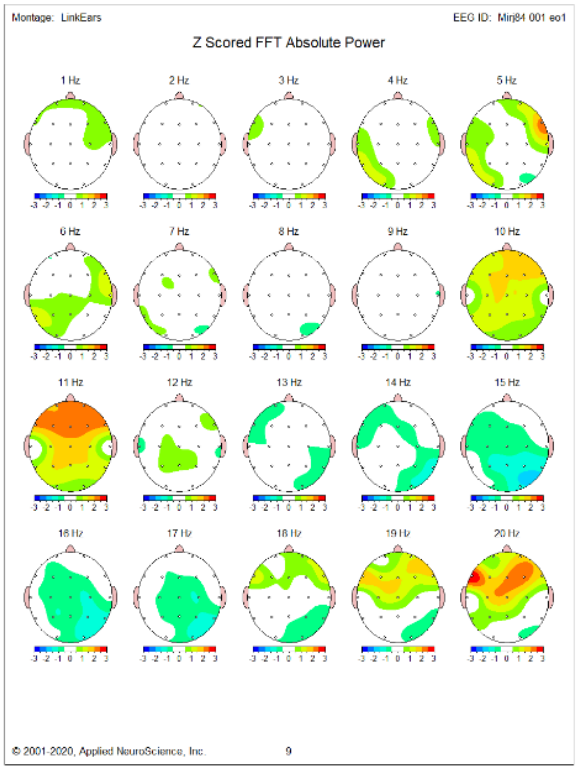
9


Montage: LinkEars
EEG ID: Mirj84 001 eo1
Z Scored FFT Absolute Power
1 Hz
2 Hz
3 Hz
4 Hz
5 Hz
6 Hz
7 Hz
8 Hz
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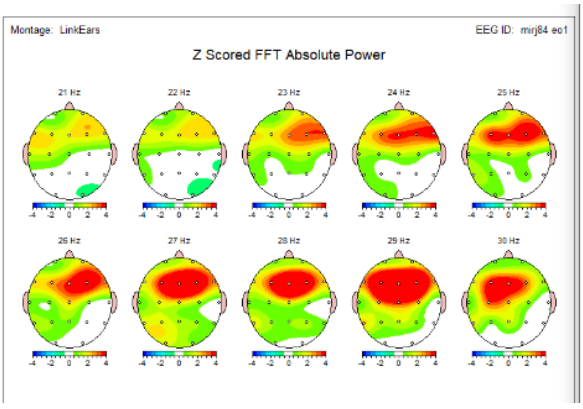
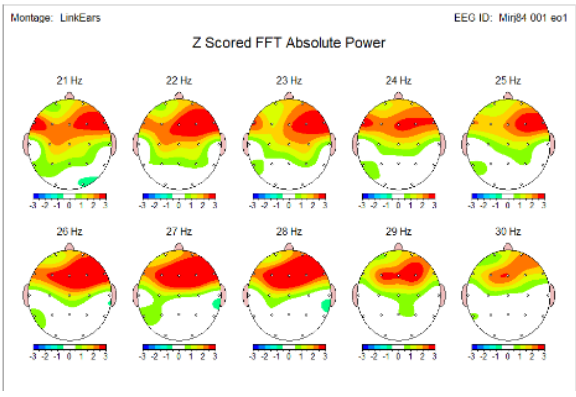
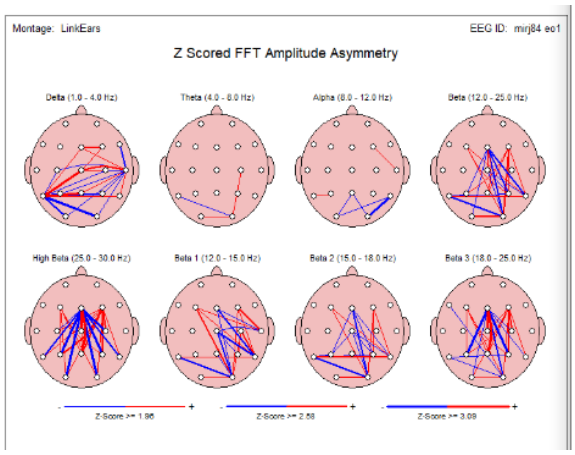
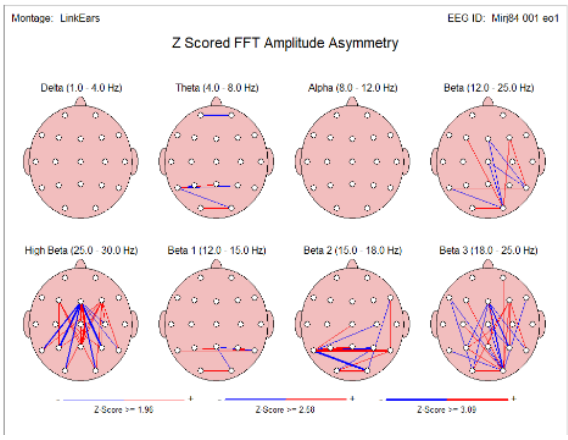
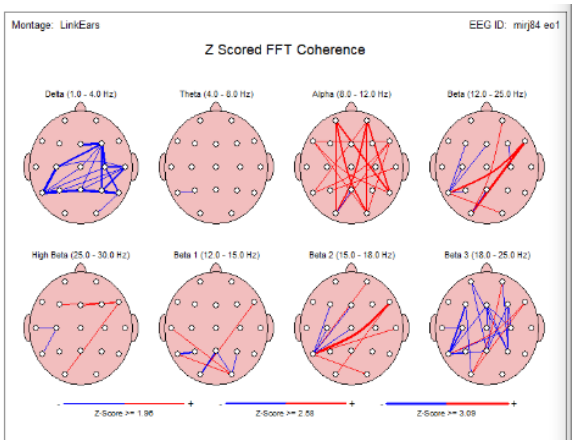
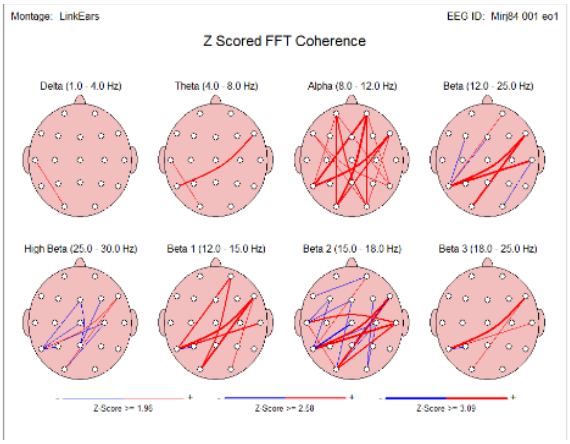

Montage: LinkEars
EEG ID: mirj84 eo1
Z Scored FFT Absolute Power
21 Hz
22 Hz
23 Hz
24 Hz
25 Hz
26 Hz
27 Hz
28 Hz
29 Hz
30 Hz


Montage: LinkEars
EEG ID: Mirj84 001 eo1
Z Scored FFT Absolute Power
21 Hz
22 Hz
23 Hz
24 Hz
25 Hz
26 Hz
27 Hz
28 Hz
29 Hz
30 Hz


Montage: LinkEars
EEG ID: mirj84 eo1
Z Scored FFT Amplitude Asymmetry
Delta (1.0 - 4.0 Hz)
Theta (4.0 - 8.0 Hz)
Alpha (8.0 - 12.0 Hz)
Beta (12.0 - 25.0 Hz)
High Beta (25.0 - 30.0 Hz)
Beta 1 (12.0 - 15.0 Hz)
Beta 2 (15.0 - 18.0 Hz)
Beta 3 (18.0 - 25.0 Hz)
Z-Score >= 1.96
Z-Score >= 2.58
Z-Score >= 3.09


