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QEEG Clinical Report

BrainLens V0.4

Report Description

Personal & Clinical Data

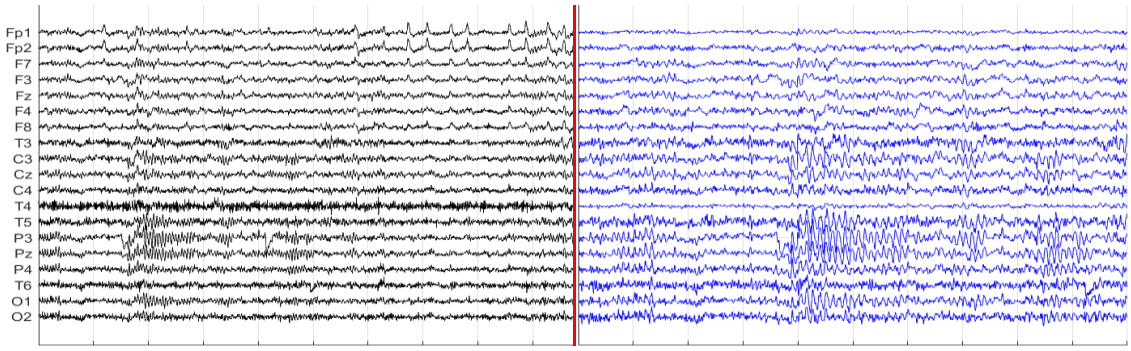
Name	Najafali Jokar	Date of Recording	09-Jun-2024
Date of Birth - Age	23-Mar-1952 - 72.21	Gender	Male
Handedness(R/L)	Right	Source of Referral	Dr Zarghami
Initial Diagnosis	Memory impairment-Depressed-Anxiety		
Current Medication	Medication Free		

Dr Zarghami

Denoising Information (EC)

Raw EEG

Denoised EEG



Flat Channels

Rejected Channels

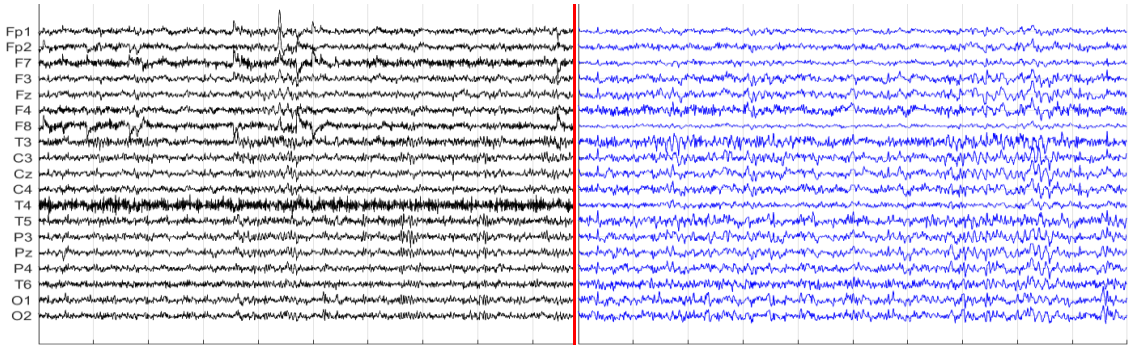
Number of Eye and Muscle Elements			
Eye	1	Muscle	1
Total Artifact Percentage			
EEG Quality	good		

Low Artifact Percentage	
High Artifact Percentage	
Total Recording Time Remaining	209.21 sec

Denoising Information (EO)

Raw EEG

Denoised EEG



Flat Channels

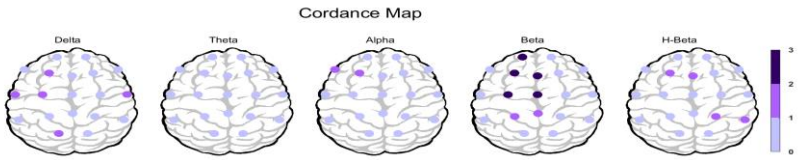
Rejected Channels

Number of Eye and Muscle Elements			
Eye	2	Muscle	2
Total Artifact Percentage			
EEG Quality	good		

Low Artifact Percentage	
High Artifact Percentage	
Total Recording Time Remaining	226.86 sec

