

# QEEG Clinical Report

EEGLens



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

## Personal Data:

Name: Moein Barkhordary

Gender: Male

Age: 2004-07-12 - 21.4

Handedness: Right

## Clinical Data:

Initial diagnosis: Anxiety-Attention and Concentration Problem-Memory

Medication: -

Date of Recording: 2025-10-23

Source of Referral: Dr Sajjadi

This case belongs to Dr Sajjadi

Figure 1 displays topographic maps of EEG power and source localization for five frequency bands (Delta, Theta, Alpha, Beta, H-Beta) across three conditions (Absolute Power, Relative Power, Generation Source). The maps are arranged in a 3x5 grid. The columns represent the frequency bands, and the rows represent the conditions. The topographic maps show power distribution across the scalp, with color scales indicating power levels. The Generation Source maps show the localization of power to specific brain regions, with color scales indicating the strength of the source.

Figure 1 displays topographic maps of absolute and relative power for five frequency bands (Delta, Theta, Alpha, Beta, H-Beta) across three generation sources (Absolute Power, Relative Power, Generation Source). The maps show top-down views of the brain with color-coded power levels. A color bar on the right indicates the scale for each row. The Generation Source row shows specific electrode locations for each band.

| Group         | Probability |
|---------------|-------------|
| Non-responder | ~0.75       |
| Responder     | ~0.65       |

The figure is a circular gauge chart representing the distribution of mental health conditions. The central gauge is divided into four segments, each representing a different condition and its percentage of the total. The segments are labeled with their respective conditions and percentages: Anxiety (59.11%, green), Depression (44.44%, blue), Schizophrenia (44.44%, blue), and OCD (44.44%, blue). The gauge has a scale from 0 to 100 on the right side, with major ticks at 20, 40, 60, 80, and 100. The segments are separated by dashed lines, and the entire chart is set against a light gray background.

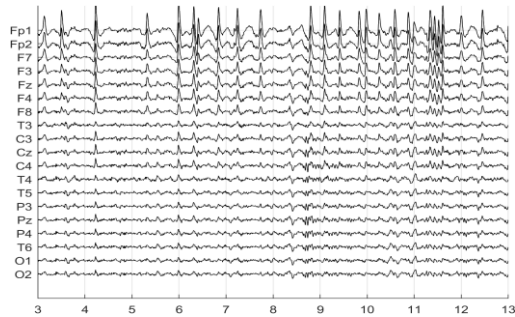
| Mental Health Condition | Percentage |
|-------------------------|------------|
| Anxiety                 | 59.11%     |
| Depression              | 44.44%     |
| Schizophrenia           | 44.44%     |
| OCD                     | 44.44%     |

| Neuromarker        | Region    | Value | Assessment |
|--------------------|-----------|-------|------------|
| APF - EO           | Frontal   | 11.17 | High       |
| AFP - EC           | Frontal   | 09.75 | Normal     |
| APF - EO           | Occipital | 11.38 | High       |
| AFP - EC           | Occipital | 10.12 | Normal     |
| Arousal Level - EO | -         | -     | Normal     |
| Arousal Level - EC | -         | -     | Low        |