Montage: LinkEars
EEG ID: Mirj84 001 eo1
Z Scored FFT Amplitude Asymmetry
Delta (1.0 - 4.0 Hz)
Theta (4.0 - 8.0 Hz)
Alpha (8.0 - 12.0 Hz)
Beta (12.0 - 25.0 Hz)
High Beta (25.0 - 30.0 Hz)
Beta 1 (12.0 - 15.0 Hz)
Beta 2 (15.0 - 18.0 Hz)
Beta 3 (18.0 - 25.0 Hz)
Z Score >= 1.96
Z Score >= 2.58
Z Score >= 3.09





Eyes Closed

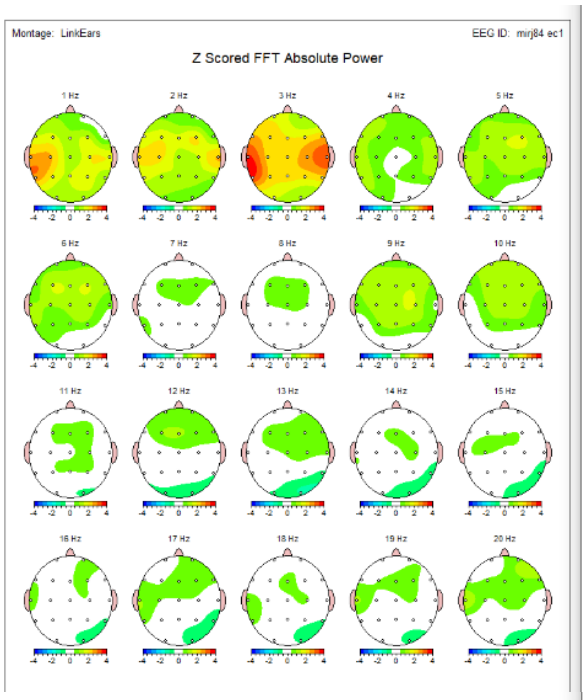
Absolute Power: Delta and theta bands remain in a state of high power. Alpha has improved at 8-9 hz while 10-11 hz has increased power in the frontal-parietal regions. Beta and high beta have increased power in the frontal-parietal regions as well.

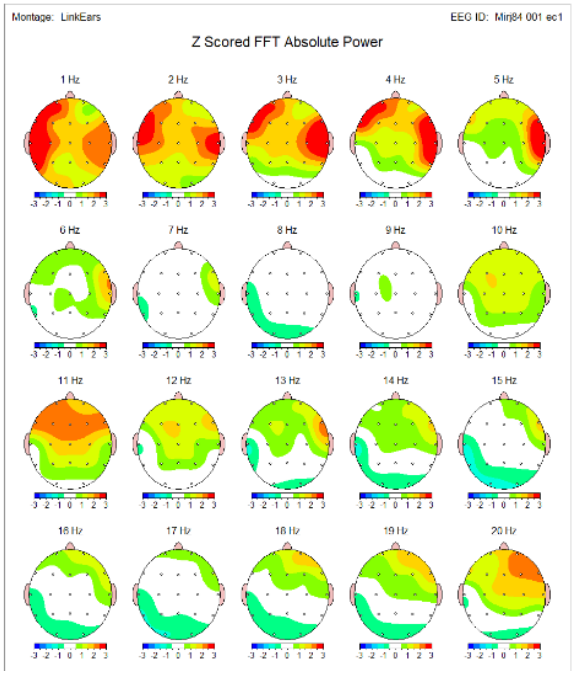
Amplitude Asymmetry: No improvement.

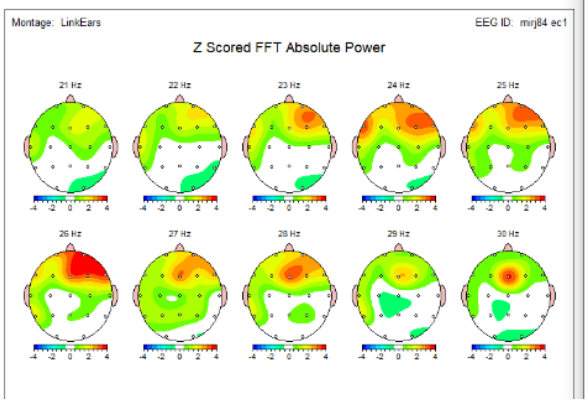
Coherence: Hypercoherence in delta and theta remains. Improvement in alpha and beta coherence, while high beta has increased hypercoherence in the frontal-temporal regions.

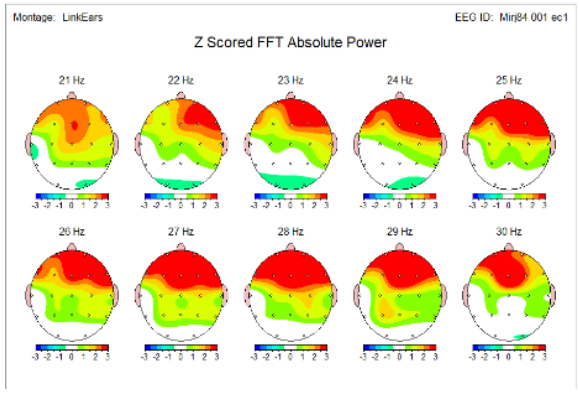
Eyes Closed - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-3 hz	Temporal-Parietal, Bilateral	2 SD - 4 SD	2 SD - 4 SD
5-6 hz	Frontal-Parietal, Bilateral	2 SD	1.5 SD
5-6 hz	Temporal, Right	1.5 SD	3 SD - 4 SD
9 hz	Frontal-Parietal-Temporal, Bilateral	2 SD	0 SD
10-15 hz	Frontal-Parietal, Bilateral	1.5 SD	2 SD - 2.5 SD
15 hz	Temporal-Parietal Left, Occipitals Bilateral	0 SD	-1.5 SD
20-21 hz	Frontal-Temporal, Right	2 SD	2.5 SD
22-30 hz	Frontal-Temporal, Right	4 SD	4 SD
Eyes Closed - Amplitude Asymmetry			
Theta	T5-T4, F8, T6	mild hypo-	moderate hyper-
Alpha	T5-F3,F4,P4	mild hyper-	mild hyper-
Beta	O2-T5	moderate hypo-	normal
Beta	O2-Fp2, Fp1	mild hyper-	mild hyper-
High Beta	Fz-C3,C4	moderate hypo-	moderate hyper-

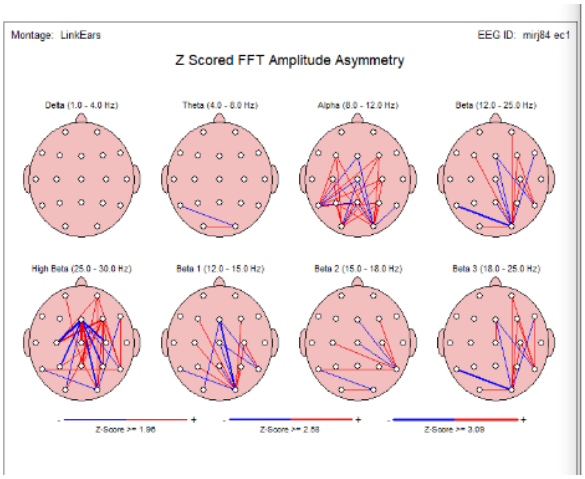
Eyes Closed - Coherence			
Delta	Global	moderate hyper-	moderate hyper-
Theta	Global	normal	moderate hyper-
Alpha	Occipitals	moderate hypo-	mild hypo-
Beta	T5-C3,Pz	mild hypo-	normal
Beta	F7-T4	normal	mild hyper-
High Beta	Global	mild hypo-	mild hyper-