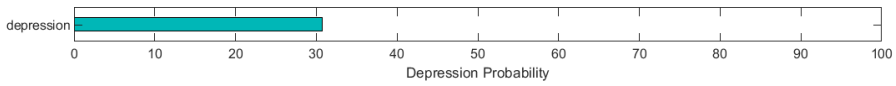
Pathological assessment for mood disorders

Compare to Mood Disorders Database



EEG Compatibility with Depression Diagnosis

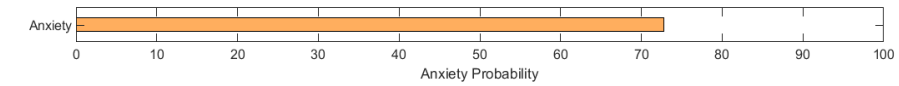
Depression Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Increased Global rAlpha	0.00	NAN	0.00	NAN
Increased global rTheta	0.00	NAN	0.50	global
Decreased rDelta	0.00	NAN	-0.50	RT-P-
Increased rBeta	0.50	RT	1.00	RT
Left FAA	0.00	NAN	0.00	NAN
Right OAA	0.36	Right OAA	0.20	Right OAA
Decreased Coherence (D, T)	-0.50	Decreased Coherence	0.00	NAN
Increased Coherence (A, B)	0.00	NAN	0.00	NAN



Depression Probability

EEG Compatibility with Anxiety Diagnosis

Anxiety Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	-0.50	RF-RT-	-0.50	RF-RT-
Increased rBeta	0.50	RT	1.00	RT
Right FAA	0.06	Right FAA	0.05	Right FAA
Left OAA	0.00	NAN	0.00	NAN
Increased IAF > 10.6	0.00	NAN	0.00	NAN



Anxiety Probability

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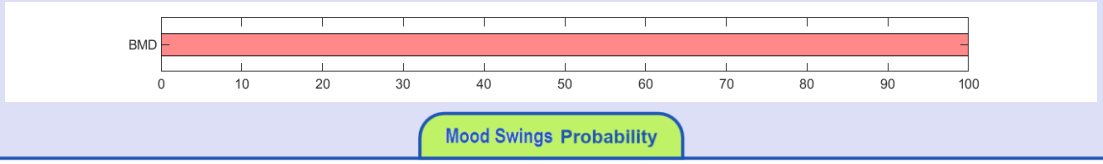
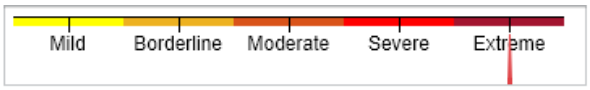
EEG Compatibility with Mood Swings Diagnosis *

Mood Swings Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	-0.50	RF-RT-	-0.50	RF-RT-
Increased (rDelta+rTheta)	0.50	LF-RF-MF-O-	1.00	LF-RF-MF-C-
Increased rBeta	0.50	RT	1.00	RT
Decreased Alpha Coherence	-0.50	Decreased Alpha	-0.50	Decreased Alpha
Right FAA	0.06	Right FAA	0.05	Right FAA



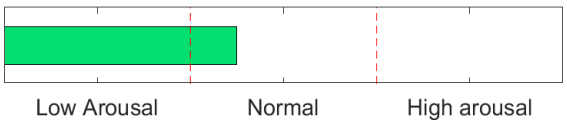
* This index can only be investigated if there are symptoms of mood swings (R/O BMD or R/O mood swings).

