



QEEG Clinical Report

BrainLens V0.4

Report Description



Personal & Clinical Data

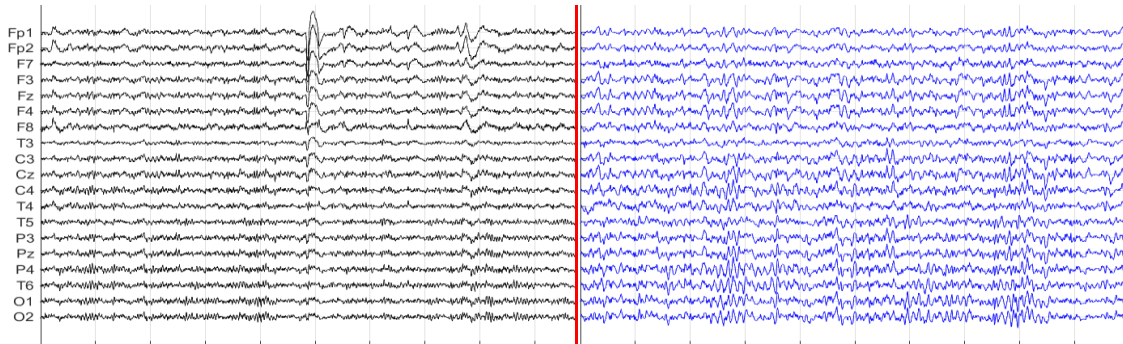
Name	Hossein Hasani	Date of Recording	21-Jul-2024
Date of Birth - Age	11-Sep-1976 - 47.86	Gender	Male
Handedness(R/L)	Right	Source of Referral	Ms Mahmoudi
Initial Diagnosis	Forgetting and memory check		
Current Medication	Medication Free		

Ms Mahmoudi

Denoising Information (EC)

Raw EEG

Denoised EEG



Flat Channels

Rejected Channels

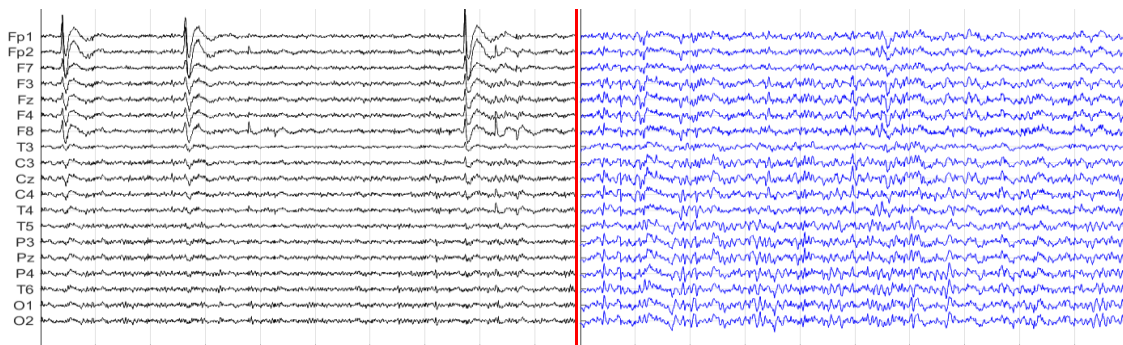


Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	3	Muscle	0		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		bad		Total Recording Time Remaining	
				84.59 sec	

Denoising Information (EO)

Raw EEG

Denoised EEG



Flat Channels

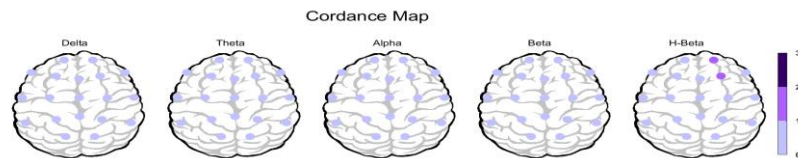
Rejected Channels



Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	2	Muscle	0		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		good		Total Recording Time Remaining	
				177.55 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	0.00	NAN
Increased rBeta	0.00	NAN	0.00	NAN
Left FAA	-0.04	Left FAA	-0.00	Left FAA
Right OAA	0.00	NAN	0.00	NAN
Decreased Coherence (D, T)	0.00	NAN	0.00	NAN
Increased Coherence (A, B)	0.00	NAN	2.00	Increased Coherence

depression

0 10 20 30 40 50 60 70 80 90 100

Depression Probability

EEG Compatibility with Anxiety Diagnosis

Anxiety Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	-0.50	RF	-1.00	LF-RF-MF-
Increased rBeta	0.00	NAN	0.00	NAN
Right FAA	0.00	NAN	0.00	NAN
Left OAA	-0.02	Left OAA	-0.01	Left OAA
Increased IAF > 10.6	0.00	NAN	0.00	NAN