## Denoising Information

Eye Close

Raw EEG



Rejected Channel



**Total Recording Time Remaining:**

143.99 sec

**Number of Eye and Muscle Elements**

Eye: 2

Muscle: 0

Low Artifact Percentage



High Artifact Percentage

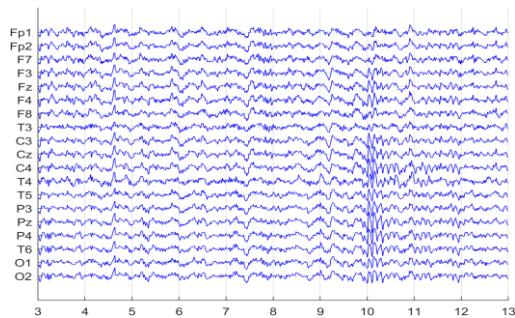


Total Artifact Percentage



**EEG Quality:** perfect

Denoised EEG

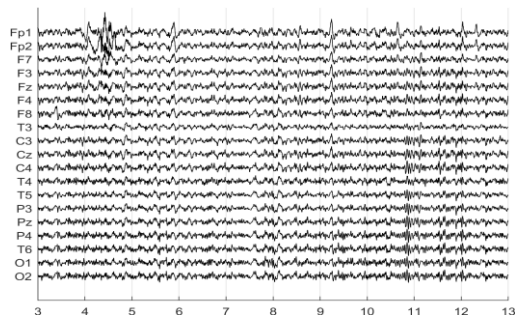


Flat Channel



Eye Open

Raw EEG



Rejected Channel



**Total Recording Time Remaining:**

232.05 sec

**Number of Eye and Muscle Elements**

Eye: 2

Muscle: 0

Low Artifact Percentage



High Artifact Percentage

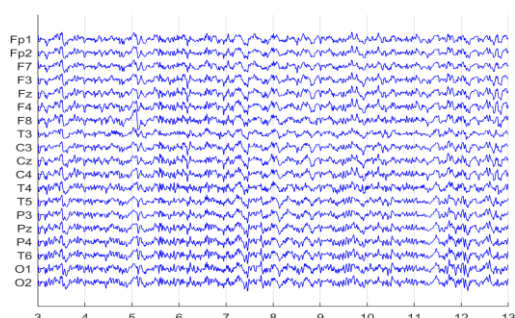


Total Artifact Percentage



**EEG Quality:** perfect

Denoised EEG

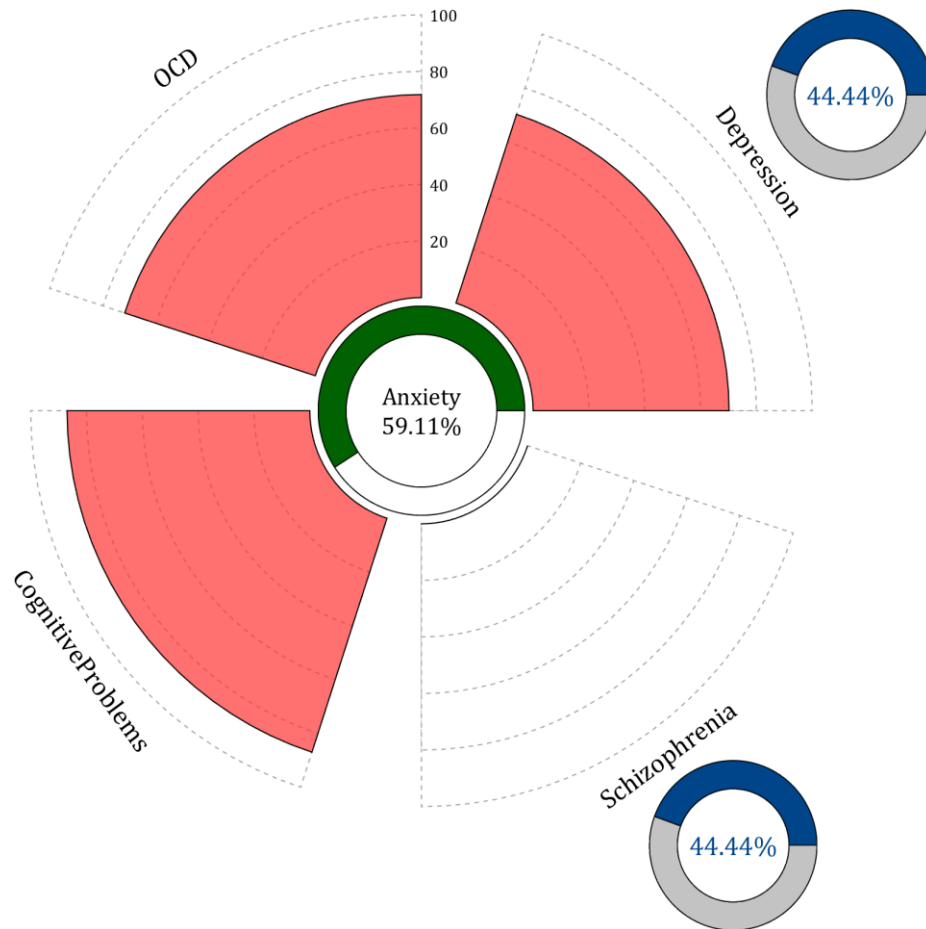


Flat Channel



## Pathological Assessment

Main Diagnosis: Anxiety Disorder



