

QEEG Clinical Report

EEGLens



The QEEG report is provided by NPCindex Company, operating under the QEEGhome brand.

Personal Data:

Name: Hamed Shams

Gender: Male

Age: 1986-09-11 - 39.2

Handedness: Right

Clinical Data:

Initial diagnosis: BMD-Substance Drug Abuse

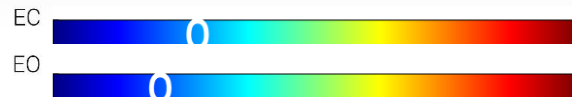
Medication: Clonidine-ES-citalopram-Lithium Carbonate

Date of Recording: 2025-10-15

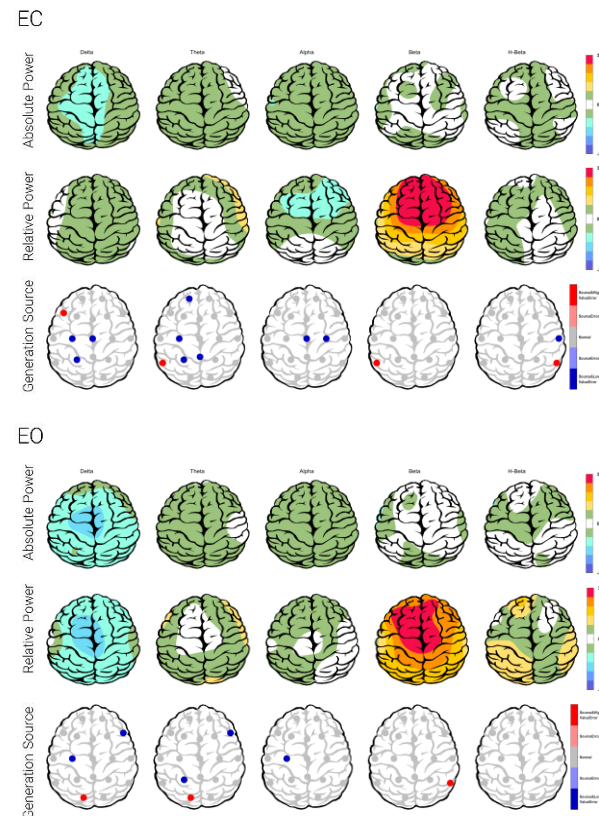
Source of Referral: Panah Clinic

This case belongs to Panah Clinic

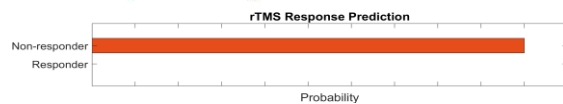
EEG Quality



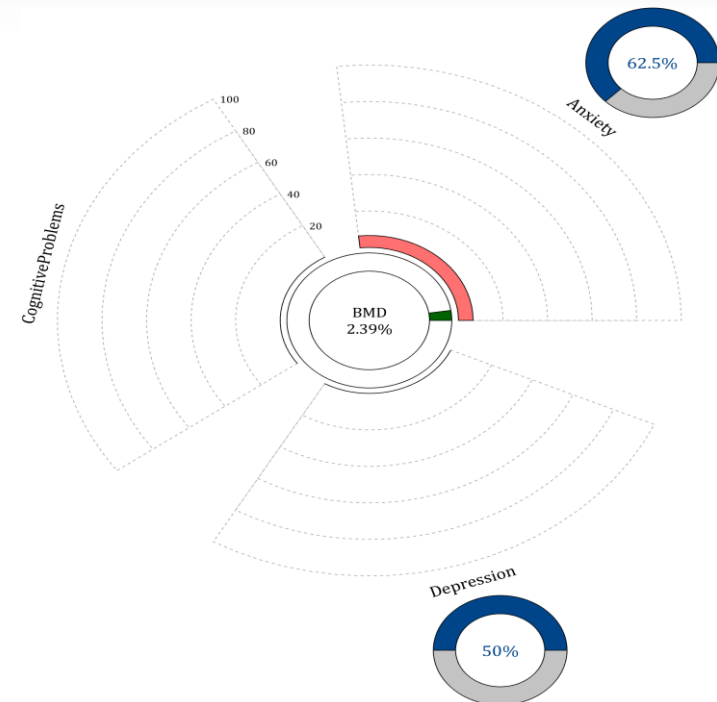
Z-score Information



TMS Responsibility



Pathological Assessment



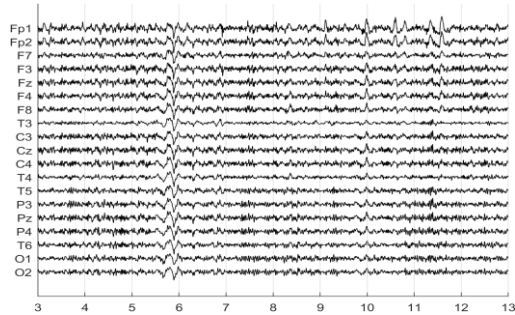
EEG Neuromarker Values

Neuromarker	Region	Value	Assessment
APF - EO	Frontal	10.83	High
AFP - EC	Frontal	11.25	High
APF - EO	Occipital	11.00	High
AFP - EC	Occipital	11.25	High
Arousal Level - EO	-	-	Normal
Arousal Level - EC	-	-	Normal