Anxiety

0 10 20 30 40 50 60 70 80 90 100

Anxiety Probability

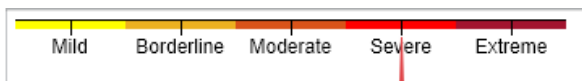
EEG Compatibility with Mood Swings Diagnosis *

Mood Swings Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	-0.50	RF	-1.00	LF-RF-MF-
Increased (rDelta+rTheta)	0.50	LF-RF-MF-LT-C-	1.00	LF-RF-MF-LT-RT-C-P-
Increased rBeta	0.00	NAN	0.00	NAN
Decreased Alpha Coherence	-0.50	Decreased Alpha	-0.50	Decreased Alpha
Right FAA	0.00	NAN	0.00	NAN

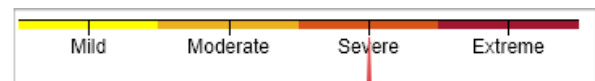
Mood Swings Probability

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

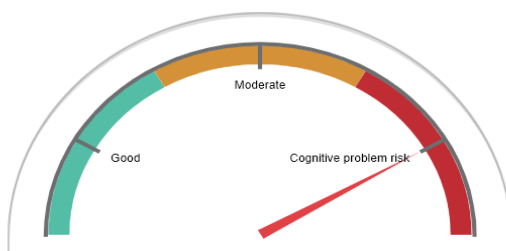
Depression Severity



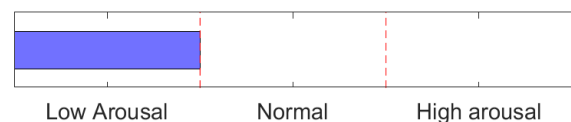
Anxiety Severity



Cognitive Functions



Arousal Level Detection



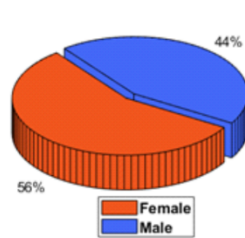
rTMS Response Prediction

Network Performance

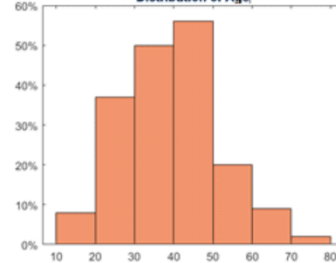
Accuracy: 92.1%
Sensitivity: 89.13%
Specificity: 97.47%