### Description

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

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

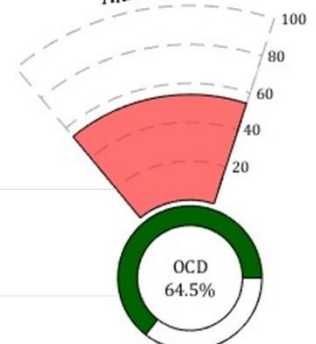
### User Manual

Differential Diagnosis Probability



Comorbidity Percentage

Main Diagnosis Compatibility



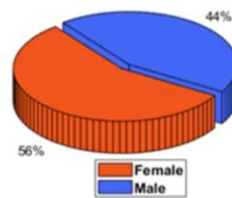
## rTMS Response Prediction

### Network Performance

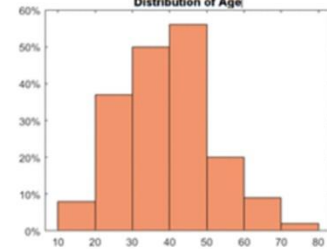
Accuracy: 92.10%  
Sensitivity: 89.13%  
Specificity: 97.47%

### Participants Information

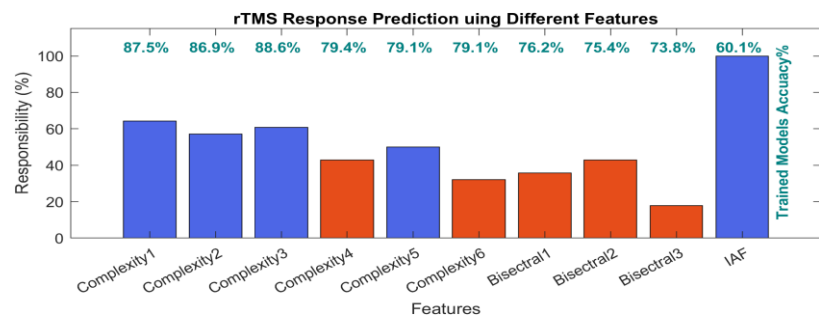
Distribution of Gender



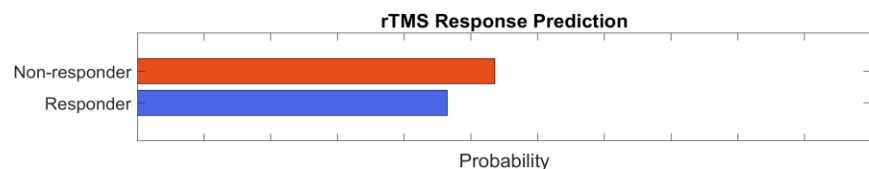
Distribution of Age



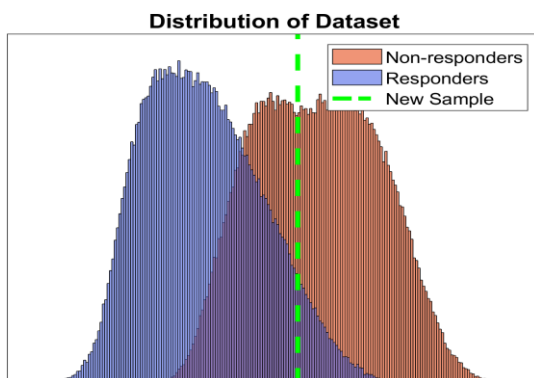
### Features Information



### Responsibility



### Data Distribution

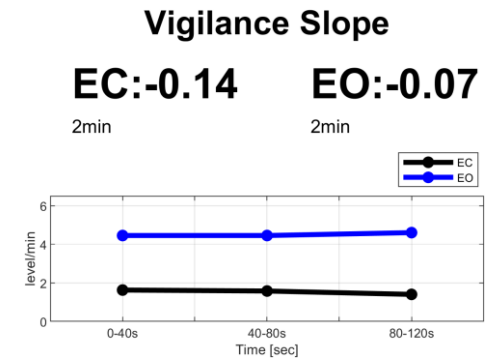
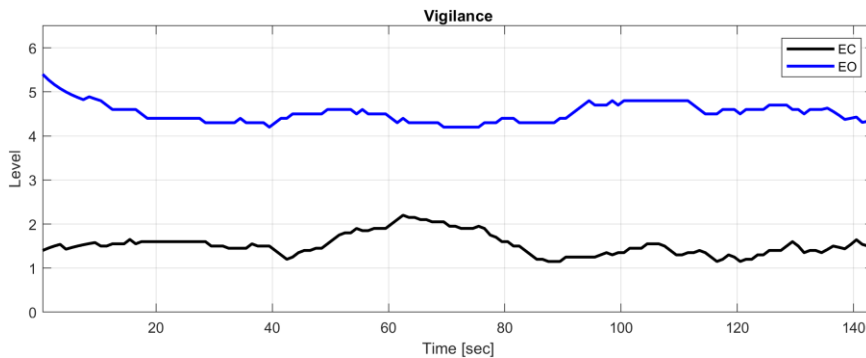


