# LabNeuro

Client Assessment (**11010621**)

Birth date 27 Jan 1978 (age 38 years; male)

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This report is for clinicians only

## CONTENTS OF THIS REPORT



### Important Information

Reference: NF 2781 3311 Test Date: 22 Jan 2017 Report Date: 22 Jan 2017

This report provides indications of brain function and cognition as compared directly or indirectly to a normative database. It is not to be used as a basis for action without consideration by a competent relevant professional. Patients should always seek the advice of a trained health professional or relevant specialist regarding any highlighted variances within this report before any treatment or action is taken.

**This report is not intended to be used in any way on its own to diagnose, select treatment or cure any health condition.**

This report does not establish any physician-patient relationship or supplant any in-person medical consultation or examination. Patients should always seek appropriate medical attention for specific ailments.

Patients should not disregard professional medical advice or delay seeking medical treatment as a result of findings contained within this report.

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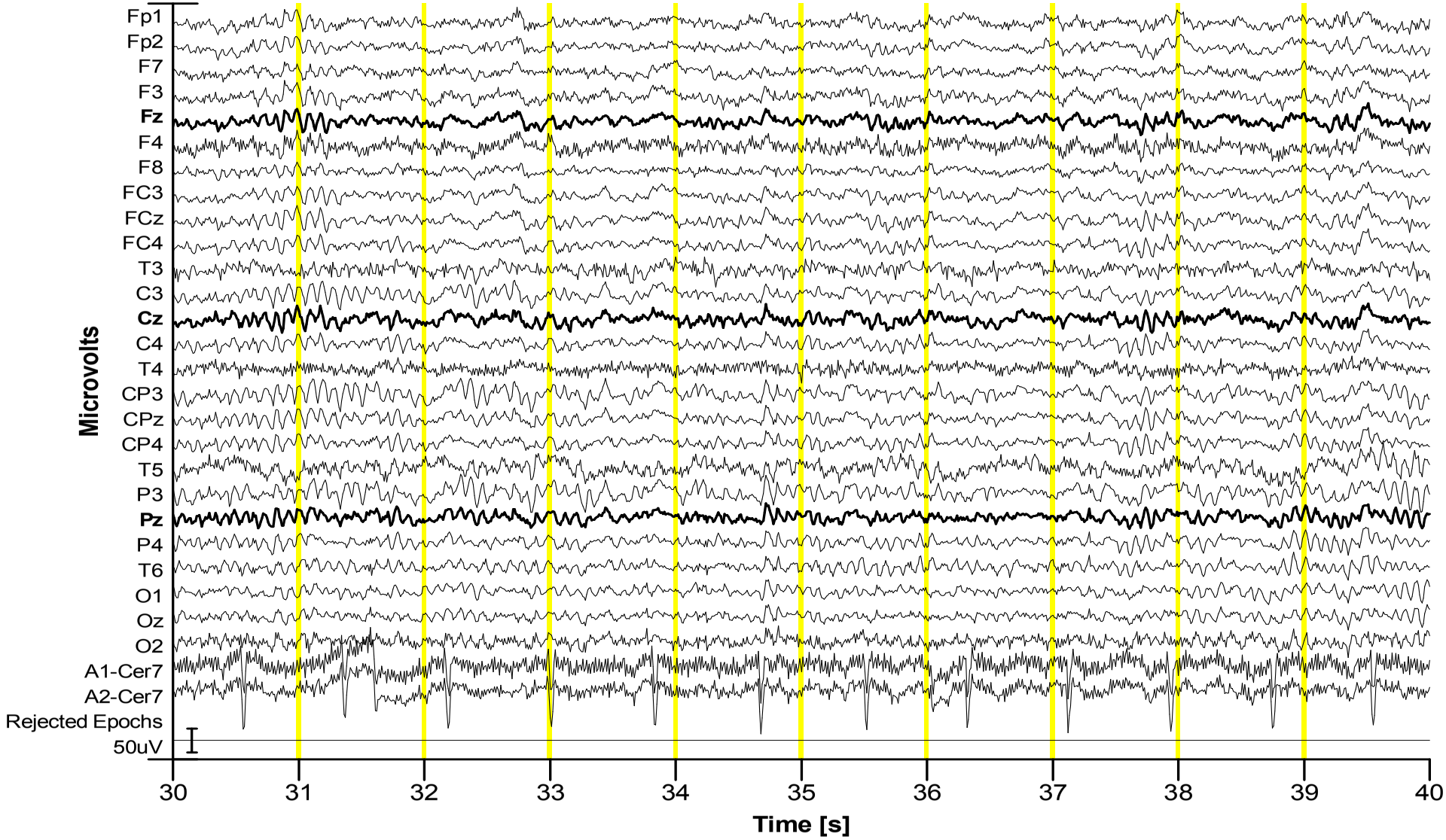
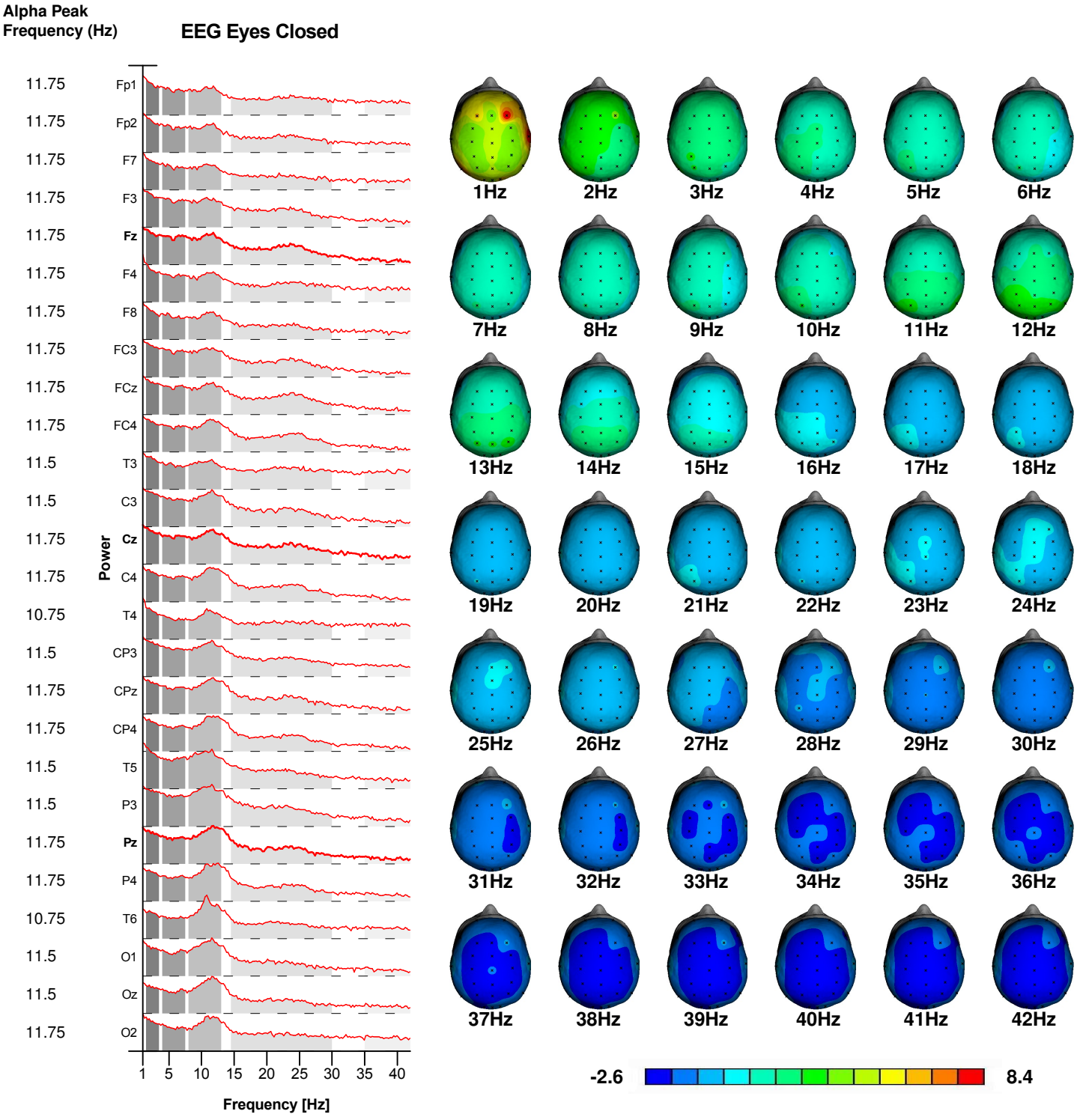
# 1. EEGs Eyes Closed