Participants Information

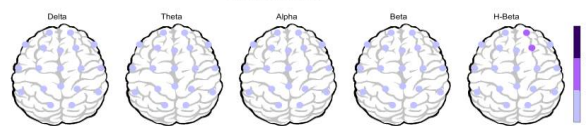
Distribution of Gender



Distribution of Age

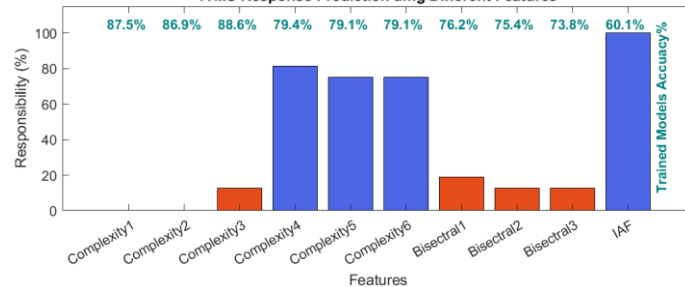


Cordance Map

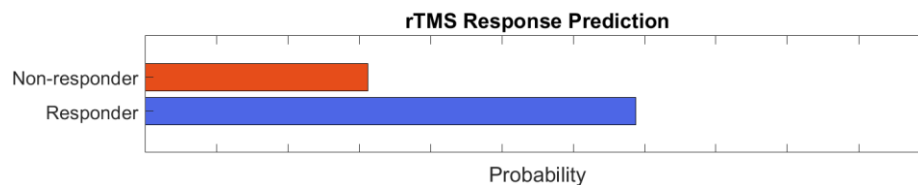


Features Information

rTMS Response Prediction using Different Features

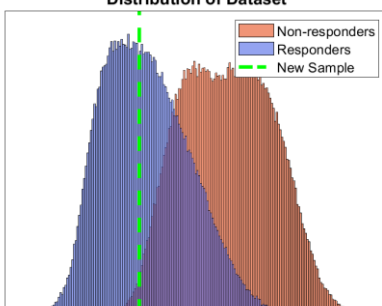


Responsibility



Data Distribution

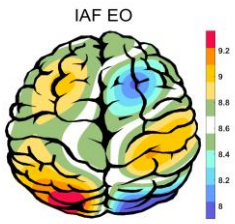
Distribution of Dataset



About Predicting rTMS Response

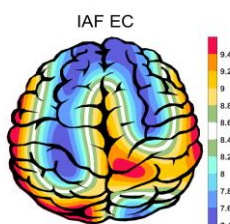
This index was obtained based on machine learning approaches and by examining the QEEG biomarkers of more than 470 cases treated with rTMS. The cases were diagnosed with depression (with and without comorbidity) and all were medication free. By examining more than 40 biomarkers capable of predicting 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.

IAF(EO)



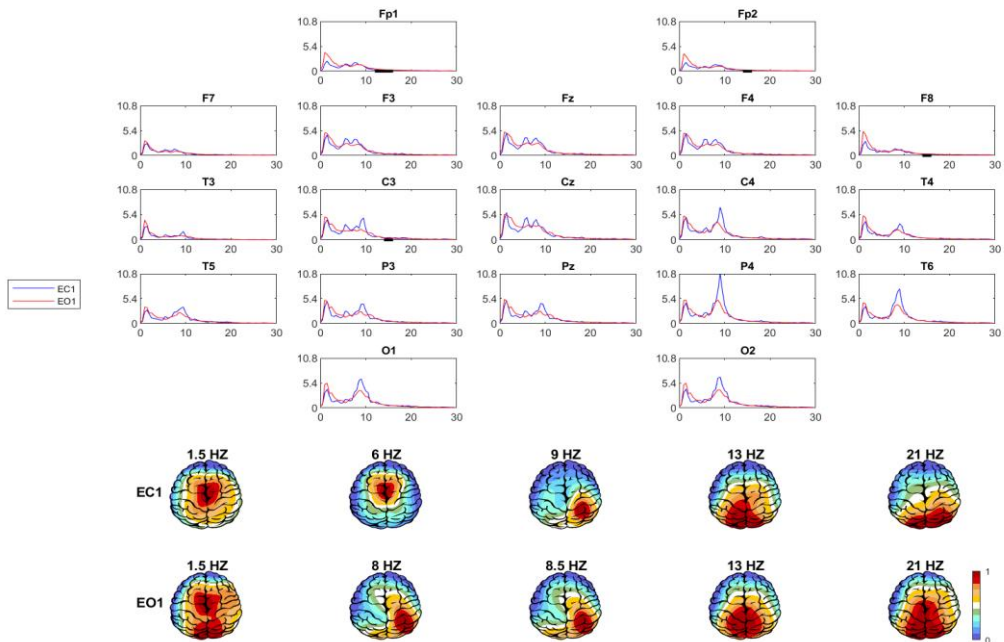
Eye Open IAF= 08.50

IAF(EC)