Denoising Information

Eye Close

Raw EEG



Rejected Channel



Total Recording Time Remaining:

134.26 sec

Number of Eye and Muscle Elements

Eye: 2

Muscle: 0

Low Artifact Percentage



High Artifact Percentage

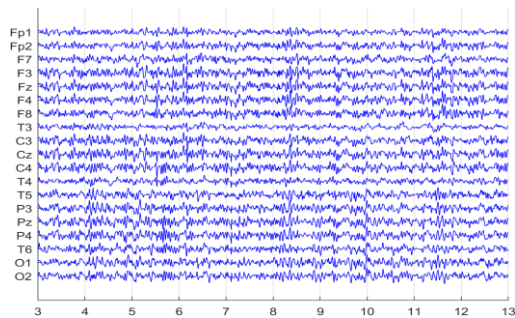


Total Artifact Percentage



EEG Quality: perfect

Denoised EEG

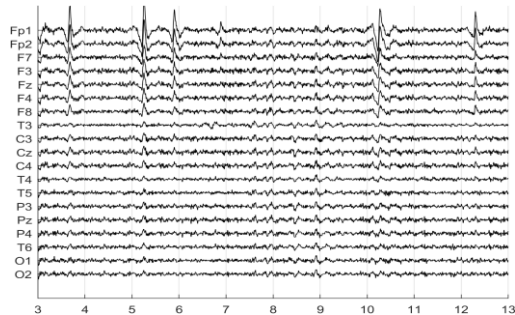


Flat Channel



Eye Open

Raw EEG



Rejected Channel



Total Recording Time Remaining:

149.50 sec

Number of Eye and Muscle Elements

Eye: 2

Muscle: 1

Low Artifact Percentage



High Artifact Percentage

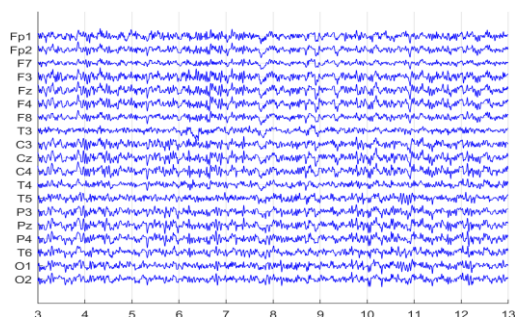


Total Artifact Percentage



EEG Quality: perfect

Denoised EEG

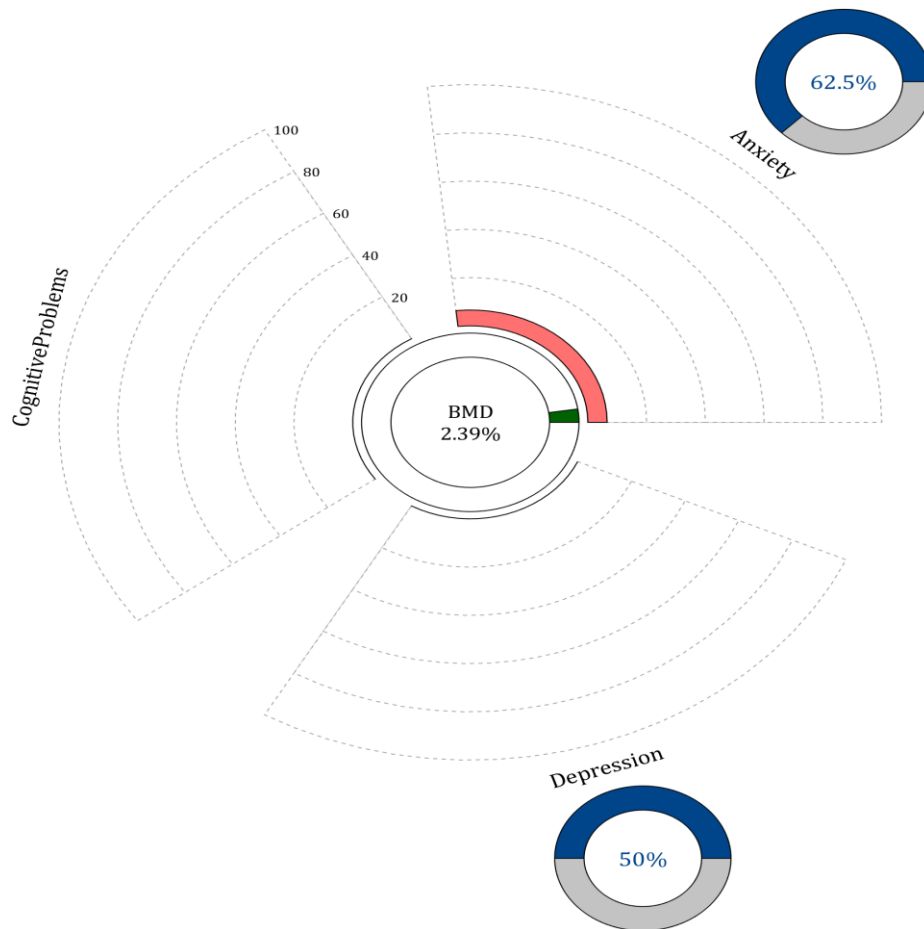


Flat Channel



Pathological Assessment

Main Diagnosis: Bipolar Mood Disorder



Description

According to the guidelines, the initial diagnosis of BMD could have comorbidities such as **alcohol abuse and anxiety**. It also differentially diagnoses with **depression and anxiety disorder**.