## 1.1 Raw EEG Data - Eyes Closed (with artefact rejected epochs indicated as a solid line)



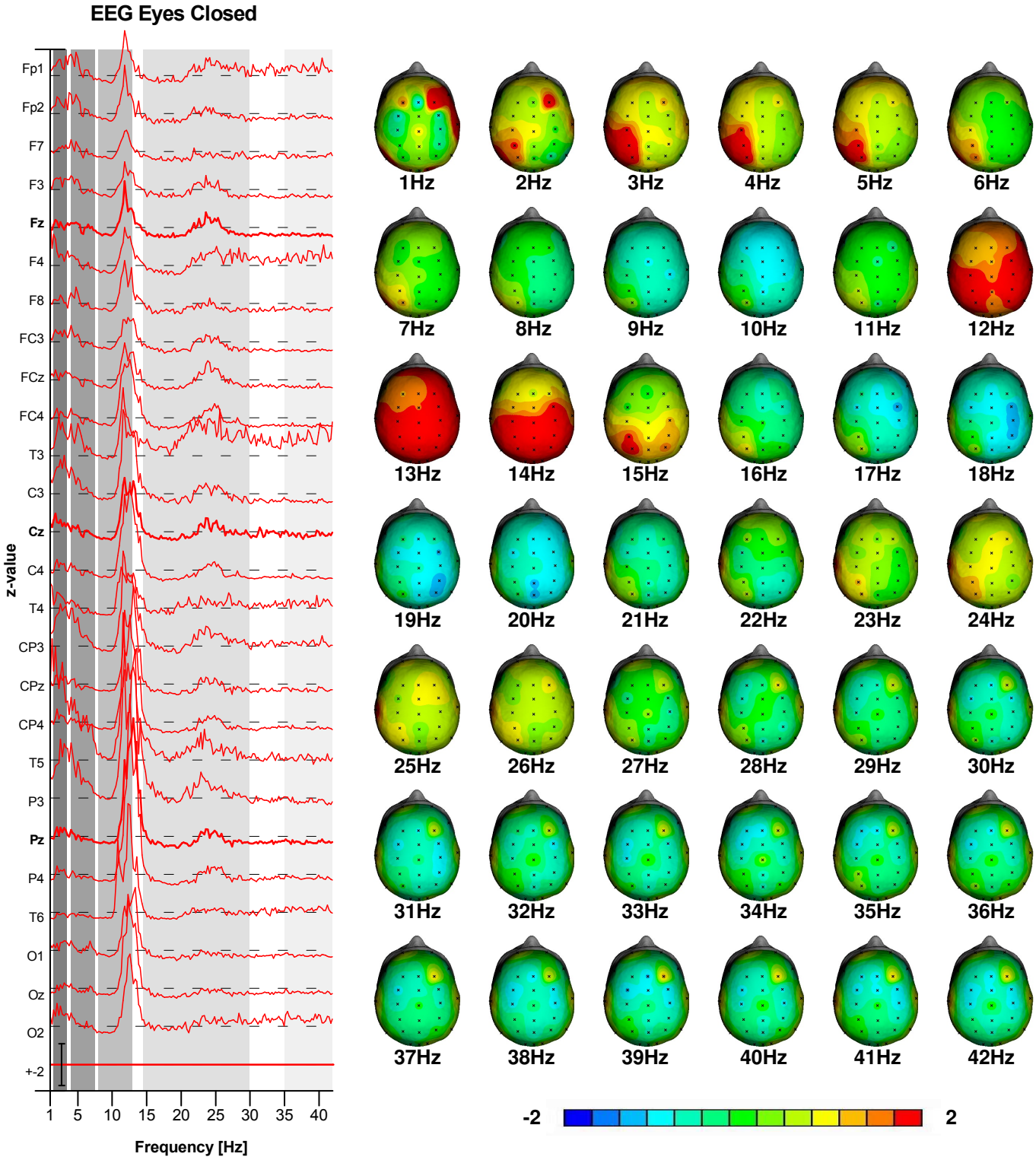

Clinician Comment: Signature: Date:

# 1.2 Topographs of Spectral Analysis - Eyes Closed (log magnitude)




Plots of resting power spectra at each site and qEEG brain topography across 1 Hz bins illustrating the distribution of power across the scalp measured at each frequency in log $\mu V^2$. A colored scale is shown at the bottom right of the topography figures, illustrating power magnitudes. Dark-blue to light-blue colors refer to very low power levels, aqua to light-green to yellow colors refer to medium power levels, and orange to red refer to high power levels.

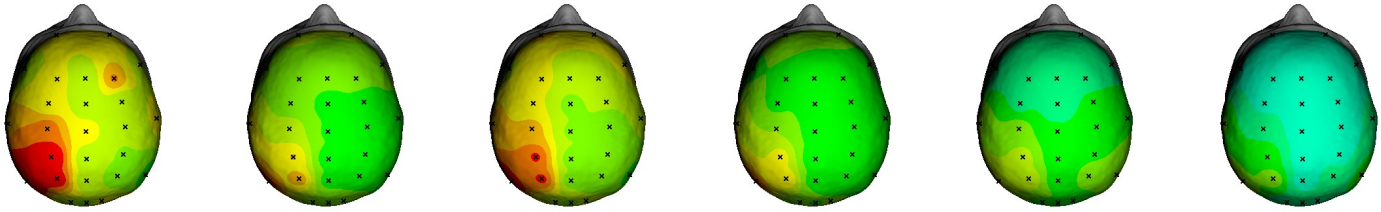
# 1.3 Topographs of Spectral Analysis - Eyes Closed (log magnitude, z-score)



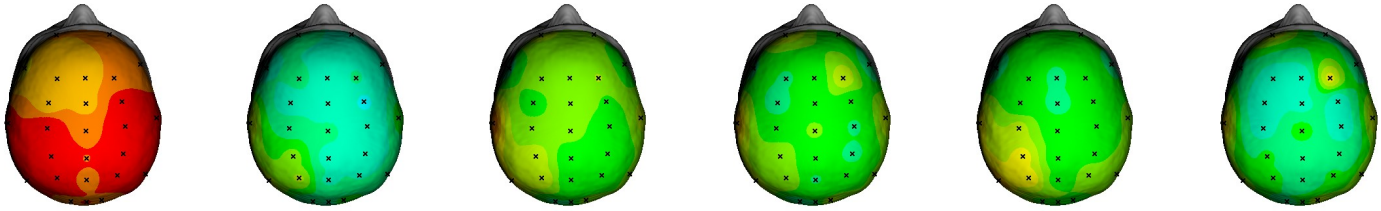

Plots of resting power spectra at each site and qEEG brain topography across 1 Hz bins illustrating the distribution of power across the scalp in z-score deviations compared to a healthy control group. In the power spectra plots (left figure) z-score deviation is shown relative to an average center (dashed) line for each site. The z-score units are illustrated at the bottom of the figure. A colored z-score scale is shown at the bottom right of the topography figures. Dark-blue colors refer to -2 z-scores ranging through to light-blue colors to light-green colors representing $\sim$ 0 z-scores (mean), to red colors representing +2 z-scores.

## 1.4 Power Z Scores - Eyes Closed

Delta (1.5-3.5 Hz) Theta (4-7.5 Hz) Theta1 (4-5 Hz), Theta2 (5-7.5 Hz) Alpha (8-13 Hz) Alpha1 (8-11 Hz)



Alpha2 (11-13 Hz) Beta1 (14.5-20 Hz) Beta2 (20-25 Hz) Beta3 (25-30 Hz) Total (1.5-30 Hz) Gamma (31-49 Hz)




If the data is not applicable or missing at a site, that site is not shown.

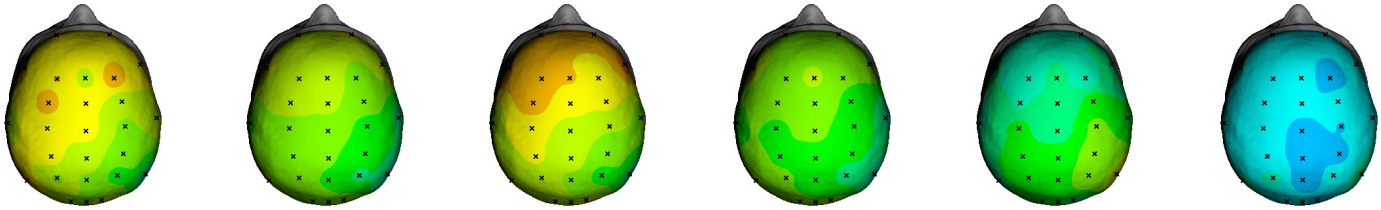
| Site | Z Score | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Delta | Theta | Theta1 | Theta2 | Alpha | Alpha1 | Alpha2 | Beta1 | Beta2 | Beta3 | Total | Gamma |
| Fp1 | 1.25 | 0.73 | 1.36 | 0.44 | -0.25 | -0.57 | 1.66 | -0.34 | 0.68 | 0.92 | 0.11 | 0.77 |
| Fp2 | 1.16 | 0.63 | 1.25 | 0.39 | -0.29 | -0.66 | 1.73 | -0.72 | 0.22 | -0.07 | -0.05 | -0.24 |
| F7 | 0.41 | 0.26 | 0.82 | 0.1 | -0.47 | -0.72 | 1.17 | -0.69 | -0.36 | -0.28 | -0.39 | -0.25 |
| F3 | 1.01 | 0.4 | 1.06 | 0.17 | -0.38 | -0.67 | 1.27 | -0.41 | 0.32 | -0.21 | -0.08 | -0.66 |
| Fz | 0.55 | 0.25 | 0.65 | 0.1 | -0.43 | -0.79 | 1.43 | -0.89 | 0.33 | -0.1 | -0.23 | -0.83 |
| F4 | 1.69 | 0.3 | 0.83 | 0.14 | -0.36 | -0.82 | 1.64 | -0.5 | 0.56 | 0.88 | 0.04 | 1.04 |
| F8 | 0.63 | 0.27 | 1.05 | -0.01 | -0.32 | -0.76 | 1.88 | -0.69 | -0.12 | -0.52 | -0.27 | -0.42 |
| FC3 | 1 | 0.28 | 0.93 | 0.08 | -0.29 | -0.64 | 1.32 | -0.83 | 0.01 | -0.36 | -0.13 | -0.89 |
| FCz | 0.61 | 0.04 | 0.43 | -0.05 | -0.42 | -0.88 | 1.48 | -0.83 | 0.4 | 0.12 | -0.3 | -0.63 |
| FC4 | 0.54 | 0.05 | 0.55 | -0.08 | -0.1 | -0.7 | 2.26 | -0.97 | 0.15 | -0.09 | -0.13 | -0.85 |
| T3 | 1.56 | 1.08 | 1.5 | 0.93 | 0.59 | 0.22 | 2.16 | 0.88 | 1.92 | 1.51 | 1.07 | 1.32 |
| C3 | 1.88 | 0.75 | 1.43 | 0.55 | 0.38 | -0.23 | 2.51 | -0.28 | 0.25 | -0.01 | 0.66 | -0.71 |
| Cz | 1.06 | 0.16 | 0.51 | 0.07 | -0.16 | -0.74 | 1.8 | -0.49 | 0.29 | 0.23 | -0.04 | -0.02 |
| C4 | 0.59 | 0.05 | 0.45 | -0.05 | 0.13 | -0.67 | 2.55 | -0.81 | -0.01 | -0.22 | 0.02 | -0.75 |
| T4 | 1.13 | 0.08 | 0.66 | -0.16 | 0.18 | -0.37 | 2.05 | -0.02 | 0.66 | 0.84 | 0.28 | 0.79 |
| CP3 | 2.7 | 1.29 | 2.06 | 1.05 | 0.69 | 0.09 | 2.68 | 0.3 | 0.78 | 0.44 | 1.06 | -0.14 |
| CPz | 0.53 | -0.04 | 0.38 | -0.14 | -0.07 | -0.76 | 1.99 | -0.72 | -0.13 | -0.18 | -0.1 | -0.53 |
| CP4 | 0.52 | 0.00 | 0.38 | -0.08 | 0.18 | -0.62 | 2.38 | -0.77 | -0.16 | -0.27 | 0.17 | -0.53 |
| T5 | 3.65 | 2.21 | 2.65 | 2.08 | 1 | 0.66 | 2.59 | 0.77 | 1.13 | 0.73 | 1.62 | 0.39 |
| P3 | 2.35 | 1.47 | 2.1 | 1.27 | 0.91 | 0.47 | 2.62 | 0.62 | 0.91 | 0.51 | 1.23 | -0.11 |
| Pz | 0.54 | 0.02 | 0.36 | -0.06 | -0.07 | -0.76 | 1.79 | -0.62 | -0.16 | -0.22 | 0.01 | -0.48 |
| P4 | 0.28 | -0.02 | 0.2 | -0.07 | 0.28 | -0.45 | 2.25 | -0.55 | -0.13 | -0.01 | 0.24 | -0.13 |
| T6 | -0.09 | -0.09 | 0.05 | -0.13 | 0.56 | 0.25 | 2.37 | -0.39 | 0.26 | 0.23 | 0.5 | 0.52 |
| O1 | 0.67 | 0.48 | 0.67 | 0.35 | 0.09 | -0.33 | 1.7 | -0.47 | -0.29 | -0.44 | 0.1 | -0.43 |
| Oz | 0.23 | 0.14 | 0.31 | 0.08 | 0.09 | -0.52 | 2.08 | -0.63 | -0.29 | -0.28 | 0.03 | -0.18 |
| O2 | 1.22 | 0.49 | 0.79 | 0.27 | -0.04 | -0.57 | 1.7 | 0.13 | 0.51 | 0.73 | 0.11 | 0.85 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