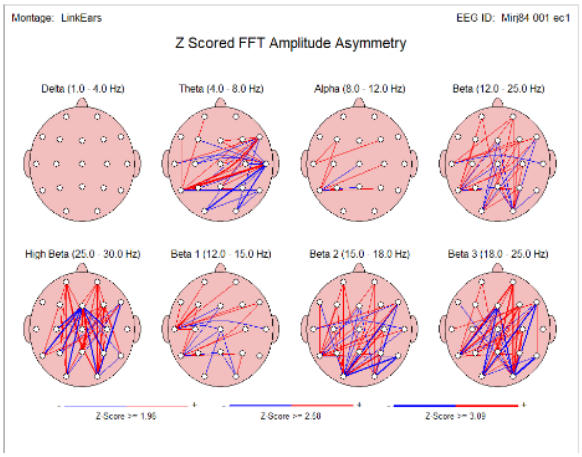










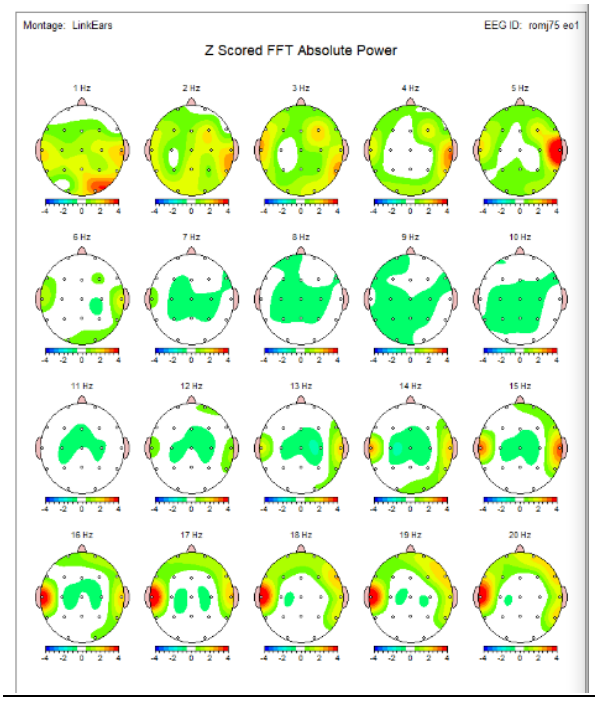


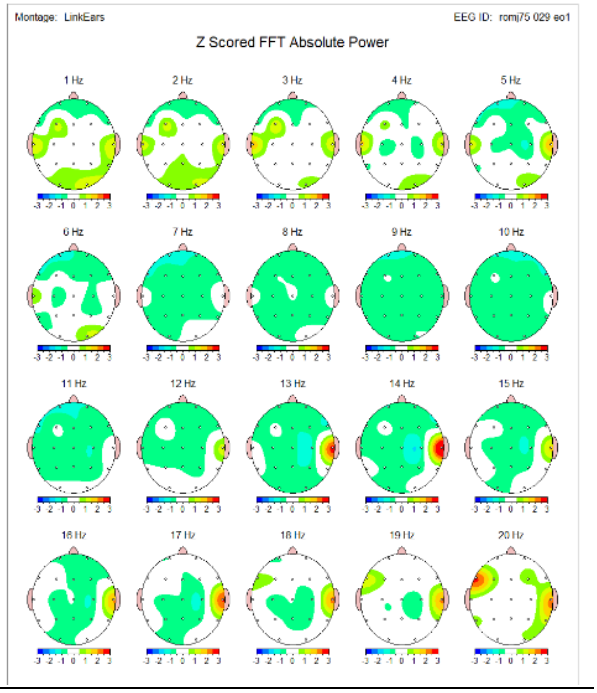
Male 75
USMC
Diet, Nutrition, Exercise, Cannabis (smoke)

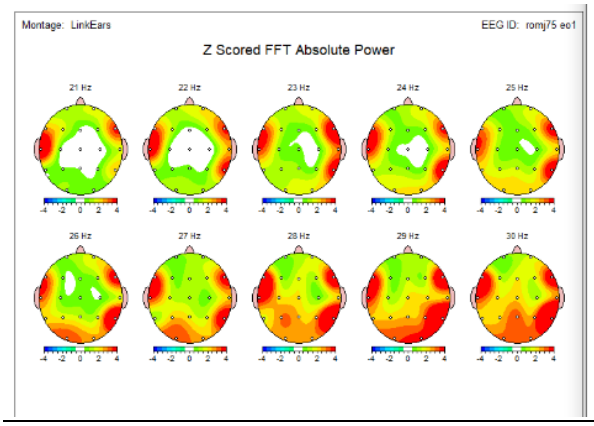
Eyes Open
Absolute Power: Delta and theta bands show global improvement. Alpha band continues to reveal global low power. Beta and high beta remain high in both temporal lobes.
Amplitude Asymmetry: Improvement across delta, theta and alpha bands.
Coherence: Delta and theta hypercoherence has improved. Beta and high beta hypercoherence has increased.

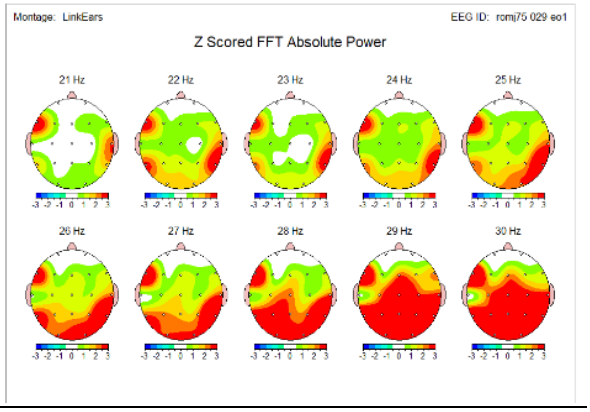
Eyes Open - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-3 hz	Occipital, Right	2 SD - 4 SD	1 SD - 2 SD
1-3 hz	Frontal-Temporal, Left	2 SD	3 SD
3-5 hz	F4, Frontal Right	3 SD	1 SD
4-6 hz	Temporal, Right	3.5 SD	1.5 SD
7-11 hz	Frontal, Bilateral	-0.5 SD	-1.5 SD
13-20 hz	Temporal, Bilateral	2 SD - 4 SD	2 SD - 4 SD
21-24 hz	Temporal, Bilateral	4 SD	4 SD
25-30 hz	Temporal-Parietal-Occipital, Bilateral	4 SD	4 SD
Eyes Open - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Delta	C3-T6	moderate hypo-	normal
Theta	Frontal-Parietal-Temporal, Bilateral	moderate hypo-	mild hypo-

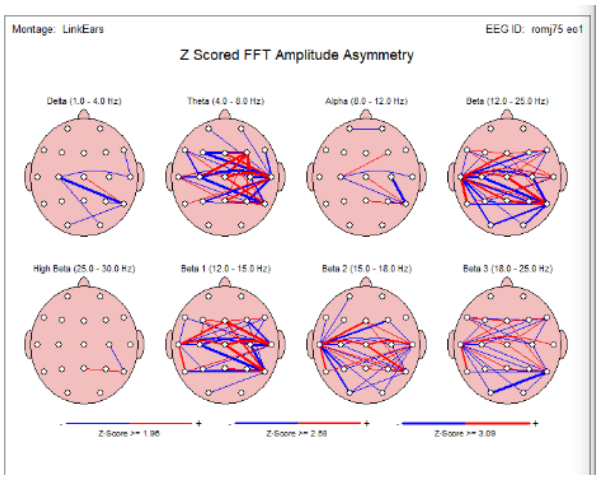
Alpha	T6-C4	moderate hypo-	normal
Beta	Frontal-Parietal-Temporal, Bilateral	moderate hypo-	moderate hypo-
Eyes Open - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Global	mild hyper-	normal
Theta	Frontal-Temporal, Bilateral	moderate hyper-	moderate hyper-
Beta	Global	normal	moderate hyper-
High Beta	Global	mild hyper-	moderate hyper-