In the above graph, the **red area** shows the percentage of each comorbidity from your patient's EEG markers. Observe that each comorbidity marker is not unique and can be shared with other comorbidities.

Side circles in the above graph represent the differential diagnosis between depression and its misdiagnosis conditions based on your patient's EEG markers and trained artificial intelligence. The differential diagnosis probability is represented by the **bold blue bars** in the circles, and the probability of depression is represented by the **gray bars**.

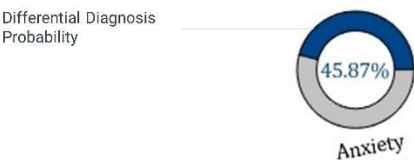
Note: In case your patient has drug abuse, obtain the substance abuse pathologic page of QEEGhome by registering the diagnosis under the initial diagnoses section of the website.

References:

Sadock, B. J., Sadock, V. A., & Ruiz, P. (Eds.). (2025). Kaplan and Sadock's comprehensive textbook of psychiatry (11th ed., Vols. 1–2). Wolters Kluwer
Sadock, B. J., Sadock, V. A., & Ruiz, P. (2022). Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry (12th ed.). Wolters Kluwer

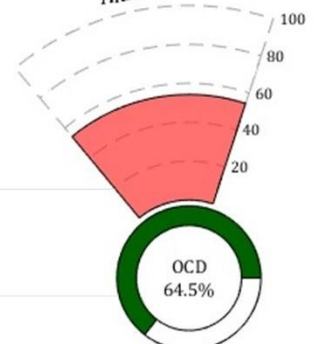
User Manual

Differential Diagnosis Probability



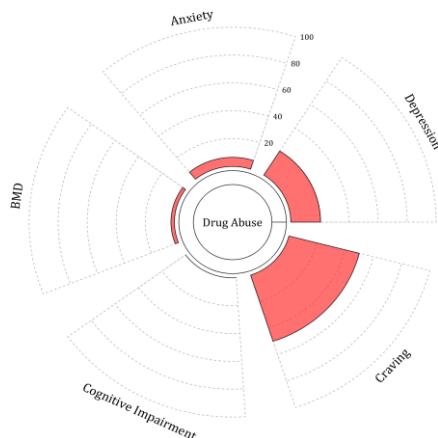
Comorbidity Percentage

Main Diagnosis Compatibility

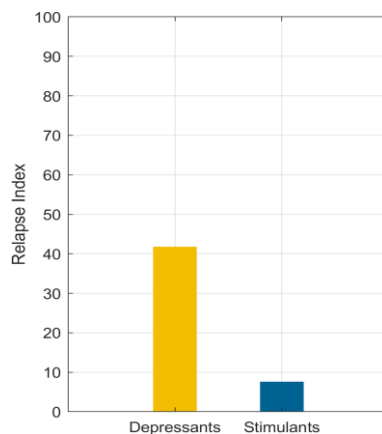


Pathological Assessment for Substance Abuse

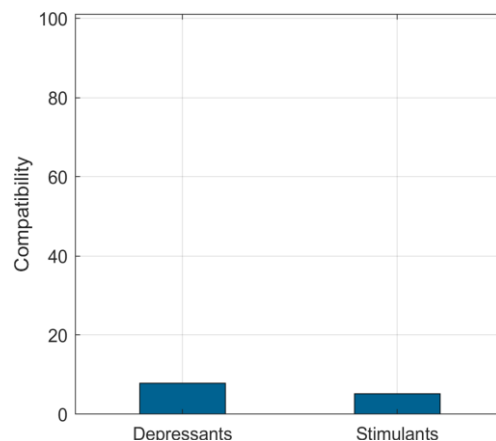
Comorbid Symptoms



Relapse Index

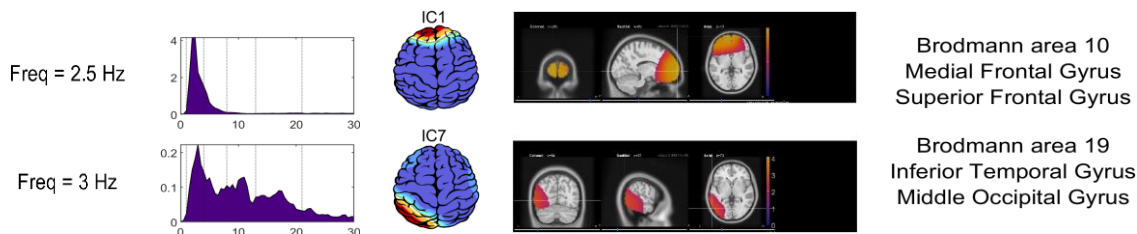


Substance Abuse Compatibility

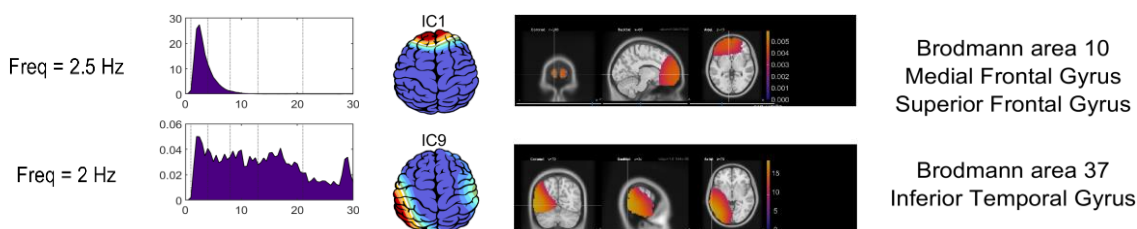


Functional Problems Source Detection

Eye Close



Eye Open

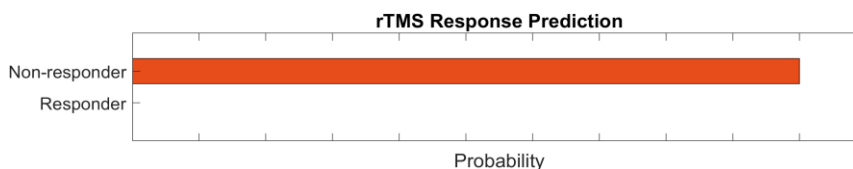
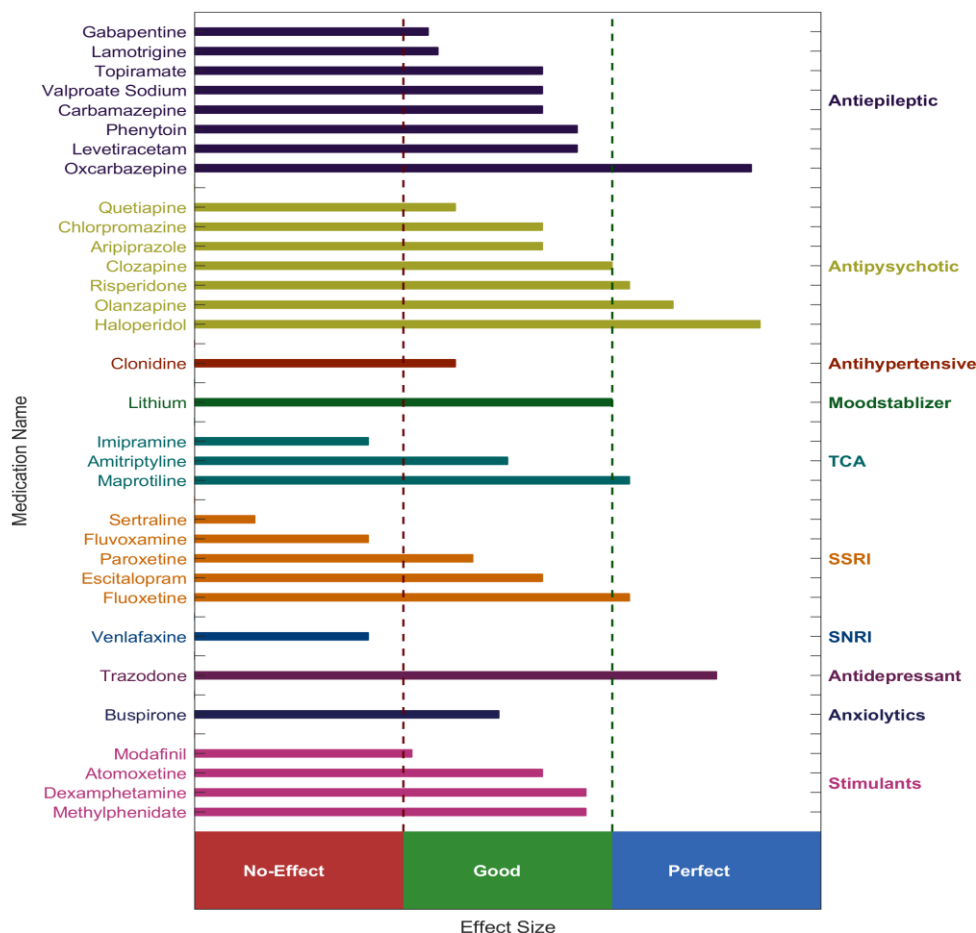


Note

The **Relapse** graph displays the relapse index based on a combination of EEG neuromarkers. It is valid only if the patient has used each of the substances included in the chart; otherwise, the index is not applicable.