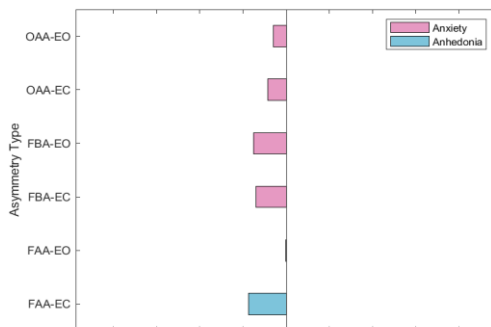


Eye Close IAF= 09.25

EEG Spectra



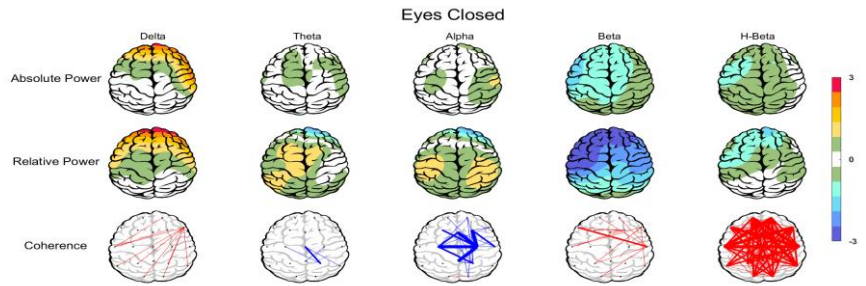
Alpha Asymmetry(AA)



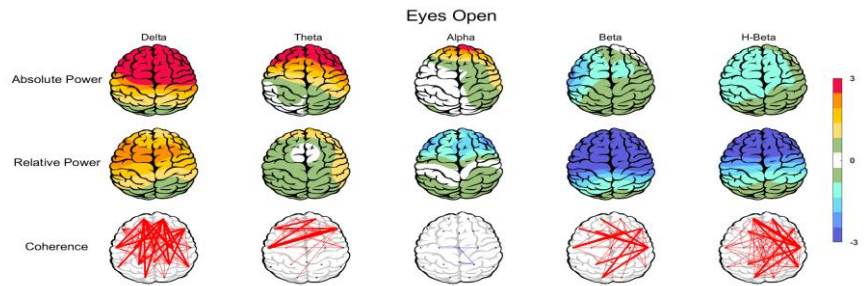
Alpha Blocking



Z Score Summary Information (EC)



Z Score Summary Information (EO)



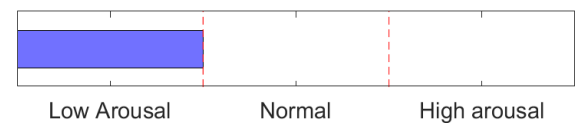
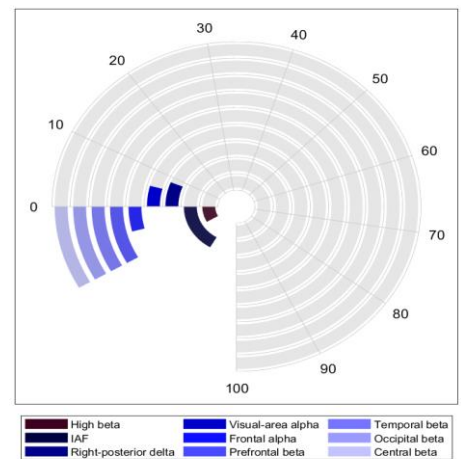
E.C.T/B Ratio (Raw- Z Score)



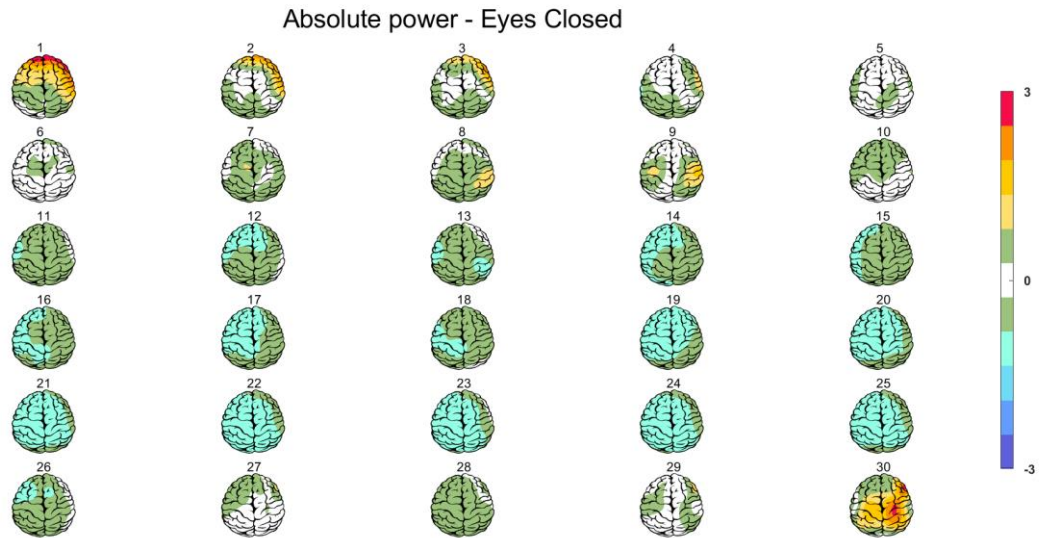
E.O.T/B Ratio (Raw- Z Score)