Depression Severity



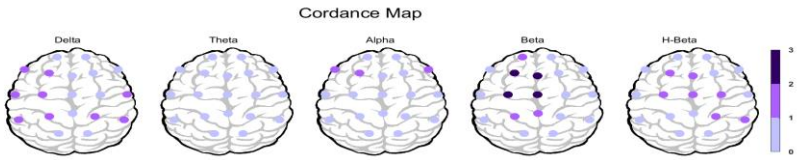
Anxiety Severity

Arousal Level Detection



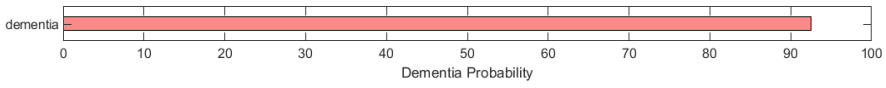
Pathological assessment for Dementia

Compare to Dementia Database



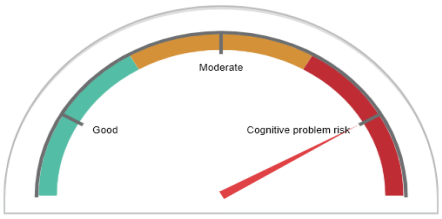
Dementia Probability

Dementia Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Increased rDelta	1.00	LF-RF-MF-LT-RT-O-	1.00	LF-RF-MF-
Increased rTheta	0.00	NAN	1.00	LF-RF-MF-LT-C-P-O-
Decreased rAlpha	-0.50	RF-RT-	-0.50	RF-RT-
Decreased rBeta	-0.50	LF-RF-MF-LT-C-P-O-	-0.50	LF-RF-MF-LT-C-P-
Increased T/A Ratio	0.50	RF-RT-	1.00	LF-RF-MF-
Increased D/A Ratio	1.00	LF-RF-MF-RT-	1.00	LF-RF-MF-
Decreased (D+T+A+B) Coherence	-0.50	Decreased global	-0.50	Decreased global