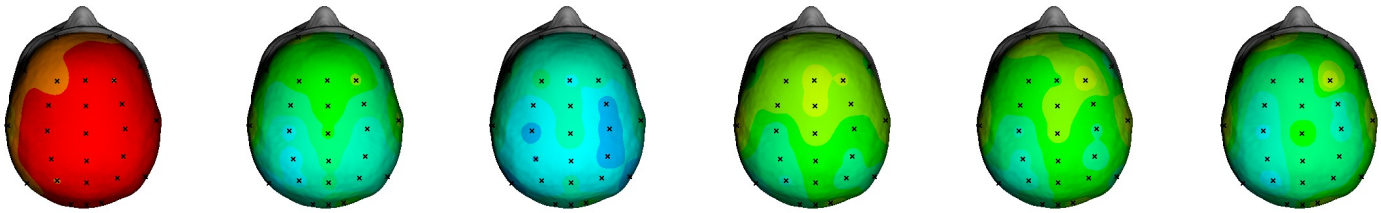
Plots of qEEG brain topography illustrating the distribution of absolute power across the scalp for each frequency band in z-score deviations compared to the healthy control group. A colored z-score scale is shown at the bottom of the figure. Dark-blue colors refer to -2 z-scores ranging through to light-blue colors to light-green colors representing ~ 0 z-scores (mean), to red colors representing +2 z-scores. The associated table below lists the z-score values occurring at each site per frequency band. Blue colored boxes indicate significantly low qEEG deviations and red colored boxes indicate significantly high qEEG deviations.

## 1.5 Relative Power Z Scores - Eyes Closed

Delta (1.5-3.5 Hz) Theta (4-7.5 Hz) Theta1 (4-5 Hz) Theta2 (5-7.5 Hz) Alpha (8-13 Hz) Alpha1 (8-11 Hz)



Alpha2 (11-13 Hz) Beta (14.5-30 Hz) Beta1 (14.5-20 Hz) Beta2 (20-25 Hz) Beta3 (25-30 Hz) Gamma (31-49 Hz)




If the data is not applicable or missing at a site, that site is not shown.

| Site | Z Score | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Delta | Theta | Theta1 | Theta2 | Alpha | Alpha1 | Alpha2 | Beta | Beta1 | Beta2 | Beta3 | Gamma |
| Fp1 | 1.03 | 0.83 | 1.59 | 0.46 | -0.73 | -1.1 | 1.73 | 0.29 | -0.58 | 0.59 | 0.78 | 0.68 |
| Fp2 | 1.1 | 0.97 | 1.56 | 0.55 | -0.6 | -1.07 | 1.86 | -0.27 | -0.87 | 0.27 | -0.09 | -0.17 |
| F7 | 0.94 | 1.02 | 1.51 | 0.73 | -0.53 | -0.89 | 1.86 | -0.16 | -0.4 | 0.00 | 0 | -0.02 |
| F3 | 1.28 | 0.91 | 1.61 | 0.51 | -0.72 | -1.1 | 1.67 | -0.05 | -0.42 | 0.46 | -0.08 | -0.49 |
| Fz | 0.81 | 0.86 | 1.3 | 0.63 | -0.49 | -1.17 | 2.39 | -0.07 | -0.92 | 0.63 | 0.16 | -0.55 |
| F4 | 1.56 | 0.42 | 1.06 | 0.18 | -0.87 | -1.45 | 1.98 | 0.24 | -0.82 | 0.57 | 0.86 | 0.84 |
| F8 | 1.02 | 0.8 | 1.75 | 0.37 | -0.38 | -1.05 | 2.55 | -0.34 | -0.6 | 0.15 | -0.34 | -0.19 |
| FC3 | 1.38 | 0.75 | 1.53 | 0.41 | -0.59 | -1.02 | 2.03 | -0.44 | -1.05 | 0.26 | -0.08 | -0.67 |
| FCz | 0.95 | 0.62 | 1.03 | 0.44 | -0.53 | -1.25 | 2.49 | 0.09 | -0.82 | 0.72 | 0.44 | -0.3 |
| FC4 | 0.7 | 0.35 | 1.02 | 0.13 | 0 | -1.16 | 3.54 | -0.43 | -1.4 | 0.3 | 0.05 | -0.67 |
| T3 | 0.67 | 0.13 | 0.45 | 0.01 | -0.62 | -0.99 | 1.31 | 0.54 | -0.29 | 1 | 0.74 | 0.77 |
| C3 | 1.19 | 0.35 | 1 | 0.1 | -0.09 | -1.23 | 3.08 | -0.98 | -1.38 | -0.38 | -0.58 | -0.98 |
| Cz | 1.05 | 0.39 | 0.75 | 0.26 | -0.36 | -1.31 | 2.85 | -0.14 | -0.68 | 0.35 | 0.31 | 0.09 |
| C4 | 0.48 | 0.05 | 0.54 | -0.04 | 0.28 | -1.27 | 3.7 | -0.76 | -1.41 | -0.01 | -0.22 | -0.69 |
| T4 | 0.82 | -0.34 | 0.32 | -0.62 | -0.18 | -0.99 | 2.3 | 0.23 | -0.49 | 0.51 | 0.68 | 0.61 |
| CP3 | 1.07 | 0.4 | 0.98 | 0.17 | -0.17 | -1.28 | 2.38 | -1.03 | -1.28 | -0.42 | -0.63 | -0.91 |
| CPz | 0.67 | 0.19 | 0.67 | 0.04 | -0.04 | -1.39 | 2.82 | -0.48 | -0.93 | 0.09 | 0.03 | -0.28 |
| CP4 | 0.36 | -0.06 | 0.33 | -0.17 | 0.4 | -1.32 | 3.37 | -0.9 | -1.43 | -0.25 | -0.3 | -0.52 |
| T5 | 1.49 | 0.58 | 0.6 | 0.66 | -0.35 | -0.81 | 1.55 | -1.27 | -1.6 | -0.86 | -0.96 | -0.98 |
| P3 | 0.51 | 0.34 | 0.73 | 0.2 | 0.11 | -0.73 | 1.97 | -0.99 | -1.13 | -0.61 | -0.74 | -1.11 |
| Pz | 0.53 | 0.15 | 0.5 | 0.04 | 0.05 | -1.48 | 2.56 | -0.51 | -0.85 | -0.04 | -0.08 | -0.32 |
| P4 | 0.02 | -0.26 | -0.02 | -0.31 | 0.56 | -1.24 | 3 | -0.79 | -1.23 | -0.32 | -0.16 | -0.25 |
| T6 | -0.64 | -0.79 | -0.55 | -0.83 | 1.01 | -0.19 | 2.72 | -0.8 | -1.57 | -0.32 | -0.26 | 0.01 |
| O1 | 0.63 | 0.51 | 0.67 | 0.45 | -0.02 | -0.99 | 2.43 | -0.59 | -0.73 | -0.34 | -0.37 | -0.38 |
| Oz | 0.21 | 0.22 | 0.41 | 0.16 | 0.23 | -1.22 | 2.85 | -0.53 | -0.8 | -0.25 | -0.21 | -0.16 |
| O2 | 0.96 | 0.52 | 0.89 | 0.34 | -0.54 | -1.45 | 2.26 | 0.29 | 0.09 | 0.45 | 0.57 | 0.68 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

Plots of qEEG brain topography illustrating the distribution of relative power across the scalp for each frequency band in z-score deviations compared to the healthy control group. Note that relative power is a ratio of the power within a given frequency band over the power across frequency band 1.5 – 30 Hz. A colored z-score scale is shown at the bottom of the figure. Dark-blue colors refer to -2 z-scores ranging through to light blue colors to light green colors representing ~ 0 z-scores (mean), to red colors representing +2 z-scores. The associated table below lists the z-score values occurring at each site per frequency band. Blue colored boxes indicate significantly low qEEG deviations and red colored boxes indicate significantly high qEEG deviations.