### About Predicting rTMS Response

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.



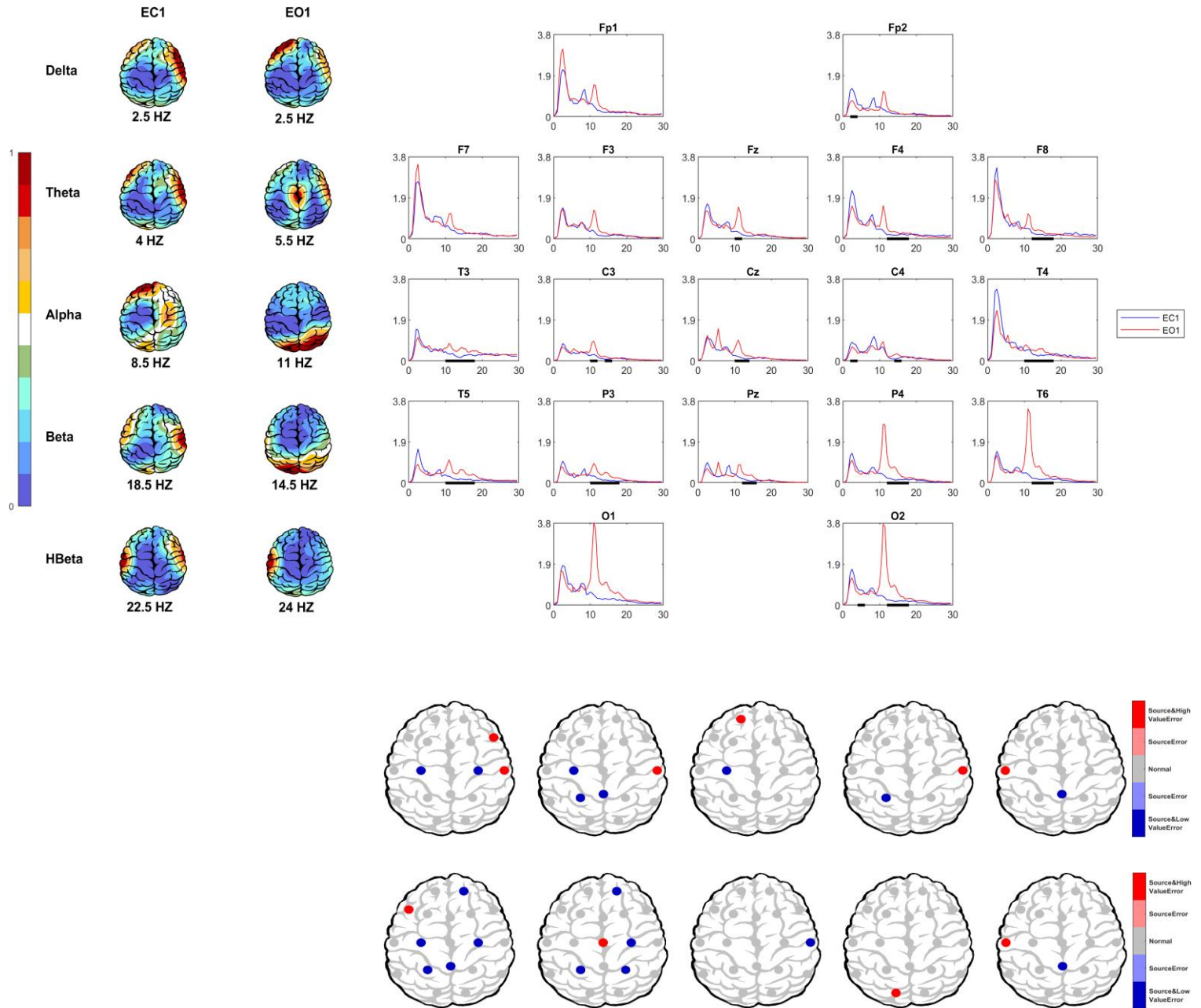
## Vigilance



## EEG Neuromarker Values

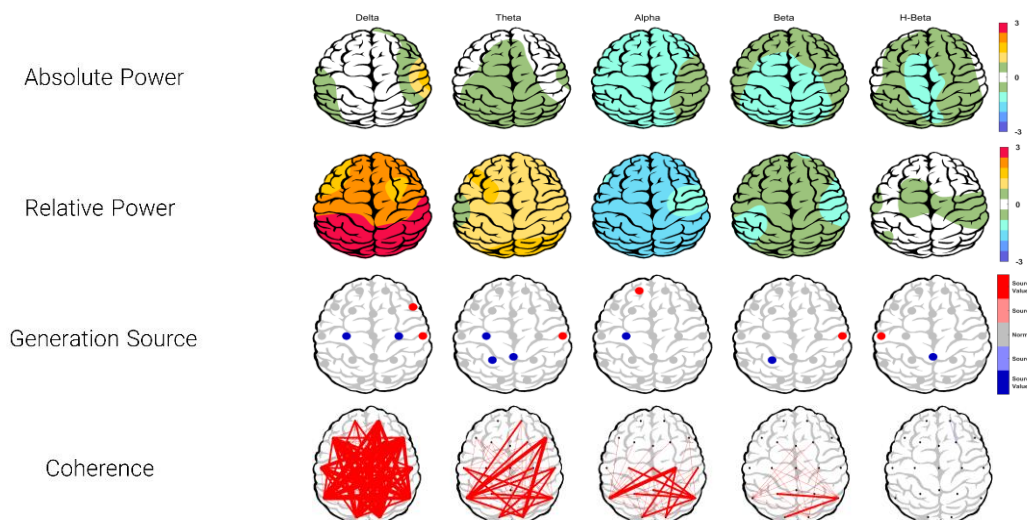
| Neuromarker                 | Region    | Value | Assessment |
|-----------------------------|-----------|-------|------------|
| APF - EO                    | Frontal   | 11.17 | High       |
| APF - EC                    | Frontal   | 09.75 | Normal     |
| APF - EO                    | Occipital | 11.38 | High       |
| APF - EC                    | Occipital | 10.12 | Normal     |
| Alpha Asymmetry - EO        | Frontal   | -0.07 | Anhedonia  |
| Alpha Asymmetry - EC        | Frontal   | -0.06 | Anhedonia  |
| Alpha Asymmetry - EO        | Occipital | 00.06 | Anxiety    |
| Alpha Asymmetry - EC        | Occipital | 00.11 | Anxiety    |
| Beta Asymmetry - EO         | Frontal   | -0.09 | Anxiety    |
| Beta Asymmetry - EC         | Frontal   | -0.20 | Anxiety    |
| Alpha Blocking              | O2        | -     | Observed   |
| Arousal Level - EO          | -         | -     | Normal     |
| Arousal Level - EC          | -         | -     | Low        |
| Vigilance Level - EO        | -         | 04.00 | Normal     |
| Vigilance Level - EC        | -         | 02.00 | Low        |
| Vigilance Mean - EO         | -         | 04.53 | Normal     |
| Vigilance Mean - EC         | -         | 01.52 | Low        |
| Vigilance Regulation - EO   | -         | -0.07 | Normal     |
| Vigilance Regulation - EC   | -         | -0.14 | Normal     |
| Vigilance 0 Stage (%) - EO  | -         | 26.39 | Normal     |
| Vigilance 0 Stage (%) - EC  | -         | 00.00 | Normal     |
| Vigilance A1 Stage (%) - EO | -         | 00.00 | -          |
| Vigilance A1 Stage (%) - EC | -         | 00.00 | -          |