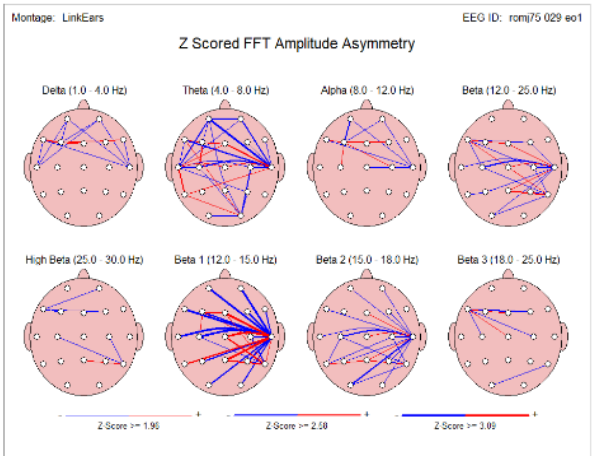


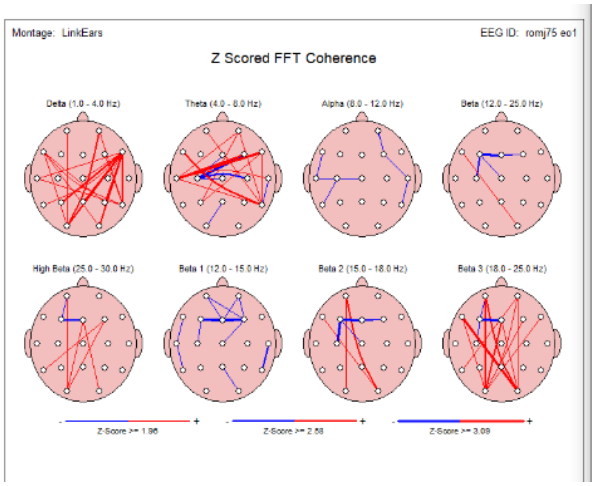


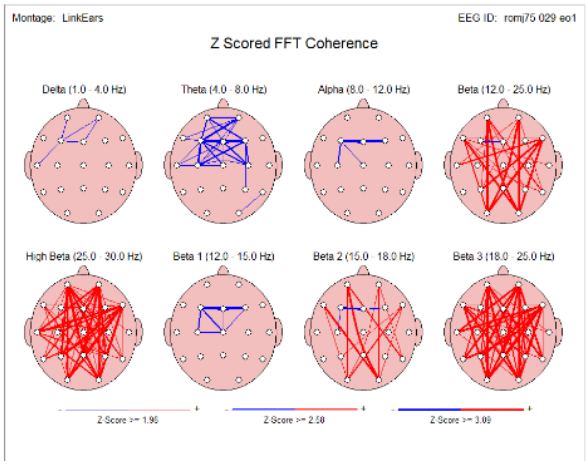












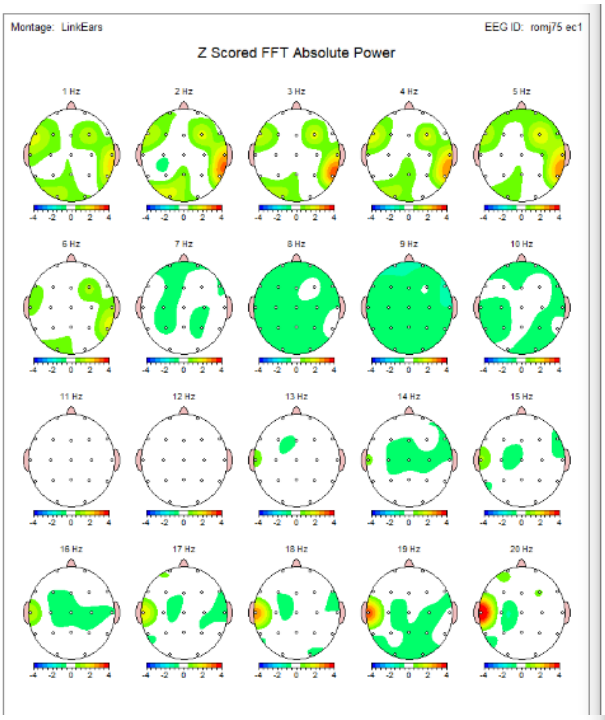
Eyes Closed

Absolute Power: Delta power has increased in the left frontal, but has also improved in the right temporal. Improvements in theta and 8-9 hz Alpha, while 10-11 hz Alpha has increased in power significantly. Beta and high beta show global massive improvement.

Amplitude Asymmetry: Improvement across all bands.

Coherence: Improvement across all bands.