## 1.6 Ratio Scores - Eyes Closed

| Site | Client Ratio | |
|---|---|---|
| | Theta/Beta1 | Alpha/Beta1 |
| Fp1 | 2.7 | 3.97 |
| Fp2 | 3.25 | 4.76 |
| F7 | 2.6 | 3.66 |
| F3 | 2.78 | 3.76 |
| Fz | 3.87 | 5.53 |
| F4 | 2.79 | 4.1 |
| F8 | 2.53 | 4.2 |
| FC3 | 3.18 | 4.96 |
| FCz | 3.45 | 5.4 |
| FC4 | 3.09 | 7.03 |
| T3 | 1.47 | 2.91 |
| C3 | 2.92 | 7.14 |
| Cz | 2.69 | 5.48 |
| C4 | 2.6 | 8.14 |
| T4 | 1.36 | 3.71 |
| CP3 | 2.72 | 7.46 |
| CPz | 2.56 | 7.91 |
| CP4 | 2.42 | 9.6 |
| T5 | 2.99 | 9.41 |
| P3 | 2.54 | 9.65 |
| Pz | 2.37 | 9.98 |
| P4 | 2.04 | 11.62 |
| T6 | 1.51 | 16.33 |
| O1 | 2.36 | 11.89 |
| Oz | 2.18 | 12.72 |
| O2 | 1.63 | 6.67 |

| Site | Z Score Ratio | |
|---|---|---|
| | Theta/Beta1 | Alpha/Beta1 |
| Fp1 | 1.02 | -0.1 |
| Fp2 | 1.25 | 0.13 |
| F7 | 1.07 | -0.08 |
| F3 | 0.89 | -0.17 |
| Fz | 1.2 | 0.3 |
| F4 | 0.82 | -0.07 |
| F8 | 1.05 | 0.11 |
| FC3 | 1.15 | 0.32 |
| FCz | 0.97 | 0.23 |
| FC4 | 1.16 | 0.84 |
| T3 | 0.31 | -0.26 |
| C3 | 1.12 | 0.85 |
| Cz | 0.74 | 0.25 |
| C4 | 0.98 | 1.05 |
| T4 | 0.01 | 0.2 |
| CP3 | 1.13 | 0.74 |
| CPz | 0.8 | 0.62 |
| CP4 | 0.94 | 1.1 |
| T5 | 1.71 | 0.83 |
| P3 | 1.15 | 0.76 |
| Pz | 0.79 | 0.61 |
| P4 | 0.69 | 1.04 |
| T6 | 0.36 | 1.35 |
| O1 | 1.23 | 0.55 |
| Oz | 0.97 | 0.67 |
| O2 | 0.49 | -0.18 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

Theta/Beta1 and Alpha/Beta1 qEEG power ratio scores and associated z-score deviations. Statistically significant deviations are illustrated by blue highlighted boxes (low) and red highlighted boxes (high).

## 1.7 Asymmetry Z Scores - Eyes Closed

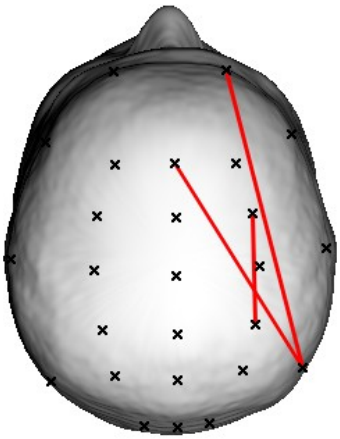
| Site | Z Score | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Delta | Theta | Alpha | Alpha1 | Alpha2 | Beta | Beta1 | Beta2 | Beta3 | Gamma |
| Fp1-Fp2 | 0.11 | -0.79 | -0.73 | -1.41 | -0.24 | -2.04 | -1.87 | -1.41 | -2.37 | -2.76 |
| F7-F8 | -0.17 | -0.88 | -0.45 | -0.38 | -0.55 | -0.15 | 0.05 | 0.09 | -0.44 | -0.27 |
| F3-F4 | 0.95 | 0.2 | -0.64 | -1.24 | -0.1 | 2.02 | -0.08 | 1.6 | 3.11 | 2.88 |
| FC3-FC4 | -0.35 | -0.46 | 1.1 | -0.24 | 2.18 | 0.34 | -0.22 | 0.52 | 0.64 | -0.21 |
| T3-T4 | -0.23 | -1.25 | -1.26 | -1.2 | -1.55 | -0.91 | -0.83 | -1.2 | -0.46 | -0.49 |
| C3-C4 | -1.45 | -2.37 | -1.26 | -1.36 | -0.94 | -1.21 | -1.46 | -0.98 | -0.84 | -0.64 |
| CP3-CP4 | -3.36 | -4.76 | -2.26 | -2.38 | -2.08 | -4.01 | -3.89 | -3.62 | -3.01 | -2.38 |
| T5-T6 | -4.29 | -4.28 | -1.21 | -0.96 | -1.42 | -2.54 | -2.69 | -2.4 | -1.76 | -1.04 |
| P3-P4 | -1.97 | -2.87 | -1.83 | -2.23 | -1.63 | -3.81 | -3.38 | -3.98 | -1.58 | -1.06 |
| O1-O2 | 1.79 | 0.58 | -1.14 | -1.08 | -1.09 | 2.41 | 1.63 | 2.26 | 3.24 | 3.27 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

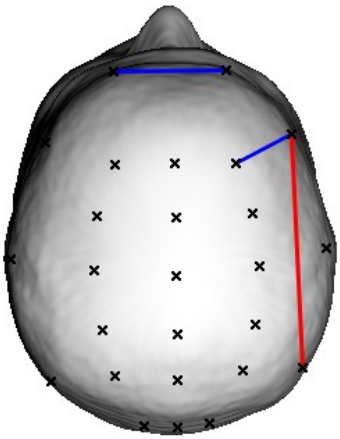
Asymmetries are calculated according to the following formula, (B - A)/(B + A) where A, B refer to the homologous site pairs of interest in each hemisphere. The scores are calculated using an average reference.

## 1.8 Coherence Visual Aids - Eyes Closed

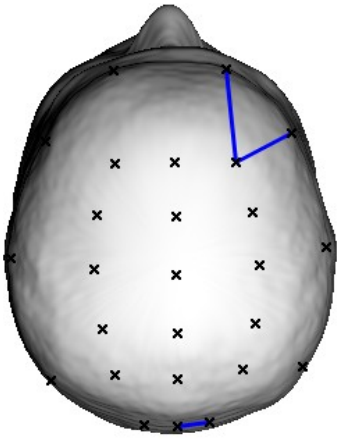
### Delta (1.5-3.5 Hz)



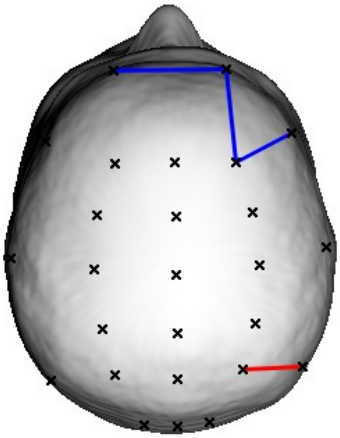
### Theta (4-7.5 Hz)

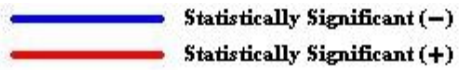


### Alpha (8-13 Hz)



### Beta (14.5-30 Hz)






Brain topography plots showing coherence relationships across the scalp for each frequency band in z-score deviations compared to the healthy control group. Coherence is a measure of coupling or association between the EEG amplitude measured at the same time at specific scalp sites. It is calculated for each frequency band by computing the cross-correlation coefficient between the site pairs of interest. Blue colored lines refer to significantly lower coherence compared to the control group, while red colored lines refer to significantly higher coherence compared to the control group. Associated z-score values are shown on the following page in tables.