The **Compatibility** graph shows how closely the patient's EEG neuromarkers match typical EEG changes caused by specific substances. It helps identify the dominant substance effect in cases of multiple drug use. This index is also valid only if the patient has actually used the substances represented.

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 Pharmac 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.

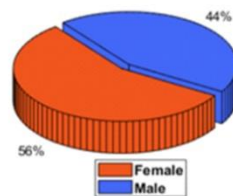
rTMS Response Prediction

Network Performance

Accuracy: 92.10%
Sensitivity: 89.13%
Specificity: 97.47%

Participants Information

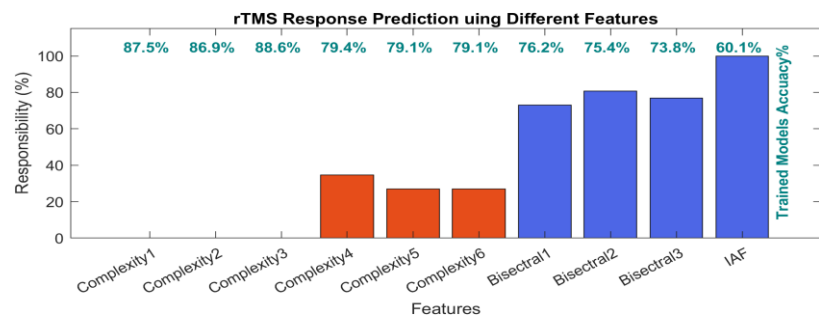
Distribution of Gender



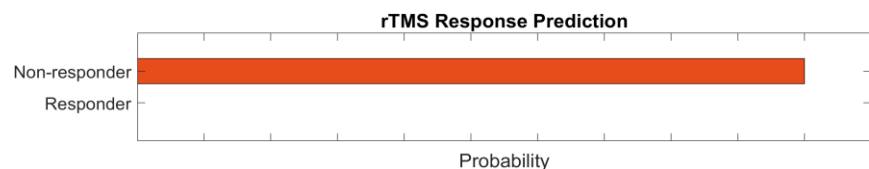
Distribution of Age



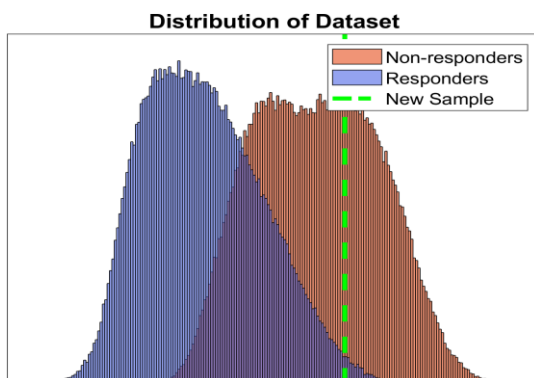
Features Information



Responsibility



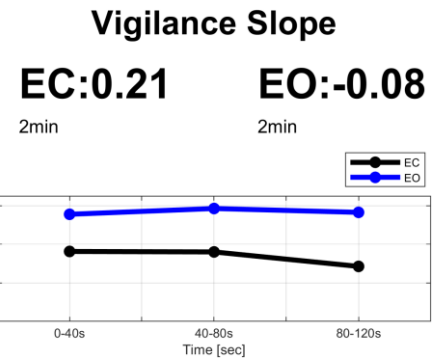
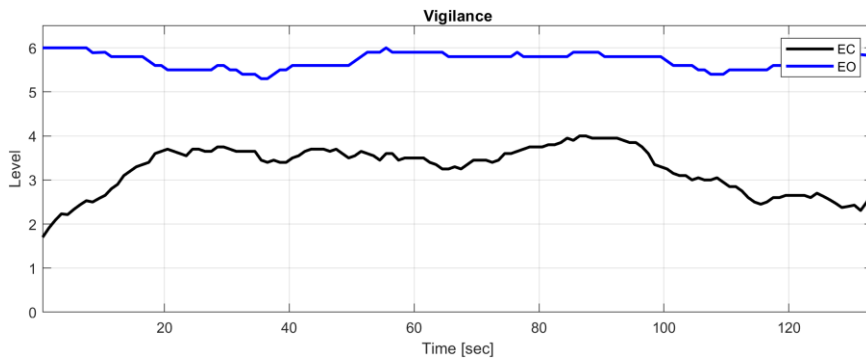
Data Distribution



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.