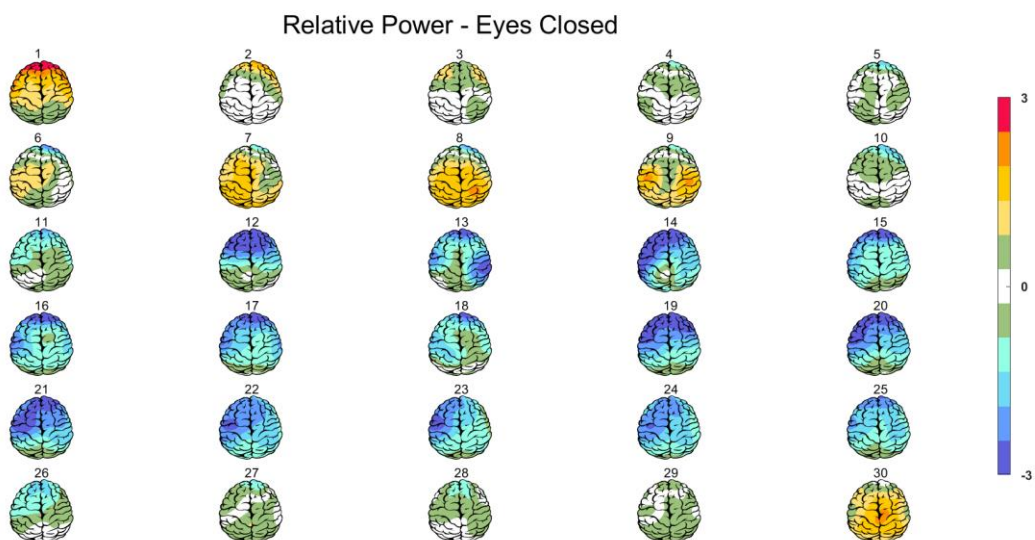
Arousal Level



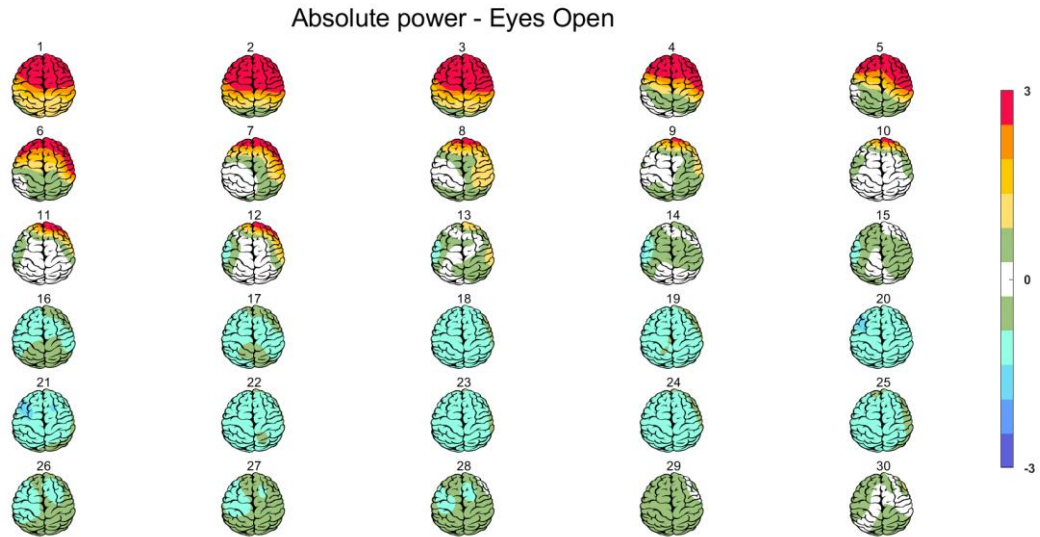
Absolute Power-Eye Closed (EC)



Relative Power-Eye Closed (EC)



Absolute Power-Eye Open (EO)



Relative Power-Eye Open (EO)