# 1.9 Coherence Z Scores - Eyes Closed

### Interhemispheric Coherence: Homologous Pairs

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fp1-Fp2 | -1.36 | -1.98 | -1.42 | -2.05 |
| F7-F8 | 0.94 | -0.32 | -0.7 | -0.8 |
| F3-F4 | -0.42 | -0.72 | -1.14 | -1.19 |
| FC3-FC4 | 1.89 | 0.24 | 0.13 | -0.83 |
| T3-T4 | -0.79 | -0.78 | -0.92 | -1.04 |

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| C3-C4 | 1.13 | -0.67 | -0.51 | -0.69 |
| CP3-CP4 | 0.17 | -1.05 | -1.11 | -0.33 |
| T5-T6 | -1.18 | -1.04 | -0.87 | -1.16 |
| P3-P4 | -0.2 | -1.06 | -1.1 | -0.9 |
| O1-O2 | -0.66 | -1.38 | -1.62 | -1.3 |

### Intrahemispheric Coherence

| Left | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fp1-F7 | 0.59 | -0.16 | -0.16 | -0.43 |
| Fp1-F3 | -0.46 | -0.93 | -0.29 | -1.15 |
| Fp1-FC3 | 0.57 | -0.14 | -0.47 | -0.65 |
| Fp1-T3 | -0.89 | -1.23 | -1.5 | -1.33 |
| Fp1-C3 | 0.94 | -0.79 | -1.34 | -1.23 |
| Fp1-CP3 | 1.14 | -0.79 | -1.15 | -0.99 |
| Fp1-T5 | -0.79 | -0.45 | -0.83 | -0.76 |
| Fp1-P3 | 0.83 | -0.4 | -1.01 | -0.59 |
| Fp1-O1 | 0.16 | -0.91 | -0.57 | -0.93 |
| F7-F3 | -0.2 | -0.63 | -0.73 | -1.06 |
| F7-FC3 | -0.03 | -0.54 | -0.94 | -0.38 |
| F7-T3 | -0.95 | -1.36 | -1.72 | -1.61 |
| F7-C3 | 0.16 | -0.85 | -1.06 | -1.13 |
| F7-CP3 | 1.57 | -0.93 | -0.9 | -0.93 |
| F7-T5 | 0.45 | -0.46 | -0.8 | 0.2 |
| F7-P3 | 0.21 | -0.82 | -0.88 | -0.85 |
| F7-O1 | -0.6 | -0.84 | -0.87 | -0.99 |
| F3-FC3 | -0.75 | -0.72 | -0.67 | -0.94 |
| F3-T3 | -1.09 | -1.27 | -1.82 | -1.77 |
| F3-C3 | -0.7 | -1.19 | -1.28 | -1.44 |
| F3-CP3 | -0.08 | -1.12 | -1.16 | -1.06 |
| F3-T5 | 0.33 | 0.39 | -0.85 | -0.69 |
| F3-P3 | -0.5 | -0.97 | -0.89 | -0.94 |
| F3-O1 | -1 | -0.85 | -0.97 | -0.74 |
| FC3-T3 | -0.95 | -1.19 | -1.66 | -1.71 |
| FC3-C3 | 1.43 | 0.53 | 0.14 | 0.29 |
| FC3-CP3 | 1.56 | -0.42 | -0.58 | -0.19 |
| FC3-T5 | -1.24 | -1.12 | -0.96 | -0.8 |
| FC3-P3 | 1.4 | -0.39 | -0.45 | -0.22 |
| FC3-O1 | -0.35 | -1.04 | -0.71 | -1.02 |
| T3-C3 | -0.92 | -1.2 | -1.6 | -1.52 |
| T3-CP3 | -0.39 | -1.26 | -1.02 | -1.39 |
| T3-T5 | -0.84 | -1.33 | -1.03 | -1.31 |
| T3-P3 | -0.26 | -1.35 | -0.64 | -1.27 |
| T3-O1 | -0.73 | -1.02 | -0.11 | -0.97 |
| C3-CP3 | 1.09 | 0.34 | 0.7 | 0.88 |
| C3-T5 | -1.11 | -1.2 | -0.99 | -0.87 |
| C3-P3 | 1.07 | 0.01 | 0.22 | 0.32 |
| C3-O1 | -0.52 | -1.31 | -0.26 | -0.66 |
| CP3-T5 | -1 | -1.22 | -0.89 | -0.87 |
| CP3-P3 | 0.46 | 0.17 | 0.38 | 0.28 |
| CP3-O1 | -0.57 | -1.02 | -0.02 | -0.85 |
| T5-P3 | -1.25 | -1.27 | -0.87 | -1.26 |
| T5-O1 | -1.11 | -1.59 | -0.57 | -1.6 |
| P3-O1 | -0.79 | -0.84 | -0.06 | -1.01 |

| Right | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fp2-F8 | -1.35 | -1.62 | -1.7 | -1.77 |
| Fp2-F4 | -1.5 | -1.91 | -2.42 | -2.01 |
| Fp2-FC4 | -0.24 | -0.75 | -0.67 | -0.81 |
| Fp2-T4 | -0.39 | -1.16 | -1.26 | -0.89 |
| Fp2-C4 | -0.06 | -0.72 | -0.5 | -0.65 |
| Fp2-CP4 | 0.58 | -0.43 | -0.36 | -0.99 |
| Fp2-T6 | 2.26 | 0.74 | -0.86 | -0.46 |
| Fp2-P4 | 0.81 | -0.36 | -0.74 | -0.58 |
| Fp2-O2 | -0.22 | -0.99 | -1.15 | -0.84 |
| F8-F4 | -1.24 | -2.22 | -2.6 | -2.18 |
| F8-FC4 | -0.62 | -1.05 | -1.08 | -0.99 |
| F8-T4 | 0.47 | 0.4 | -0.32 | 0.22 |
| F8-C4 | -0.89 | -1.19 | -0.97 | -0.8 |
| F8-CP4 | -0.16 | -0.58 | -0.48 | -0.32 |
| F8-T6 | 0.73 | 2.02 | -0.54 | -0.07 |
| F8-P4 | -0.48 | -0.64 | -0.73 | 0.01 |
| F8-O2 | 1.59 | 1.12 | -0.64 | 0.54 |
| F4-FC4 | -0.95 | -1.39 | -1.26 | -1.44 |
| F4-T4 | -0.58 | -1.03 | -1.46 | -1.6 |
| F4-C4 | -0.78 | -0.98 | -0.91 | -1.15 |
| F4-CP4 | -0.86 | -1.02 | -0.64 | -1.18 |
| F4-T6 | -0.99 | -0.94 | -1.01 | -0.92 |
| F4-P4 | -0.58 | -0.9 | -0.19 | -1.15 |
| F4-O2 | 0.94 | 0.22 | -0.01 | 0.62 |
| FC4-T4 | -1.18 | -1.39 | -1.62 | -1.24 |
| FC4-C4 | 1.21 | 0.76 | 1.26 | 1.53 |
| FC4-CP4 | 1.97 | 1.52 | 1.36 | 1.4 |
| FC4-T6 | 0.74 | 1.04 | -0.06 | 1.56 |
| FC4-P4 | 0.67 | 0.4 | 0.59 | 0.93 |
| FC4-O2 | -0.02 | -0.81 | -0.76 | -0.56 |
| T4-C4 | -1.11 | -1.51 | -1.84 | -1.22 |
| T4-CP4 | -0.95 | -1.34 | -1.61 | -1.01 |
| T4-T6 | -1 | -1.37 | -1.16 | -1.27 |
| T4-P4 | -0.85 | -1.4 | -1.45 | -1.16 |
| T4-O2 | 1.18 | 0.63 | -0.43 | -0.01 |
| C4-CP4 | 1.01 | 1.01 | 0.8 | 0.75 |
| C4-T6 | 1.02 | 1.03 | 0.13 | 1.36 |
| C4-P4 | 1.18 | 1.09 | 0.56 | 0.92 |
| C4-O2 | 0.52 | 0.02 | -0.27 | -0.19 |
| CP4-T6 | 0.43 | 0.94 | -0.08 | 0.98 |
| CP4-P4 | 0.41 | 0.37 | 0.27 | 0.58 |
| CP4-O2 | -0.61 | -1.04 | -0.84 | -0.97 |
| T6-P4 | 0.46 | 0.39 | -0.03 | 2.04 |
| T6-O2 | -0.67 | -1.36 | -1.56 | -0.95 |
| P4-O2 | -0.32 | -0.59 | -0.64 | -1.18 |

= statistically significant (-); = statistically significant (+); — = data not applicable or missing