Eyes Closed - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-3 hz	Frontal, Left	1 SD	2 SD
1-5 hz	Temporal, Right	3 SD	2 SD
6 hz	Temporal, Right	2 SD	0 SD
8-9 hz	Global	-1.5 SD	-0.5 - 0 SD
10-11 hz	Global	-1 SD	1.5 - 2 SD
17-27 hz	Temporal, Left	2 SD - 4 SD	0 SD
26-30 hz	Frontal, Left	3.5 SD	0 SD
26-30 hz	Cz	3 SD	0 SD
Eyes Closed - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Delta	Parietal-Temporal, Bilateral	moderate hypo-	normal
Theta	Global	moderate hypo-	mild hyper-posteriorly
Alpha	Frontal	mild hypo-	mild hypo-
Beta	T3 - F8, T4, T6, O2	moderate hyper-	normal
High Beta	Temporal, Bilateral	mild hyper-	normal
Eyes Closed - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Parietal-Occipital, Bilateral	moderate hypo-	mild hypo-
Theta	Global	moderate hypo-	moderate hypo-
Beta	Frontal	moderate hypo-	normal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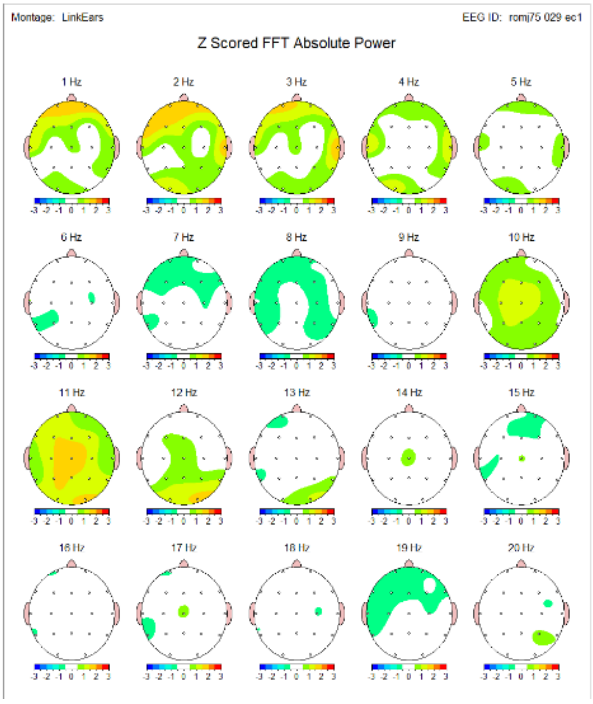
Z Scored FFT Absolute Power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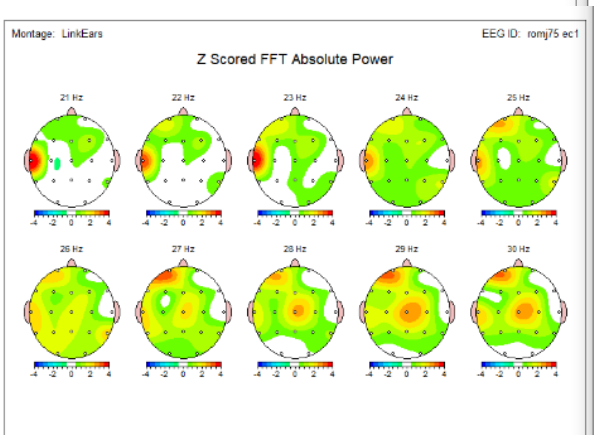
EEG ID: romj75 029 ec1
Z Scored FFT Absolute Power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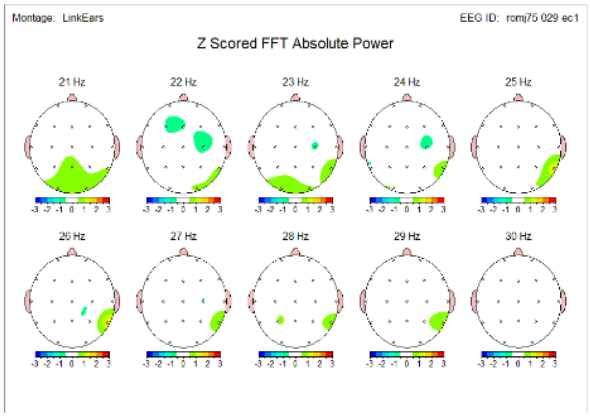
EEG ID: romj75 ec1
Z Scored FFT Absolute Power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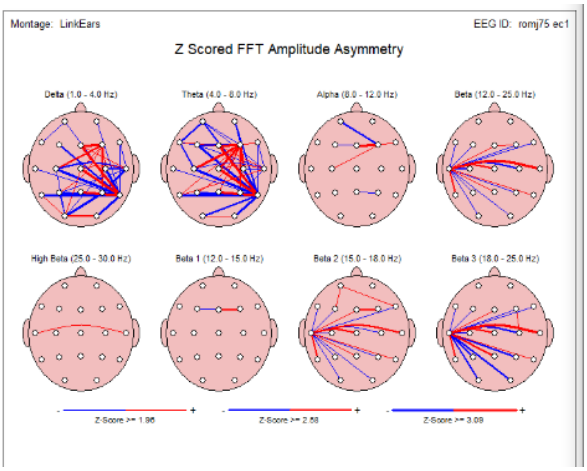
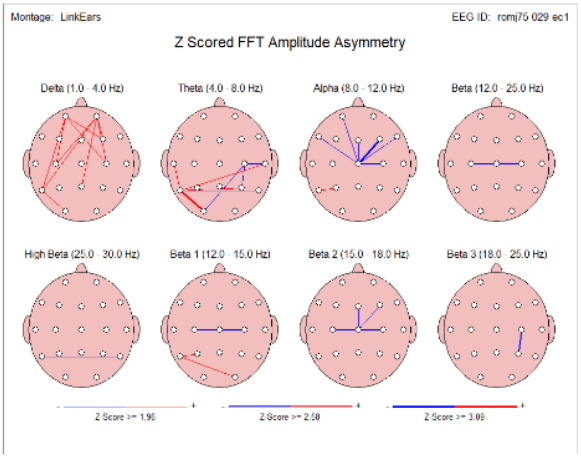
Z Scored FFT Absolute Power


Montage: LinkEars
EEG ID: romj75 ec1
Z Scored FFT Amplitude Asymmetry
Delta (1.0 - 4.0 Hz)
Theta (4.0 - 8.0 Hz)
Alpha (8.0 - 12.0 Hz)
Beta (12.0 - 25.0 Hz)
High Beta (25.0 - 30.0 Hz)
Beta 1 (12.0 - 15.0 Hz)
Beta 2 (15.0 - 18.0 Hz)
Beta 3 (18.0 - 25.0 Hz)
Z-Score >= 1.96
Z-Score >= 2.58
Z-Score >= 3.09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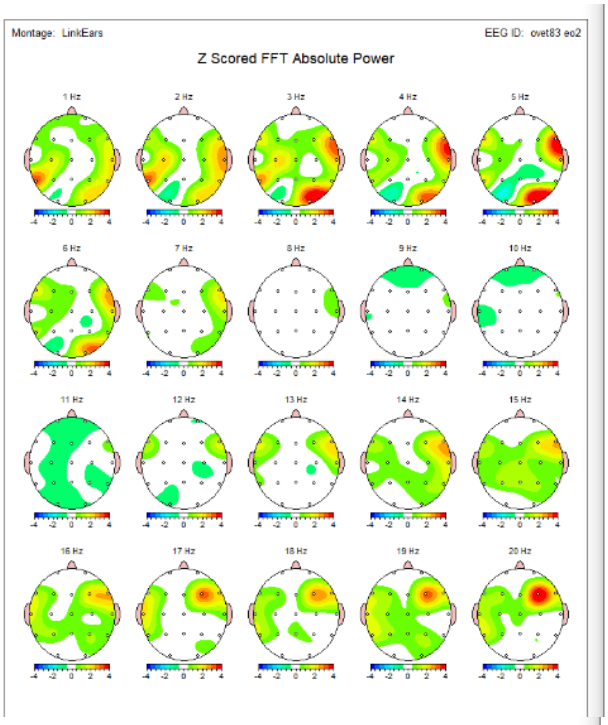
EEG ID: romj75 029 ec1
Z Scored FFT Amplitude Asymmetry
Delta (1.0 - 4.0 Hz)
Theta (4.0 - 8.0 Hz)
Alpha (8.0 - 12.0 Hz)
Beta (12.0 - 25.0 Hz)
High Beta (25.0 - 30.0 Hz)
Beta 1 (12.0 - 15.0 Hz)
Beta 2 (15.0 - 18.0 Hz)
Beta 3 (18.0 - 25.0 Hz)
Z-Score >= 1.96
Z-Score >= 2.58
Z-Score >= 3.09

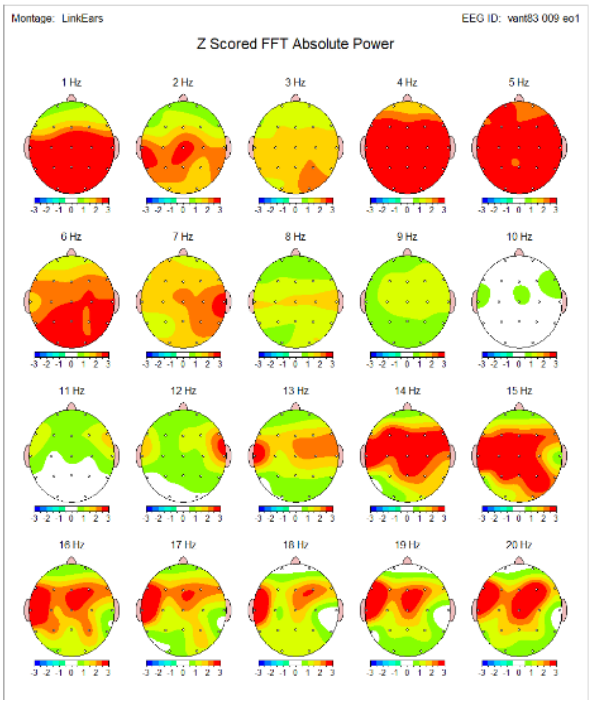
Participant: Male 83
Army
Diet, Nutrition, Exercise, HBOT, Yoga, Immersion Therapy, Cannabis (smoke)

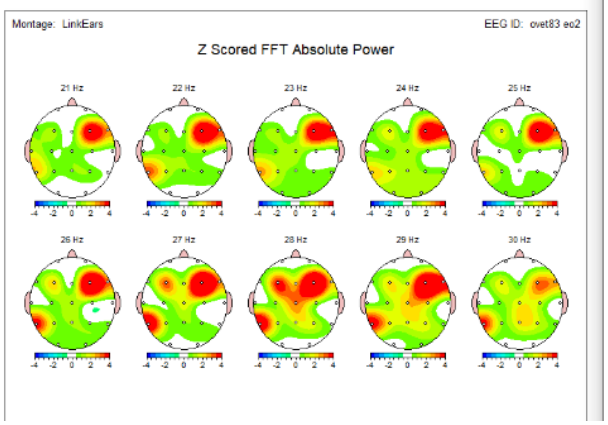
Eyes Open
Absolute Power: All bands have increased in power since the previous scan. Delta, theta and high beta bands show dysregulation 4 SD or higher.
Amplitude Asymmetry: Global improvement across all bands.
Coherence: Delta and theta bands have shifted coherence from moderate global hypocoherence to moderate global hypercoherence. Alpha, beta and high beta coherence have improved.