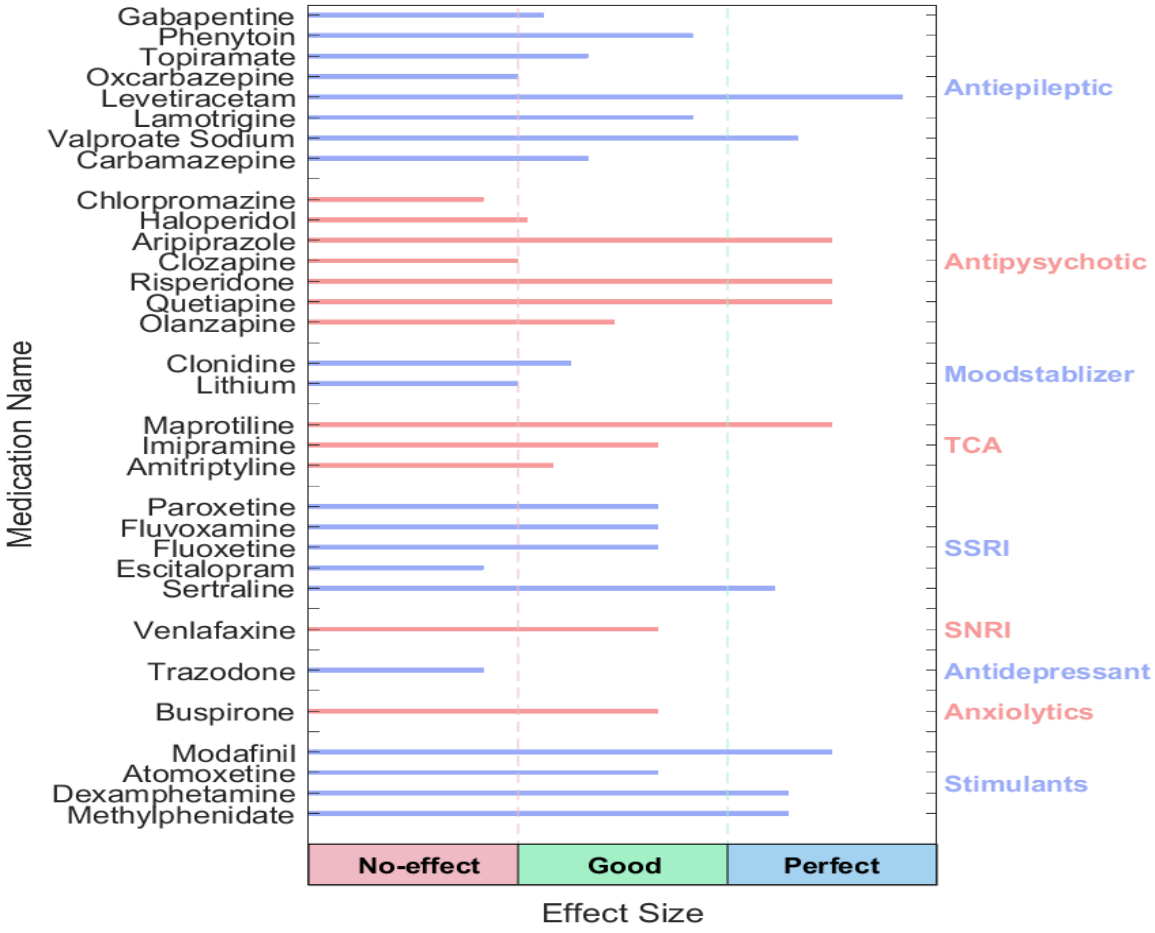


Dementia Probability

Cognitive Impairment Severity



QEEG based predicting medication response



Explanation

These two tables can be considered the most important finding that can be extracted from QEEG. To prepare this list, the NPCIndex Article Review Team has studied, categorized, and extracted algorithms from many authoritative published articles on predict medication response and Pharmaco EEG studies. These articles are published between 1970 and 2021. The findings extracted from this set include 85 different factors in the raw band domains, spectrum, power, coherence, and loreta that have not been segregated to avoid complexity, and their results are shown in these diagrams. One can review details in NPCIndex.com .

Medication Recommendation

These two charts, calculate response probability to various medications, according only to QEEG indicators. Blue charts favor drug response and red charts favor drug resistance. The longer the bar, the more evidence there is in the articles. Only drugs listed in the articles are listed. These tables present the indicators reviewed in the QEEG studies and are not a substitute for physician selection.

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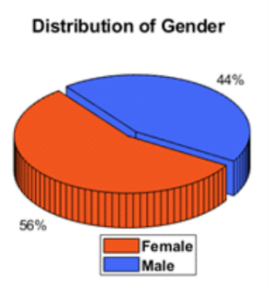
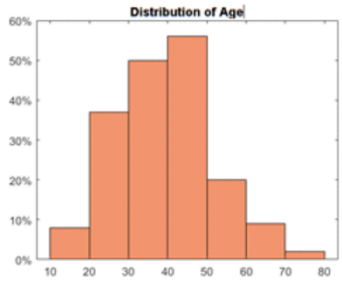
rTMS Response Prediction

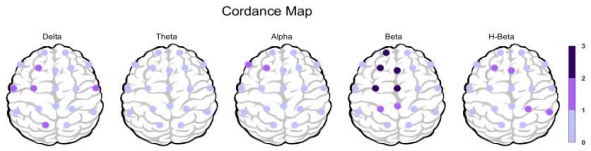
Network Performance

Accuracy: 92.1%
Sensitivity: 89.13%
Specificity: 97.47%

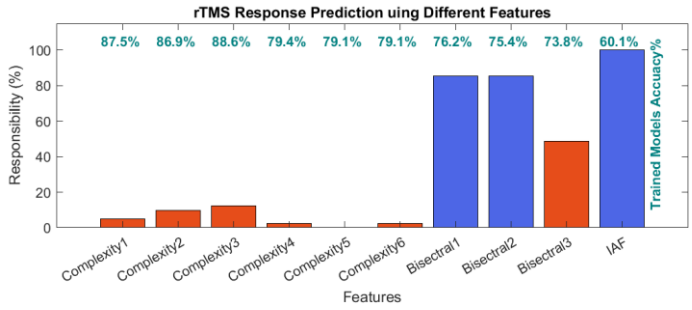
Participants Information



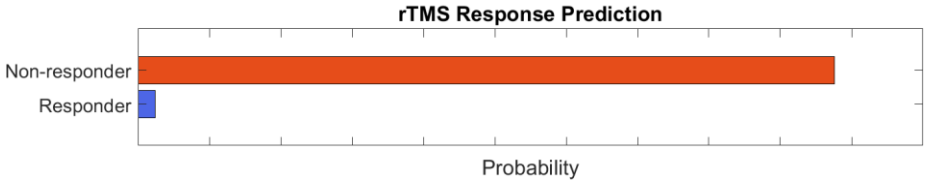




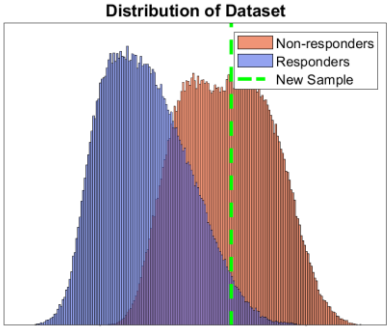
Features Information



Responsibility



Data Distribution



About Predicting rTMS Response

This index was obtained based on machine learning approaches and by examining the QEEG biomarkers of more than 470 cases treated with rTMS. The cases were diagnosed with depression (with and without comorbidity) and all were medication free. By examining more than 40 biomarkers capable of predicting response to rTMS treatment in previous studies and with data analysis, finally 10 biomarkers including bispectral and nonlinear features entered the machine learning process. The final chart can distinguish between RTMS responsive and resistant cases with 92.1% accuracy. This difference rate is much higher than the average response to treatment of 44%, in the selection of patients with clinical criteria, and is an important finding in the direction of personalized treatment for rTMS.