### Midline Coherence

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fz-Fp1 | 0.09 | -0.39 | -0.17 | -0.64 |
| Fz-Fp2 | 0.15 | -0.63 | -0.04 | -0.82 |
| Fz-F7 | -0.74 | -0.98 | -0.98 | -0.86 |
| Fz-F3 | -0.8 | -0.97 | -0.68 | -1.07 |
| Fz-F4 | -1.19 | -1.45 | -1.5 | -1.42 |
| Fz-F8 | -1.03 | -1.07 | -1.12 | -1.65 |
| Fz-FC3 | 1.45 | 0.57 | 0.28 | 0.05 |
| Fz-FCz | 0.41 | 0.1 | 0.31 | -0.68 |
| Fz-FC4 | 1.17 | 0.75 | 0.82 | 0.28 |
| Fz-T3 | -1.07 | -1.31 | -1.48 | -1.25 |
| Fz-C3 | 1.77 | -0.54 | -0.97 | -0.59 |
| Fz-Cz | -0.54 | -0.74 | -0.34 | -1.23 |
| Fz-C4 | 1.17 | 0.54 | 0.8 | 0.13 |
| Fz-T4 | -1.1 | -1.28 | -1.44 | -1.44 |
| Fz-CP3 | 0.62 | -0.99 | -1.1 | -1 |
| Fz-CPz | 0.83 | -0.28 | 0.34 | -0.2 |
| Fz-CP4 | 1.56 | 0.86 | 0.73 | 0.09 |
| Fz-T5 | -1.06 | -0.65 | -1.03 | -1.11 |
| Fz-P3 | 0.74 | -0.62 | -0.94 | -0.94 |
| Fz-Pz | 1.03 | 0.45 | 0.16 | -0.24 |
| Fz-P4 | 1.07 | 0.35 | 0.08 | 0.35 |
| Fz-T6 | 3.06 | 1.34 | -0.69 | 0.76 |
| Fz-O1 | 0.34 | -0.88 | -0.83 | -1.01 |
| Fz-Oz | 1.46 | 0.53 | -0.31 | -0.01 |
| Fz-O2 | 0.00 | 0.07 | -0.94 | 0.19 |
| Cz-Fp1 | -0.02 | -0.67 | -0.61 | -1.33 |
| Cz-Fp2 | -1.33 | -1.61 | -0.92 | -1.7 |
| Cz-F7 | 0.79 | -0.66 | -0.79 | -0.59 |
| Cz-F3 | -0.38 | -1.04 | -0.85 | -1.58 |
| Cz-F4 | -0.97 | -1.59 | -1.7 | -1.84 |
| Cz-F8 | 0.41 | 0.12 | -0.77 | -0.71 |
| Cz-FC3 | -0.26 | -0.8 | -0.35 | -0.97 |
| Cz-FCz | -1 | -1.17 | -0.56 | -1.68 |
| Cz-FC4 | -0.53 | -0.94 | -0.11 | -0.97 |
| Cz-T3 | -0.03 | -0.83 | -0.79 | -1.29 |
| Cz-C3 | -0.36 | -1.21 | -0.9 | -0.67 |
| Cz-C4 | -0.67 | -1.06 | -0.4 | -0.96 |
| Cz-T4 | -0.64 | -0.39 | -1.27 | -0.56 |
| Cz-CP3 | 0.17 | -0.82 | -0.75 | -0.52 |
| Cz-CPz | -0.41 | -0.9 | -0.13 | -0.58 |
| Cz-CP4 | -0.61 | -0.84 | 0.05 | -0.67 |
| Cz-T5 | -0.83 | -0.96 | -0.59 | -0.67 |
| Cz-P3 | -0.25 | -0.86 | -0.5 | -0.91 |
| Cz-Pz | 0.04 | -0.13 | 0.19 | -0.01 |
| Cz-P4 | -0.43 | -0.64 | -0.12 | -0.39 |
| Cz-T6 | 0.58 | 1.04 | -0.11 | 0.22 |
| Cz-O1 | -0.58 | -0.51 | -0.31 | -0.07 |

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Cz-Oz | -0.13 | 0.25 | 0.91 | -0.09 |
| Cz-O2 | -1.18 | -1.04 | -1.01 | -1.13 |
| Pz-Fp1 | 1.78 | 0.37 | -0.44 | -0.7 |
| Pz-Fp2 | 0.42 | -0.71 | -0.38 | -1.11 |
| Pz-F7 | 1.23 | -0.4 | -0.38 | -0.46 |
| Pz-F3 | 0.14 | -0.2 | -0.6 | -0.9 |
| Pz-F4 | -0.57 | -0.86 | -0.55 | -0.9 |
| Pz-F8 | 0.21 | 0.38 | -0.73 | -0.49 |
| Pz-FC3 | 1.02 | 0.06 | 0.38 | -0.07 |
| Pz-FCz | 0.02 | 0.00 | 0.16 | -1.06 |
| Pz-FC4 | 1.03 | 0.33 | 0.46 | 0.09 |
| Pz-T3 | -0.89 | -1.35 | -0.77 | -1.18 |
| Pz-C3 | 0.92 | -0.34 | 0.47 | 0.67 |
| Pz-C4 | 1.24 | 0.68 | 0.35 | 0.16 |
| Pz-T4 | -0.88 | -1.07 | -1.37 | -0.84 |
| Pz-CP3 | 0.26 | -0.48 | -0.14 | 0.25 |
| Pz-CPz | 0.55 | 0.18 | 0.52 | 0.3 |
| Pz-CP4 | 0.96 | 0.31 | 0.01 | 0.57 |
| Pz-T5 | -1.07 | -0.99 | -0.7 | -0.93 |
| Pz-P3 | 0.27 | -0.21 | -0.59 | -0.05 |
| Pz-P4 | 0.67 | 0.33 | -0.25 | 0.51 |
| Pz-T6 | 1.03 | 1.06 | -0.64 | 0.78 |
| Pz-O1 | 0 | -0.46 | 0.06 | -0.6 |
| Pz-Oz | 1.48 | 1.19 | 1.66 | 1.74 |
| Pz-O2 | -0.55 | -0.94 | -0.54 | -0.98 |
| Oz-Fp1 | 0.13 | 0.5 | -0.52 | -0.53 |
| Oz-Fp2 | 0.35 | -0.14 | -0.77 | -0.58 |
| Oz-F7 | -0.06 | -0.95 | -0.67 | -0.53 |
| Oz-F3 | -0.31 | -0.48 | -0.74 | -0.81 |
| Oz-F4 | -0.57 | -0.64 | -0.36 | -0.66 |
| Oz-F8 | -0.26 | -0.63 | -0.8 | -0.79 |
| Oz-FC3 | 1.29 | -0.1 | 0.53 | 0.07 |
| Oz-FCz | 0.62 | 0.61 | 0.29 | -0.54 |
| Oz-FC4 | 1.02 | 1.37 | 0.31 | 0.52 |
| Oz-T3 | -0.73 | -0.69 | -0.8 | -0.9 |
| Oz-C3 | 1.34 | -0.44 | 1.29 | 0.82 |
| Oz-C4 | 1.76 | 1.72 | 0.55 | 0.66 |
| Oz-T4 | -0.51 | -0.99 | -1.06 | -0.86 |
| Oz-CP3 | 0.53 | -0.39 | 0.99 | 0.77 |
| Oz-CPz | 0.92 | 1.01 | 1.35 | 0.8 |
| Oz-CP4 | 1.32 | 1.02 | 0.56 | 1.27 |
| Oz-T5 | -0.93 | -1.16 | -0.61 | -1.44 |
| Oz-P3 | 0.46 | 0.23 | 0.4 | 0.72 |
| Oz-P4 | 1.21 | 0.47 | 1.09 | 1.27 |
| Oz-T6 | 1.27 | 0.63 | -1.06 | 0.65 |
| Oz-O1 | -0.27 | -0.48 | -1.14 | -0.88 |
| Oz-O2 | -0.82 | -1.38 | -2.01 | -1.58 |

= statistically significant (-); = statistically significant (+); — = data not applicable or missing

### 5 most significant scores

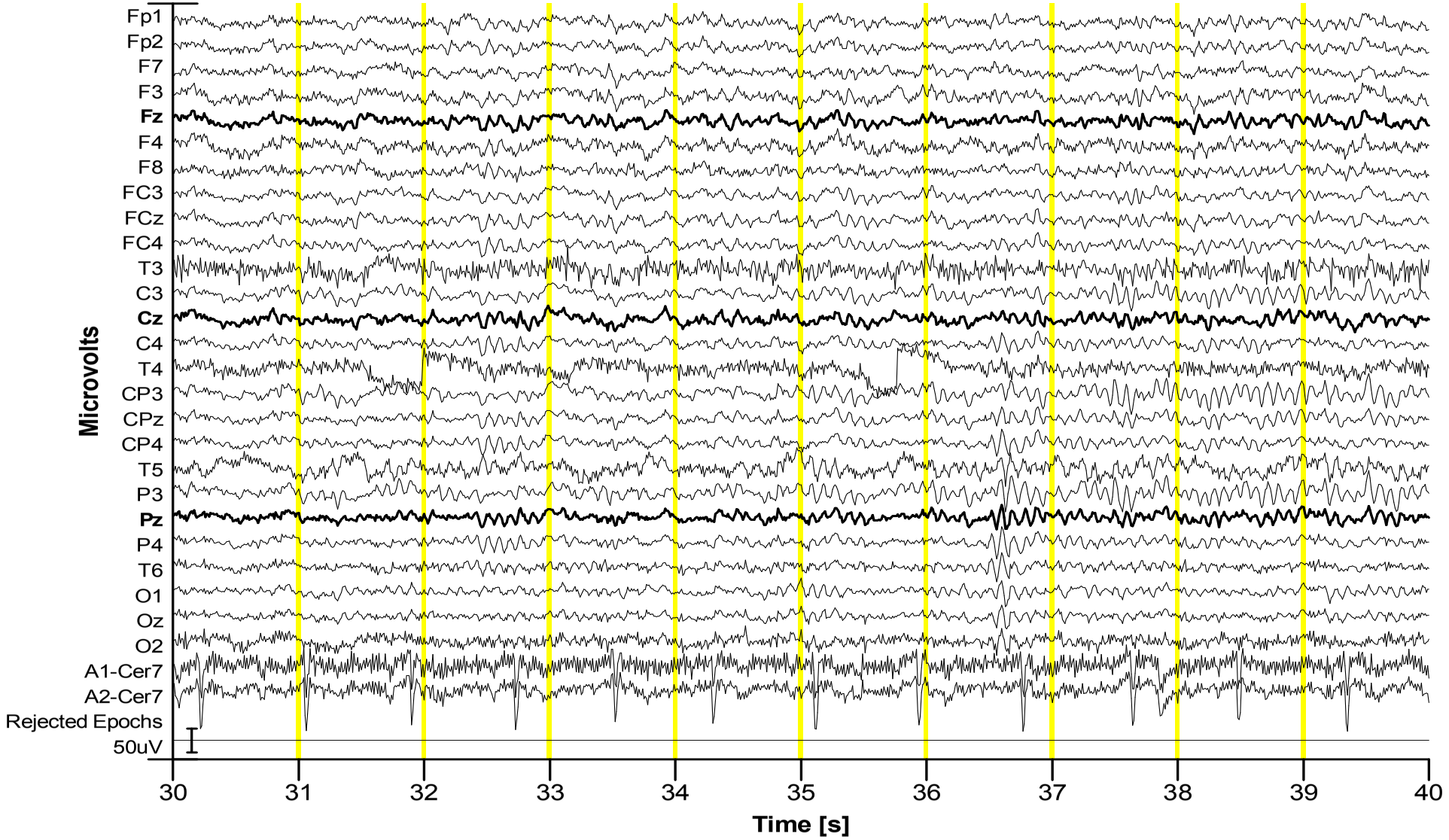
| | Site | Measure | Client | Average | Std. Dev | Z Score | Percentile |
|---|---|---|---|---|---|---|---|
| • | Fz-T6 | Delta | 0.25 | 0.06 | 0.06 | 3.06 | $100^{th}$ |
| • | F8-F4 | Alpha | 0.03 | 0.51 | 0.18 | -2.6 | $< 1^{st}$ |
| • | Fp2-F4 | Alpha | 0.04 | 0.49 | 0.19 | -2.42 | $1^{st}$ |
| • | Fp2-T6 | Delta | 0.14 | 0.04 | 0.05 | 2.26 | $99^{th}$ |
| • | F8-F4 | Theta | 0.00 | 0.37 | 0.17 | -2.22 | $1^{st}$ |