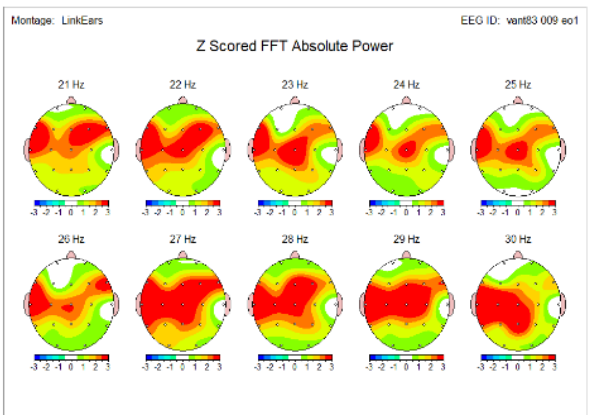
Eyes Open - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-7 hz	Temporal-Occipital, Right	4 SD	4 SD
4-6 hz	Posterior Frontal-Temporal-Parietal-Occipital, Bilateral	1 SD - 4 SD	3 SD - 4 SD
6-8 hz	Temporal, Right	1 SD - 4 SD	4 SD
9 hz	Frontal-Parietal, Bilateral	0 SD	2 SD
12-20 hz	Frontal-Temporal, Bilateral	2 SD - 4 SD	2 SD - 4 SD
21-30 hz	Frontal-Temporal, Right	4 SD	3 SD
21-30 hz	Posterior Frontal-Parietal-Occipital, Bilateral	1 SD - 4 SD	2 SD - 4 SD
Eyes Open - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Delta	Posterior Frontal-Parietal, Bilateral	moderate hyper-	normal
Theta	Global	moderate hypo-	normal
Alpha	Frontal	mild hypo-	normal
Beta	F4-O1,F3	moderate hyper-	normal
High Beta	F4-O1,F3	moderate hyper-	normal
Eyes Open - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Global	moderate hypo-	moderate hyper-
Theta	Global	moderate hypo-	moderate hyper-
Alpha	T5	mild hypo-	normal

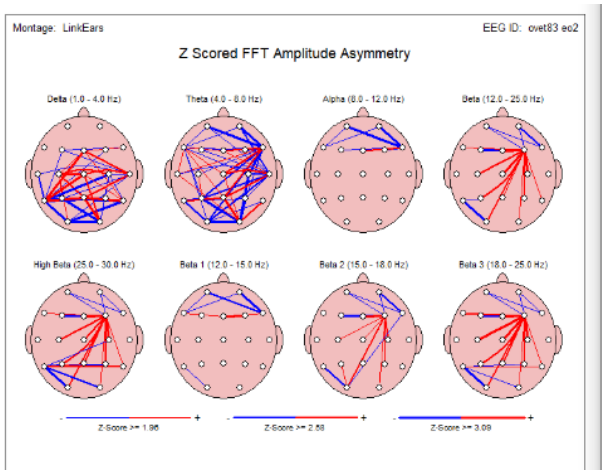
Beta	F4	moderate hypo-	mild hypo-
High Beta	F4	moderate hypo-	mild hypo-

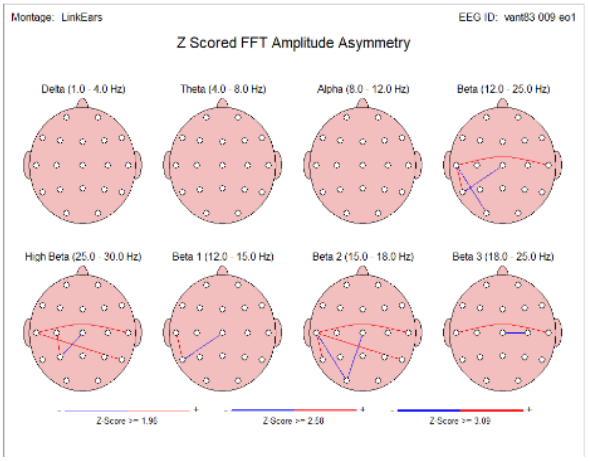


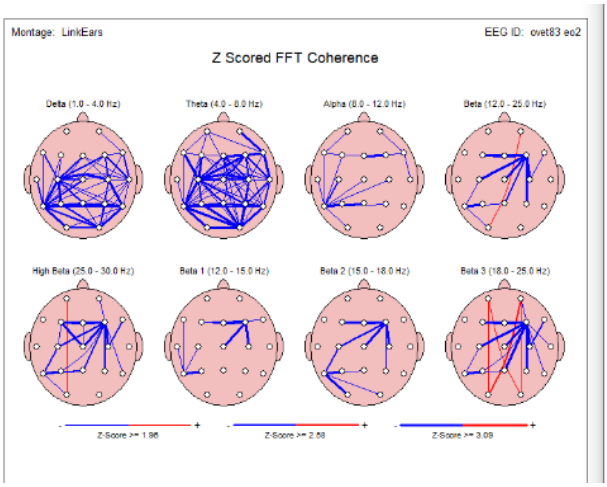


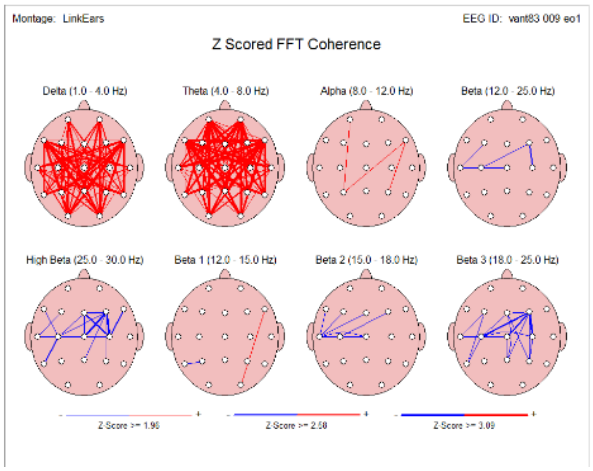












Eyes Closed

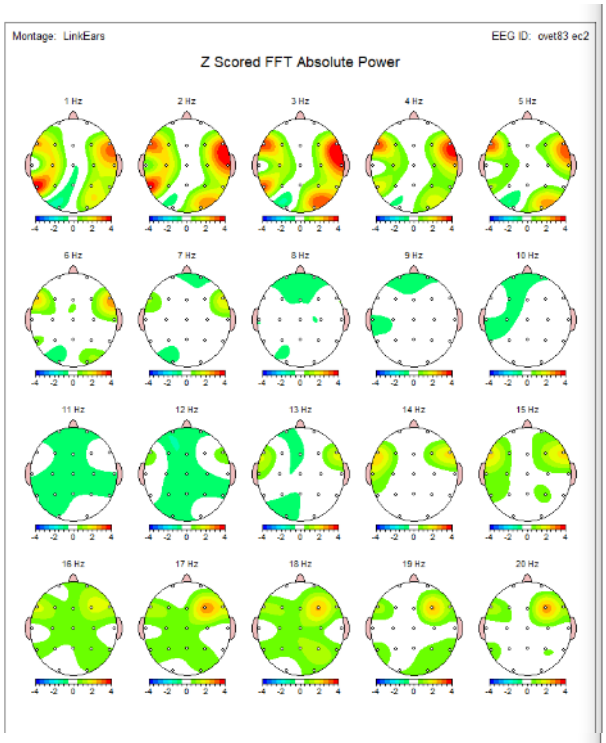
Absolute Power: All bands have increased in power since the previous scan. Delta, theta and high beta bands show dysregulation 4 SD or higher.