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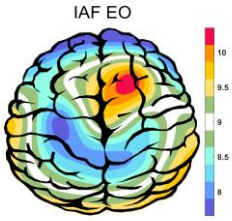
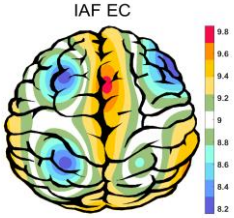
IAF(EO)



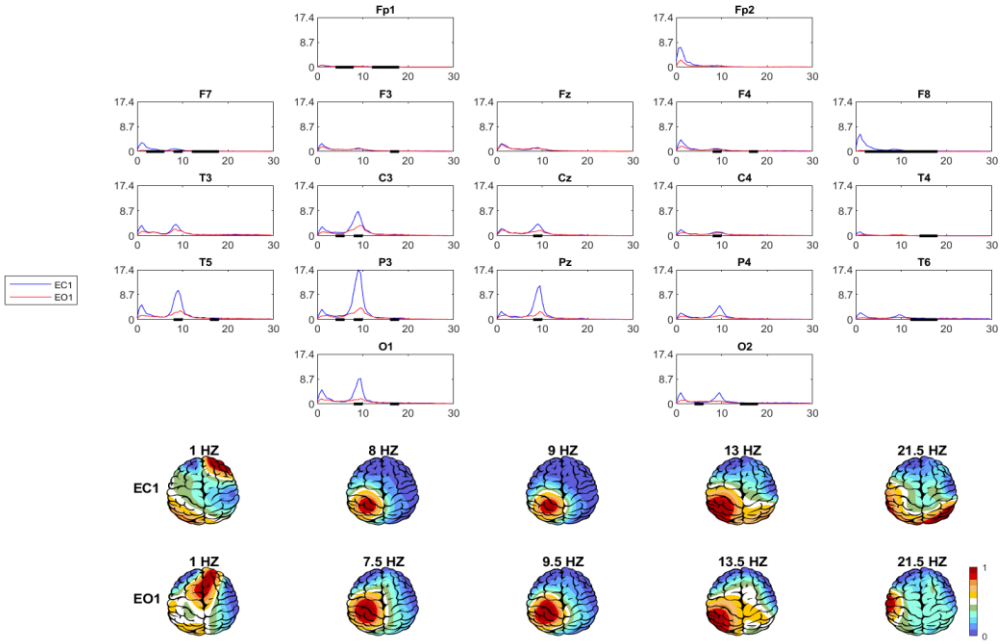
Eye Open IAF= 08.75

IAF(EC)

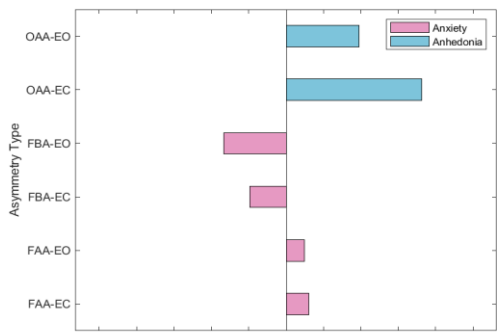


Eye Close IAF= 09.50

EEG Spectra



Alpha Asymmetry(AA)