## EEG Spectra

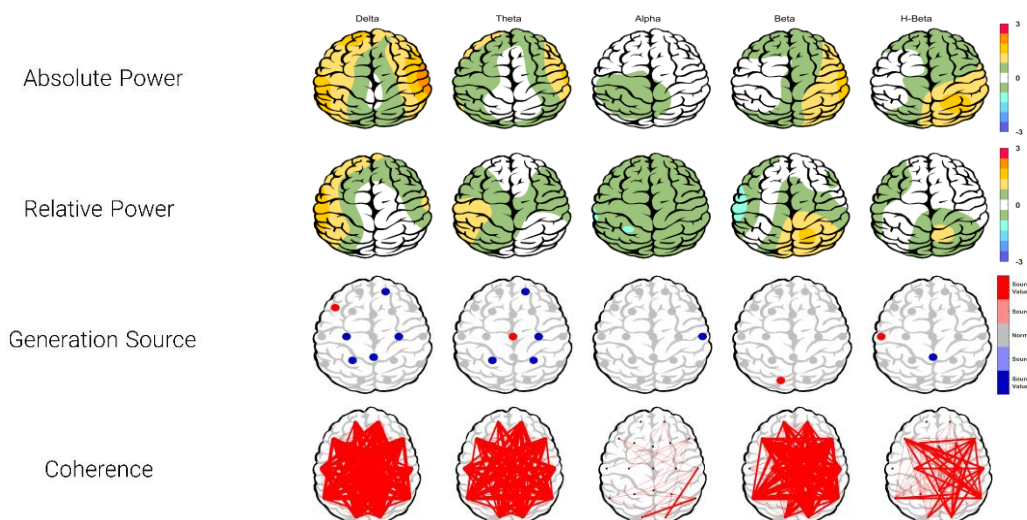


## Z Score Summary Information

### Eye Close

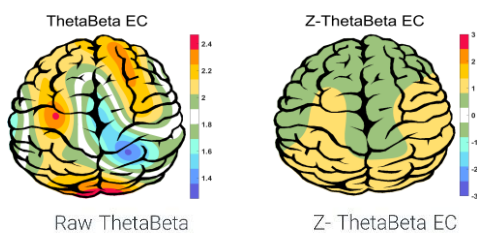


### Eye Open

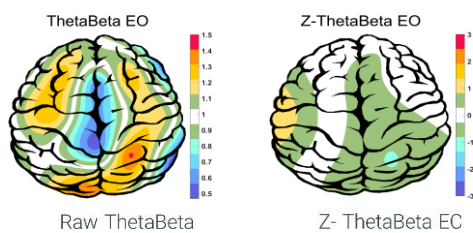


## Theta/Beta Ratio

### Eye Close

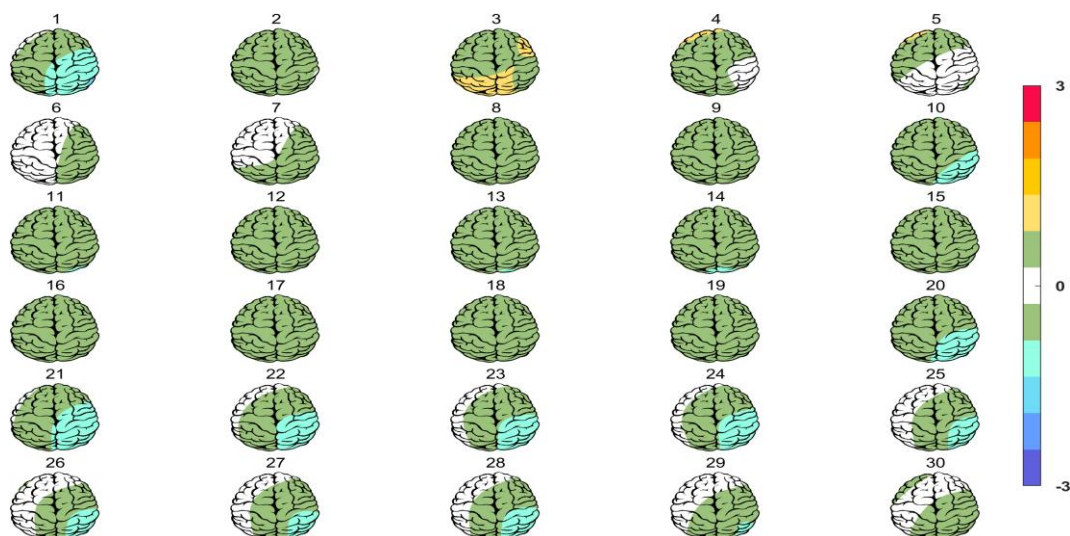