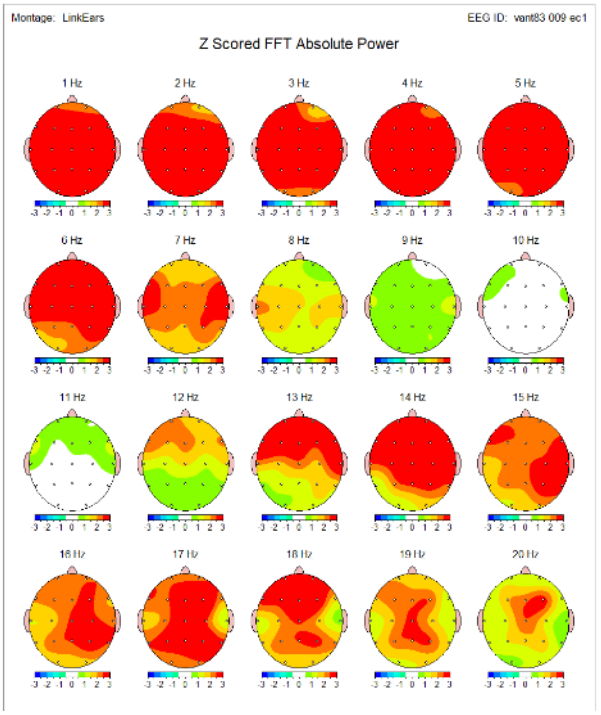
Amplitude Asymmetry: Global improvement across all bands.

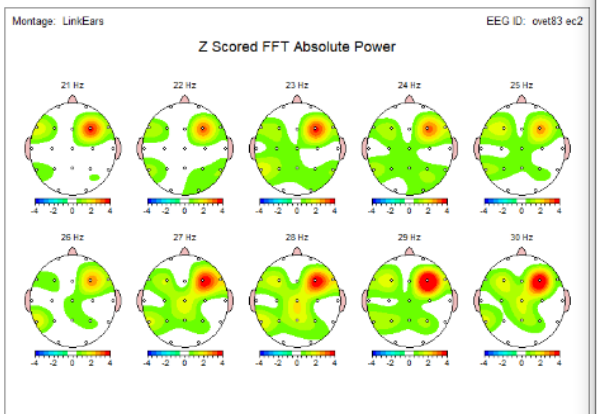
Coherence: Delta band has shifted from moderate hypocoherence to moderate hypercoherence. Theta, alpha, beta and high beta bands have improved coherence.

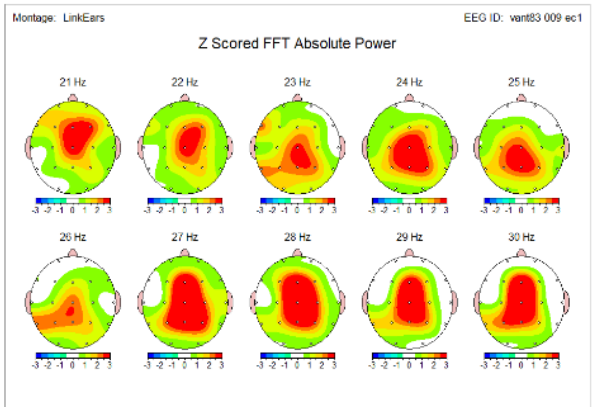
Eyes Closed - Absolute Power			
Hz	**AOI**	**Before**	**After**
1-6 hz	Temporal-Occipital, Bilateral	4 SD	4 SD, Globally
7 hz	Temporal-Parietal, Bilateral	1 SD	4 SD
8 hz	Temporal-Parietal, Bilateral	0 SD	2 SD
12 hz	Frontal, Bilateral	-0.5 SD	2.5 SD
13-18 hz	Frontal-Temporal-Parietal, Bilateral	1 SD - 2.5 SD	4 SD
18-30 hz	F4, Frontal	4 SD	4 SD
18-30	Posterior Frontal-Parietal, Bilateral	1 SD	4 SD
Eyes Closed - Amplitude Asymmetry			
Hz	**AOI**	**Before**	**After**
Delta	Global	moderate hyper-	normal
Theta	Global	moderate hypo, mild hyper-	normal
Alpha	Frontal	mild hypo-	normal
Beta	Frontal	mild hypo-	normal
High Beta	F4	mild hyper-	normal

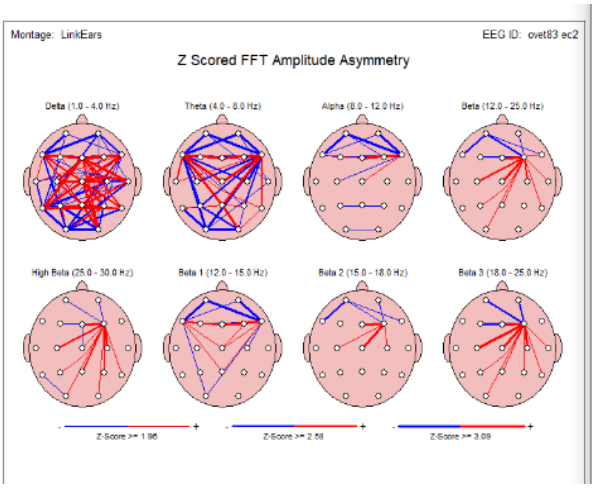
Eyes Closed - Coherence			
Hz	**AOI**	**Before**	**After**
Delta	Global	moderate hypo-	moderate hyper-
Theta	Global	moderate hypo-	mild hyper-
Alpha	Right Frontal, Left Occipital	mild hypo-	normal
Beta	F4	mild hypo-	normal
High Beta	F4	mild hypo-	normal