Alpha Blocking

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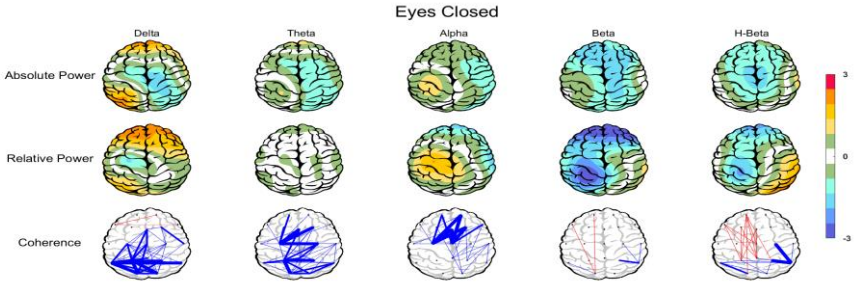
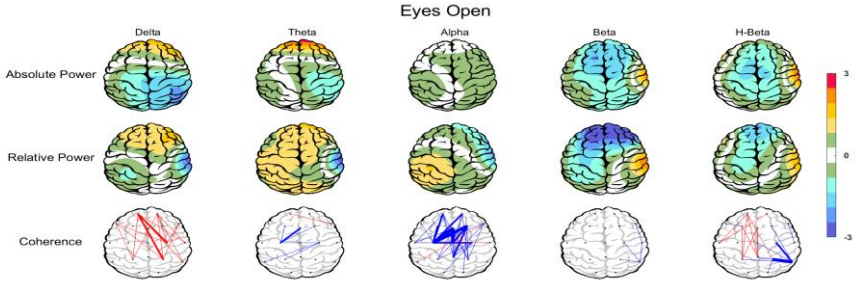
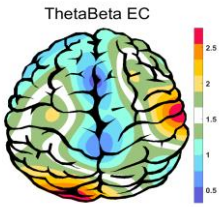
Z Score Summary Information (EC)

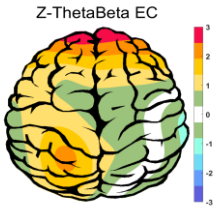


Z Score Summary Information (EO)

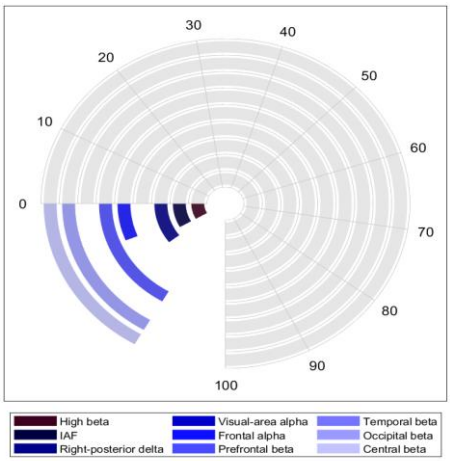


E.C.T/B Ratio (Raw- Z Score)

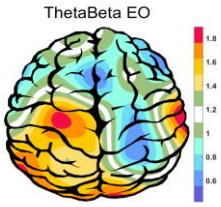


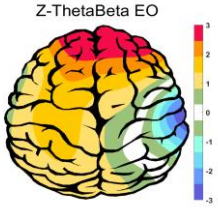


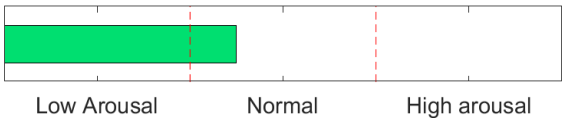
Arousal Level



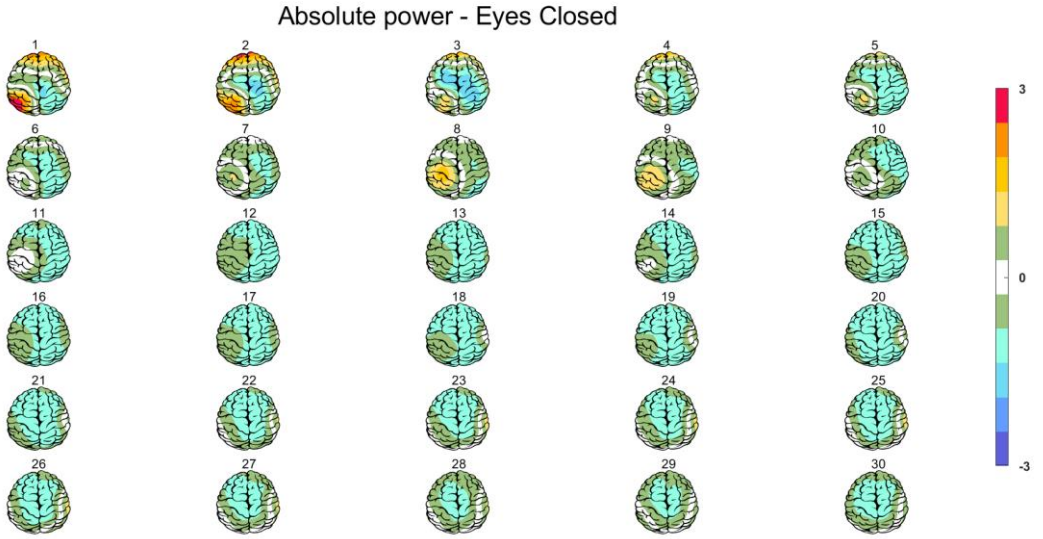
E.O.T/B Ratio (Raw- Z Score)