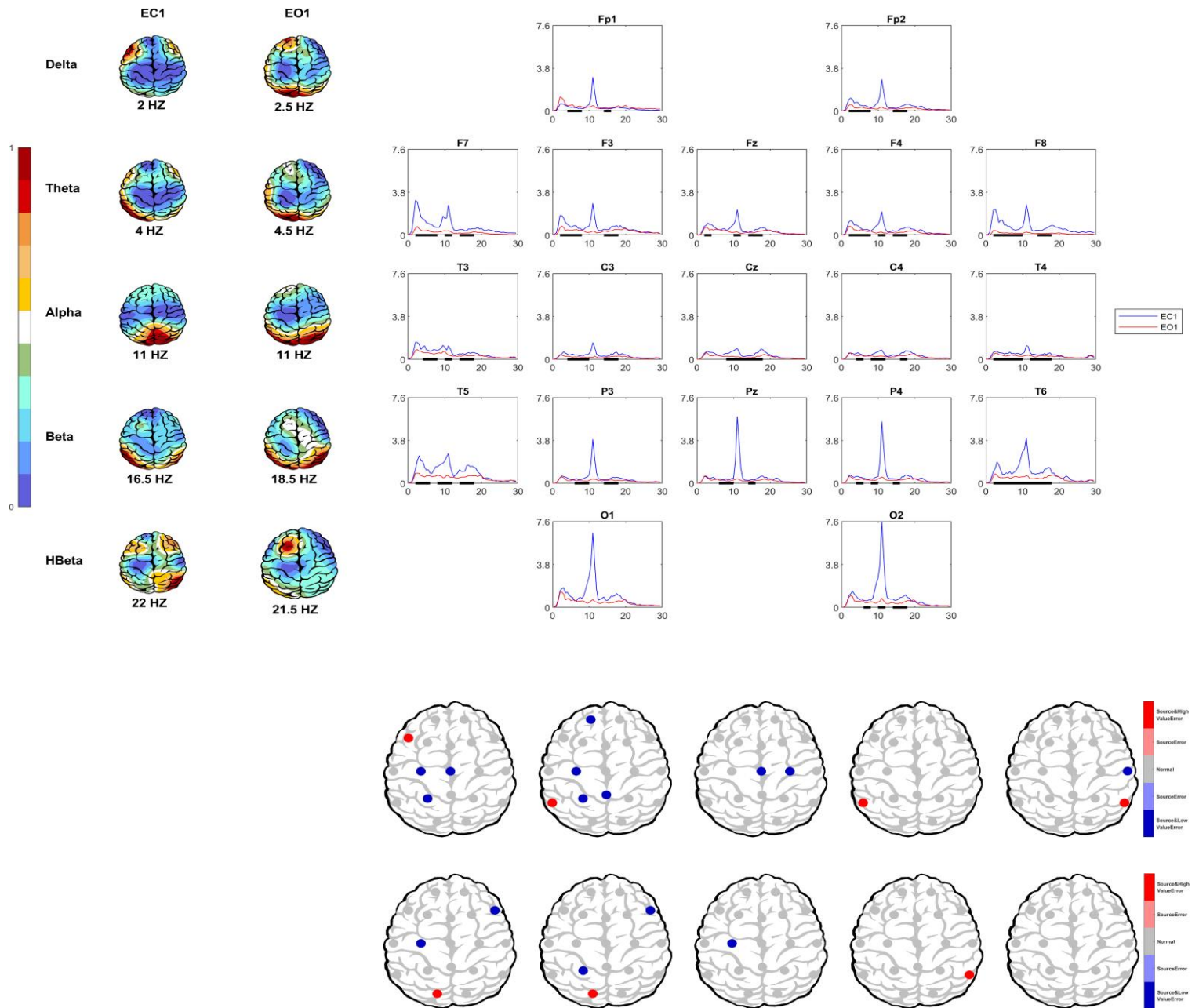
Vigilance



EEG Neuromarker Values

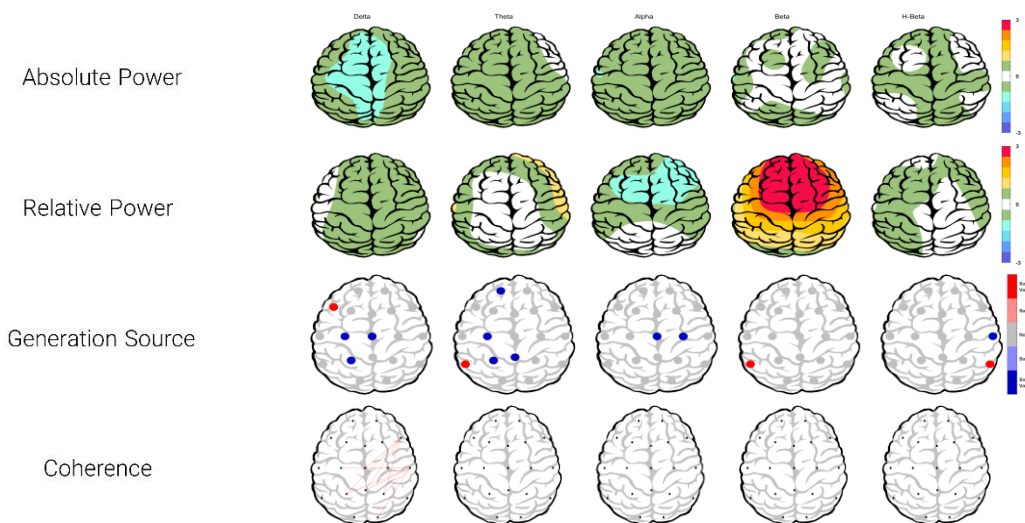
Neuromarker	Region	Value	Assessment
APF - EO	Frontal	10.83	High
AFP - EC	Frontal	11.25	High
APF - EO	Occipital	11.00	High
AFP - EC	Occipital	11.25	High
Alpha Asymmetry - EO	Frontal	00.11	Anxiety
Alpha Asymmetry - EC	Frontal	00.09	Anxiety
Alpha Asymmetry - EO	Occipital	00.06	Anxiety
Alpha Asymmetry - EC	Occipital	-0.05	Anhedonia
Beta Asymmetry - EO	Frontal	00.23	Anhedonia
Beta Asymmetry - EC	Frontal	00.14	Anhedonia
Alpha Blocking	-	-	Not Observed
Arousal Level - EO	-	-	Normal
Arousal Level - EC	-	-	Normal
Vigilance Level - EO	-	06.00	Normal
Vigilance Level - EC	-	04.00	Normal
Vigilance Mean - EO	-	05.72	Normal
Vigilance Mean - EC	-	03.26	Normal
Vigilance Regulation - EO	-	-0.08	Normal
Vigilance Regulation - EC	-	00.21	Normal
Vigilance 0 Stage (%) - EO	-	85.82	High
Vigilance 0 Stage (%) - EC	-	00.00	Normal
Vigilance A1 Stage (%) - EO	-	00.00	-
Vigilance A1 Stage (%) - EC	-	10.45	-