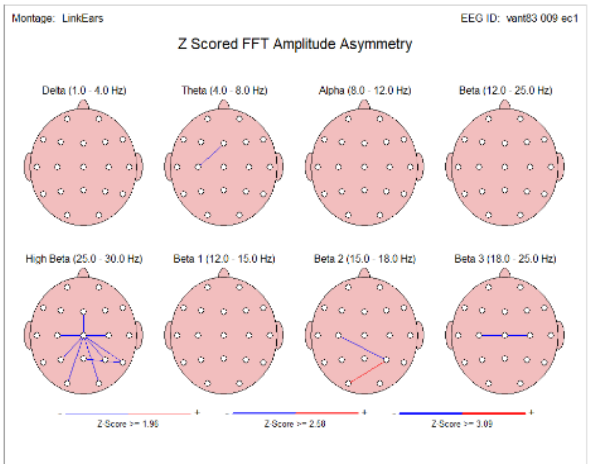






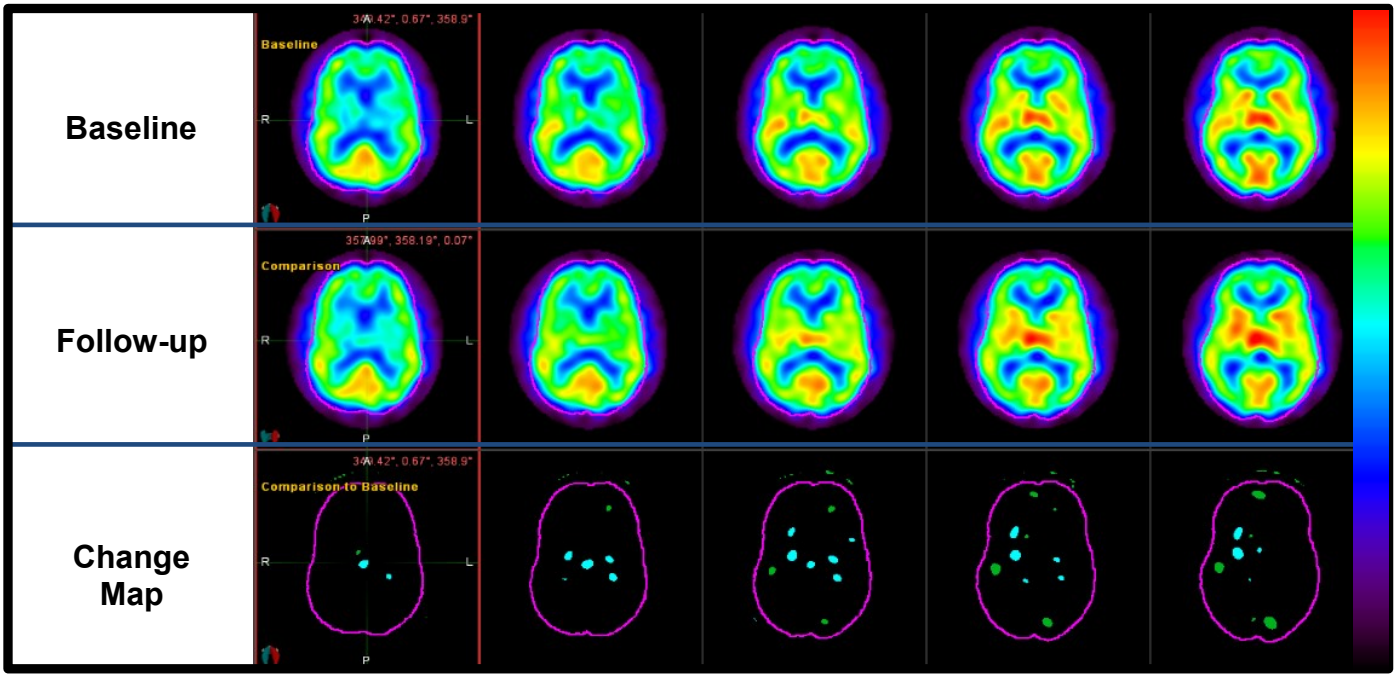






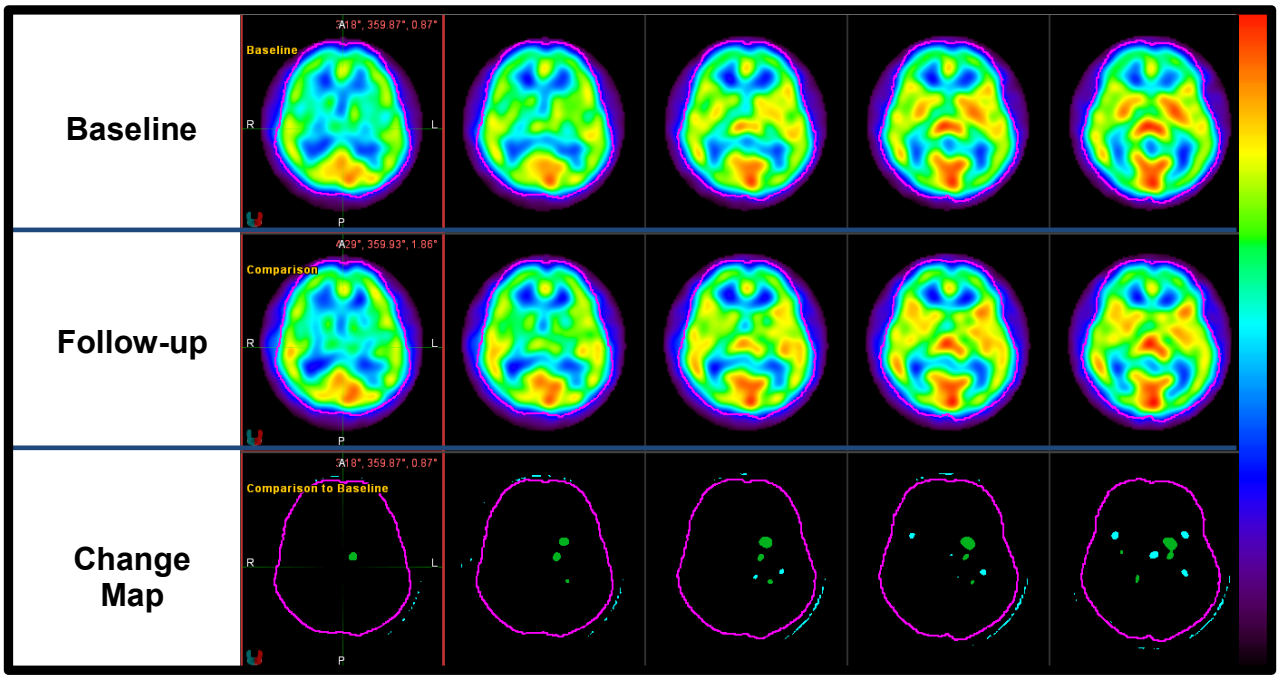
Single-Photon Emission Computerized Tomography (SPECT) Imaging:

Participant
Male 49
USMC
Diet, Nutrition, Exercise, Cannabis (smoke)



Participant 49. Changes in cerebral blood flow (CBF) associated with intervention as measured with Technetium-99m-HMPAO brain SPECT. Magnitude of CBF is defined by color bar to right, with red reflecting higher and blue/black reflecting lower CBF. Baseline and post-intervention follow-up SPECT scans are shown on top and middle rows, respectively. Subtraction image "change map" is shown on bottom row, demonstrating post-intervention CBF changes in bilateral anterior frontal, insular/frontal, temporal and occipital lobes, as well as right deep gray structures.

Participant
Male 52
First Responder
Diet, Nutrition(supplements), Exercise, HBOT



Participant 52. Changes in cerebral blood flow (CBF) associated with intervention as measured with Technetium-99m-HMPAO brain SPECT. Magnitude of CBF is defined by color bar to right, with red reflecting higher and blue/black reflecting lower CBF. Baseline and post-intervention follow-up SPECT scans are shown on top and middle rows, respectively. Subtraction image "change map" is shown on bottom row, demonstrating post-intervention CBF changes primarily in bilateral frontal/insular, left temporal, as well as left deep gray structures.

SUMMARY:

This preliminary data strongly support that the traditional psychiatric treatment model is less efficient at properly diagnosing and treating patients because it does not take into account brain systems and brain activity. Alarming veteran suicide rates have not improved despite decades of robust implementation of this traditional treatment model at the VA.

Participants that closely followed their Life Aid treatment path, showed the best improvement. We saw both a clinical change after intervention and change in brain function, as measured with qEEG and SPECT.

Initial results show LARI approach is feasible and provides proof of feasibility.

Sample size too small to provide statistical significance analysis at this time but following our next testing, we will be able to provide final report.

While results show promise, qualitative trends will not be available until more imaging can be completed at the November retreat.

A publishable report, with a target date of Nov. 30, will show analysis of control group and treatment group with statistical significance

Future direction will be to conduct an IRB research project testing modalities and interventions.