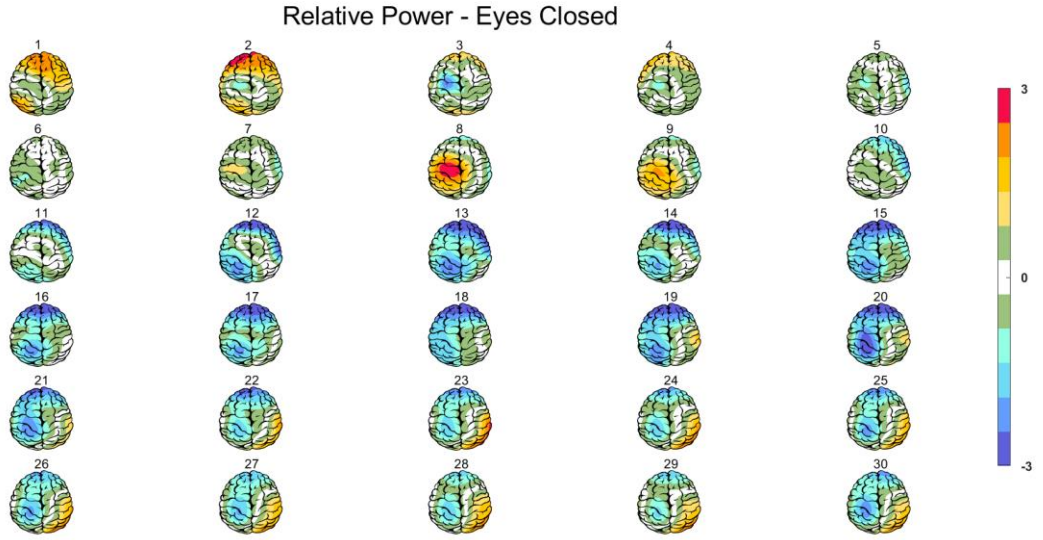




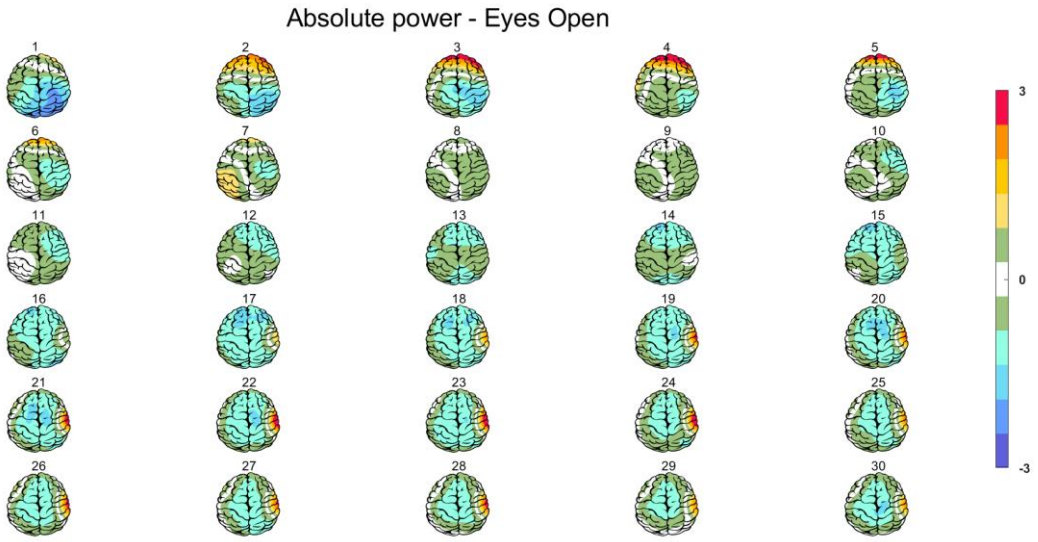
Absolute Power-Eye Closed (EC)



Relative Power-Eye Closed (EC)



Absolute Power-Eye Open (EO)



Relative Power-Eye Open (EO)