EEG Spectra

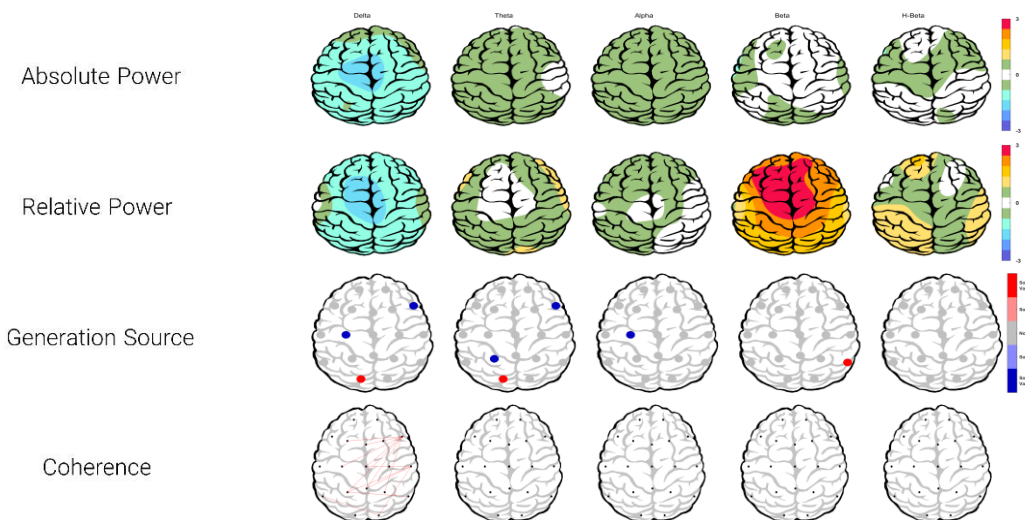


Z Score Summary Information

■ Eye Close

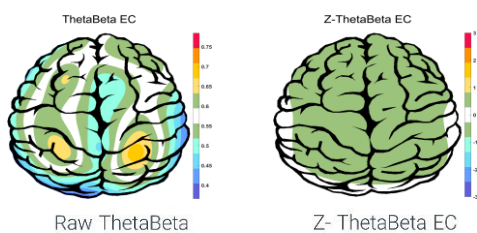


■ Eye Open

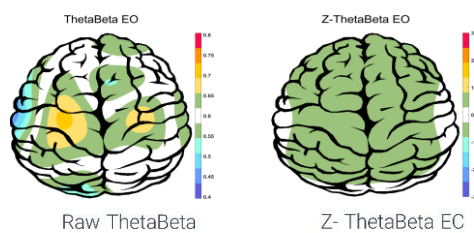


Theta/Beta Ratio

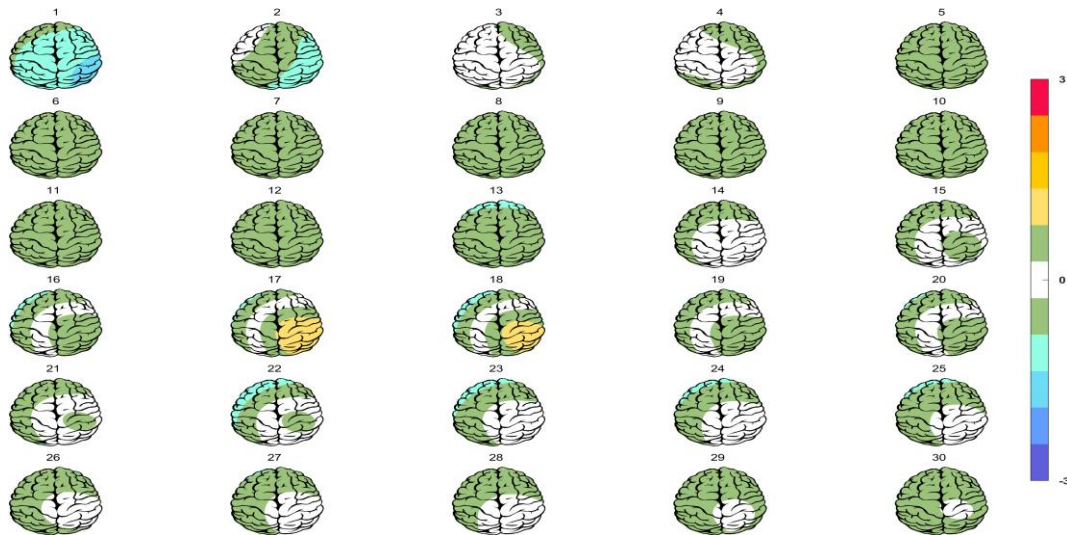