### Eye Open

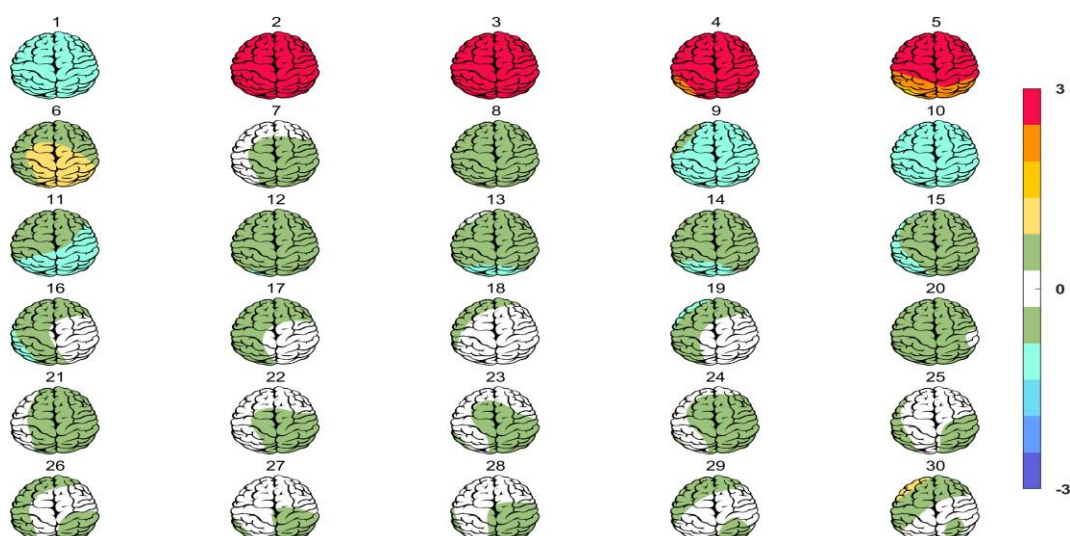




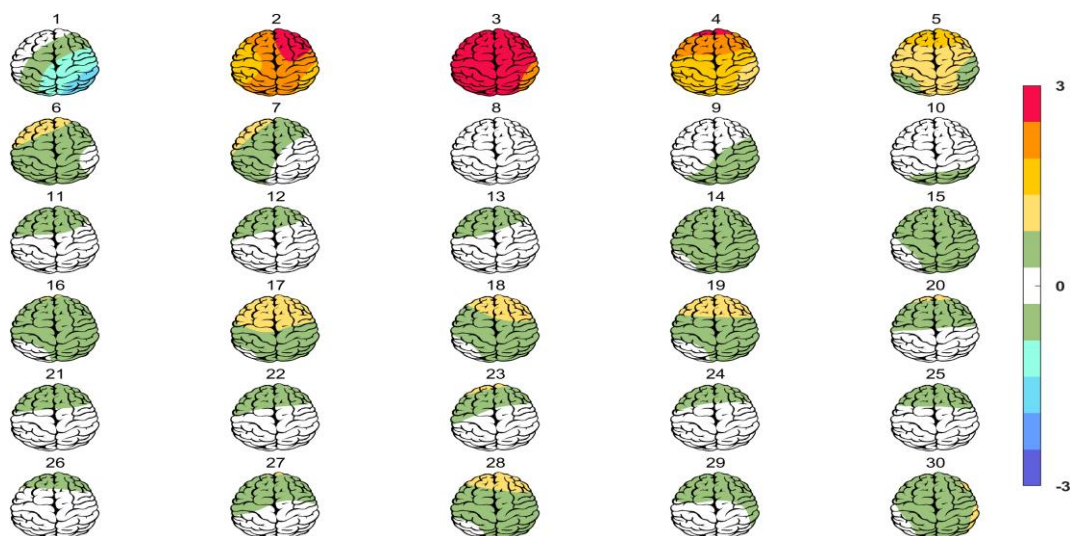
## Absolute Power-Eye Close



## Relative Power-Eye Close



## Absolute Power-Eye Open



## Relative Power-Eye Open