■ Eye Close



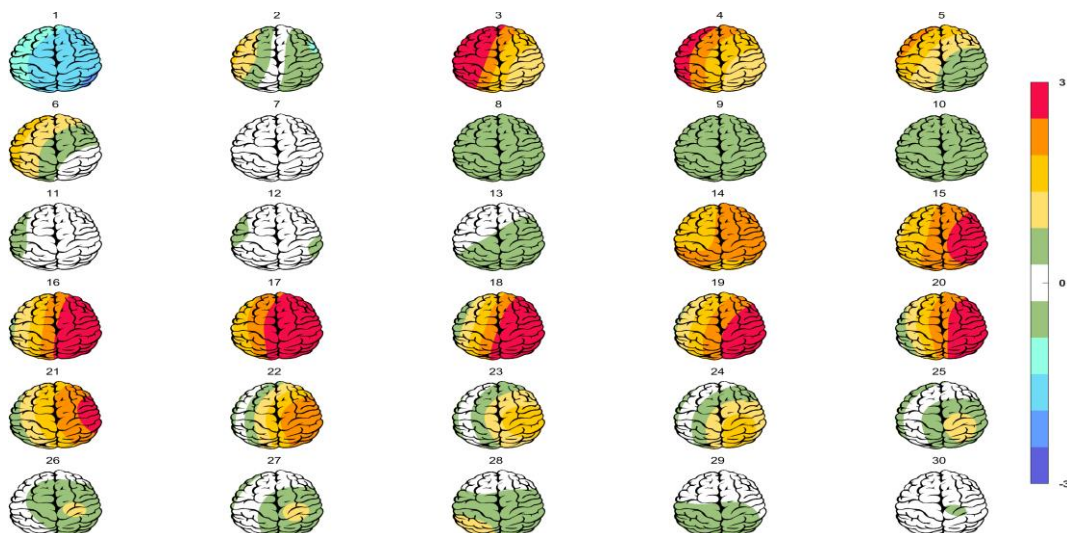
■ Eye Open



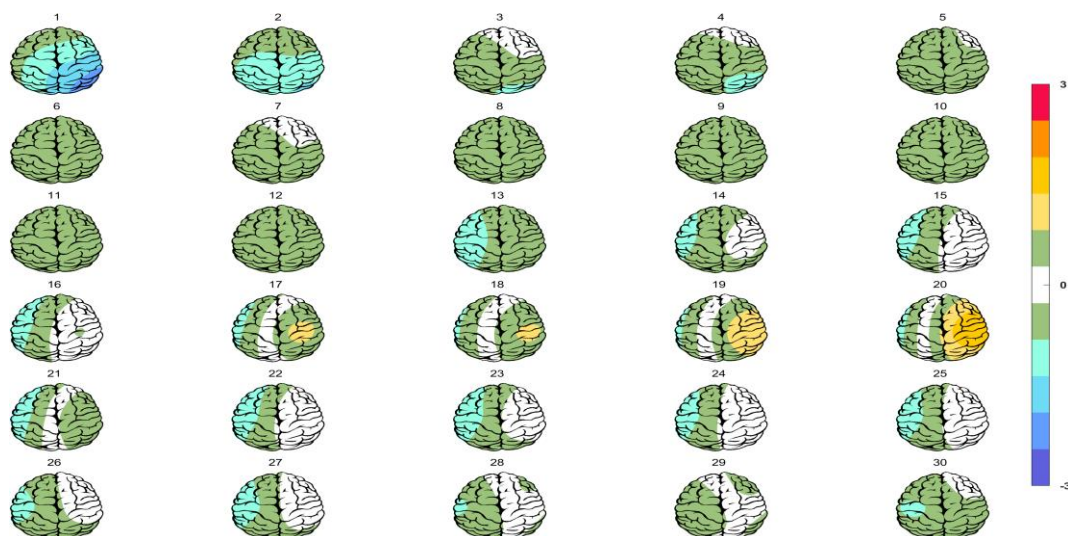
Absolute Power-Eye Close



Relative Power-Eye Close



Absolute Power-Eye Open



Relative Power-Eye Open