Compared with the normal controls (matched for age and gender)

• = statistically significant (-); • = statistically significant (+); Std. Dev = standard deviation

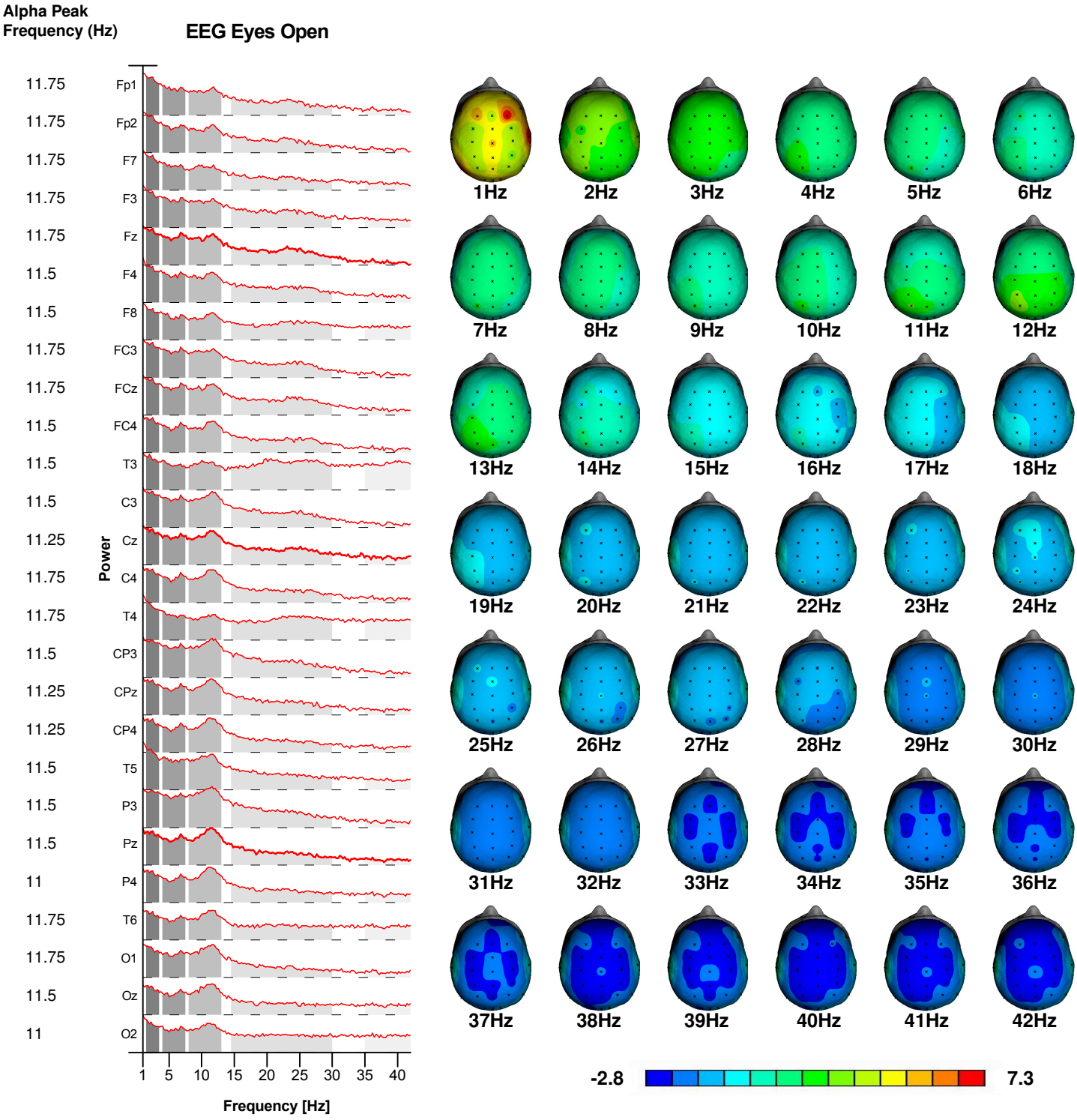
## 2. EEGs Eyes Open

### 2.1 Raw EEG Data - Eyes Open (with artefact rejected epochs indicated as a solid line)



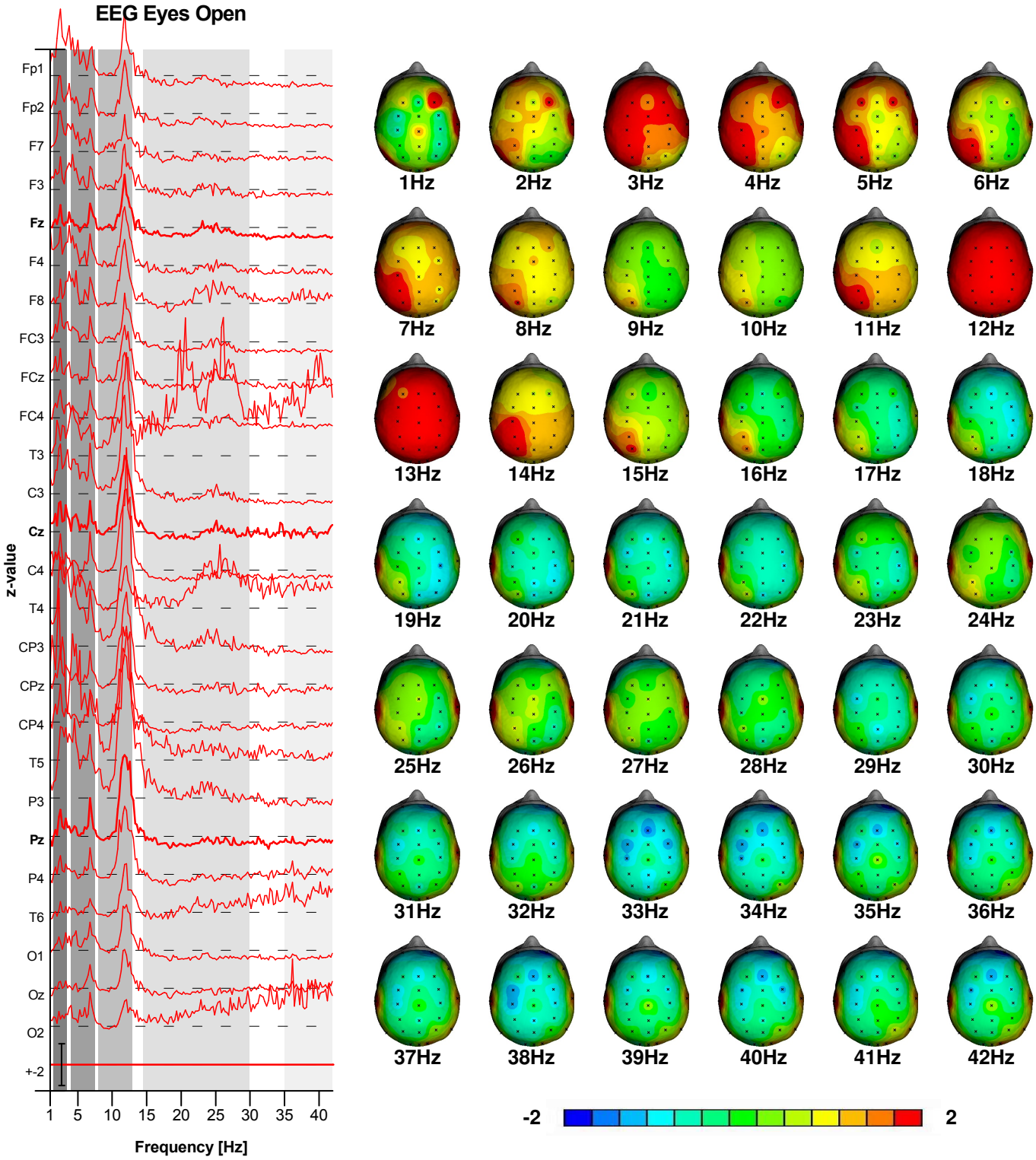

Clinician Comment: Signature: Date:

## 2.2 Topographs of Spectral Analysis - Eyes Open (log magnitude)



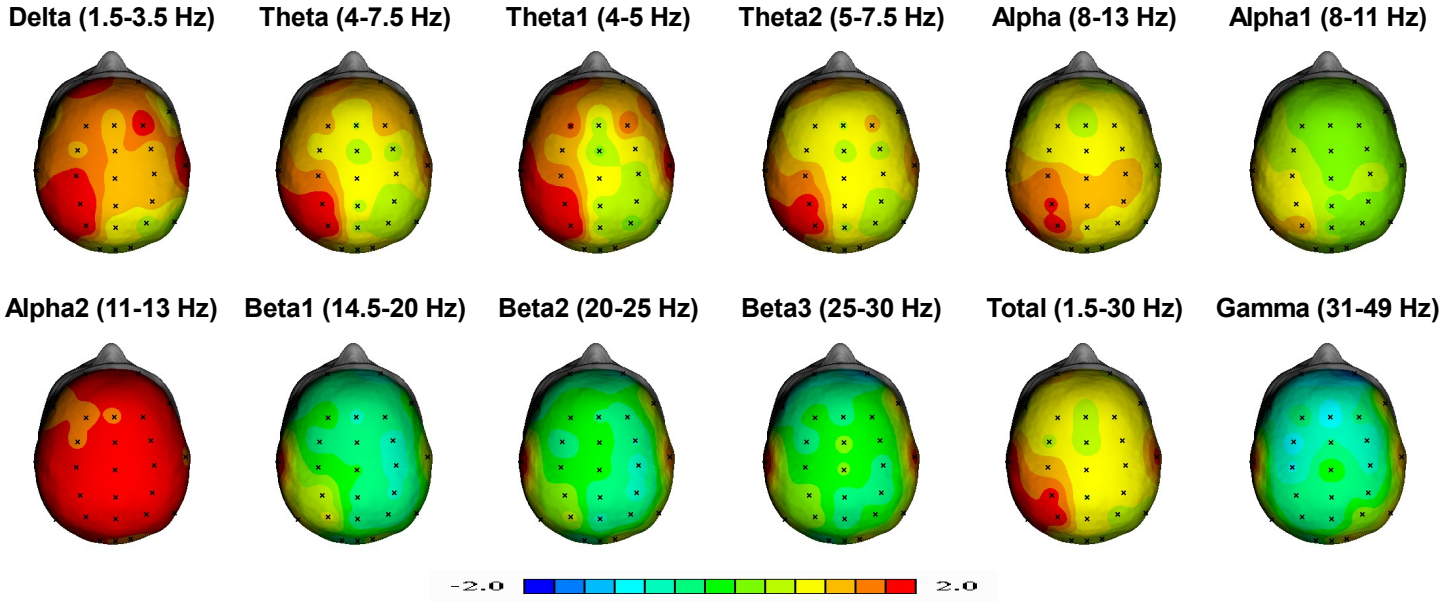

Plots of resting power spectra at each site and qEEG brain topography across 1 Hz bins illustrating the distribution of power across the scalp measured at each frequency in log $\mu V^2$. A colored scale is shown at the bottom right of the topography figures, illustrating power magnitudes. Dark-blue to light-blue colors refer to very low power levels, aqua to light-green to yellow colors refer to medium power levels, and orange to red refer to high power levels.

## 2.3 Topographs of Spectral Analysis - Eyes Open (log magnitude, z-score)




Plots of resting power spectra at each site and qEEG brain topography across 1 Hz bins illustrating the distribution of power across the scalp in z-score deviations compared to a healthy control group. In the power spectra plots (left figure) z-score deviation is shown relative to an average center (dashed) line for each site. The z-score units are illustrated at the bottom of the figure. A colored z-score scale is shown at the bottom right of the topography figures. Dark-blue colors refer to -2 z-scores ranging through to light-blue colors to light-green colors representing $\sim$ 0 z-scores (mean), to red colors representing +2 z-scores.

## 2.4 Power Z Scores - Eyes Open




If the data is not applicable or missing at a site, that site is not shown.

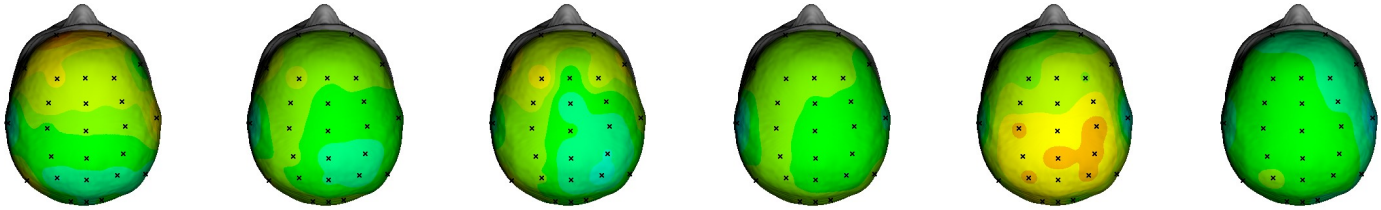
| Site | Z Score | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Delta | Theta | Theta1 | Theta2 | Alpha | Alpha1 | Alpha2 | Beta1 | Beta2 | Beta3 | Total | Gamma |
| Fp1 | 2.61 | 2.09 | 2.3 | 1.91 | 0.94 | 0.5 | 2.22 | -0.45 | -0.33 | -0.91 | 1.46 | -1.21 |
| Fp2 | 1.74 | 1.45 | 1.49 | 1.36 | 0.79 | 0.22 | 2.19 | -0.81 | -0.75 | -1.43 | 0.87 | -1.85 |
| F7 | 1.45 | 1.35 | 1.76 | 1.21 | 0.75 | 0.56 | 1.57 | -0.43 | -0.48 | -0.75 | 0.82 | -0.64 |
| F3 | 1.92 | 1.32 | 2.03 | 1.07 | 0.91 | 0.51 | 1.91 | -0.01 | 0.16 | -0.12 | 1.11 | -0.35 |
| Fz | 1.39 | 0.89 | 0.76 | 0.89 | 0.76 | 0.32 | 1.92 | -0.6 | -0.19 | -0.31 | 0.74 | -1.25 |
| F4 | 2.36 | 1.59 | 1.89 | 1.37 | 1.08 | 0.47 | 2.4 | -0.27 | -0.21 | 0.01 | 1.14 | -0.49 |
| F8 | 0.8 | 1.5 | 1.85 | 1.06 | 0.97 | 0.31 | 2.53 | 0.00 | 0.97 | 1.15 | 0.91 | 0.98 |
| FC3 | 1.54 | 1.15 | 1.3 | 1.06 | 0.91 | 0.57 | 1.81 | -0.42 | -0.45 | -0.36 | 0.84 | -1.09 |
| FCz | 1.63 | 0.76 | 0.46 | 0.83 | 0.99 | 0.37 | 2.33 | -0.48 | -0.02 | 0.28 | 0.79 | -0.53 |
| FC4 | 1.5 | 0.81 | 0.91 | 0.8 | 1.2 | 0.43 | 2.78 | -0.7 | -0.56 | -0.14 | 1 | -0.89 |
| T3 | 1.74 | 2 | 2.58 | 1.86 | 1.61 | 1.38 | 2.51 | 2.47 | 2.57 | 2.48 | 2.53 | 2.19 |
| C3 | 2.1 | 1.7 | 1.92 | 1.71 | 1.83 | 0.96 | 3.34 | 0.15 | -0.16 | -0.08 | 1.6 | -0.94 |
| Cz | 1.57 | 0.95 | 1.08 | 0.92 | 1.28 | 0.51 | 2.79 | -0.17 | -0.07 | 0.22 | 0.95 | 0.12 |
| C4 | 1.45 | 0.93 | 0.8 | 1.04 | 1.54 | 0.64 | 3.02 | -0.72 | -0.69 | -0.3 | 1.14 | -0.65 |
| T4 | 2.82 | 1.79 | 2.41 | 1.74 | 0.87 | 0.54 | 1.93 | 0.81 | 1.86 | 2.11 | 2.09 | 1.57 |
| CP3 | 2.84 | 2.49 | 2.69 | 2.25 | 2.06 | 1.24 | 3.62 | 0.8 | 0.45 | 0.34 | 2.12 | -0.44 |
| CPz | 1.29 | 0.85 | 0.74 | 0.97 | 1.29 | 0.5 | 3.01 | -0.28 | -0.5 | -0.35 | 0.9 | -0.48 |
| CP4 | 1.42 | 0.79 | 0.74 | 0.76 | 1.29 | 0.53 | 2.8 | -0.6 | -0.71 | -0.41 | 0.97 | -0.29 |
| T5 | 3.79 | 3.22 | 4.23 | 2.91 | 2.35 | 1.74 | 3.63 | 1.25 | 0.92 | 0.78 | 3.32 | 0.59 |
| P3 | 2.3 | 2.56 | 2.95 | 2.31 | 2.21 | 1.54 | 3.75 | 1.02 | 0.67 | 0.38 | 2.37 | -0.34 |
| Pz | 0.94 | 0.81 | 0.69 | 0.85 | 1.19 | 0.47 | 3.12 | -0.41 | -0.64 | -0.48 | 0.91 | -0.42 |
| P4 | 0.74 | 0.63 | 0.39 | 0.7 | 1.15 | 0.51 | 2.66 | -0.47 | -0.31 | -0.08 | 0.84 | 0.39 |
| T6 | 0.23 | 0.53 | 0.42 | 0.57 | 0.84 | 0.31 | 2.02 | -0.07 | 0.64 | 0.79 | 0.58 | 1.2 |
| O1 | 0.87 | 1.23 | 1.04 | 1.26 | 1.01 | 0.55 | 2.07 | -0.42 | -0.77 | -0.73 | 0.77 | -0.62 |
| Oz | 0.43 | 0.72 | 0.45 | 0.83 | 0.8 | 0.37 | 1.86 | -0.41 | -0.25 | -0.05 | 0.57 | 0.4 |
| O2 | 0.87 | 1.13 | 1.04 | 1.16 | 0.65 | 0.33 | 1.62 | 0.78 | 1.27 | 1.39 | 0.86 | 1.62 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

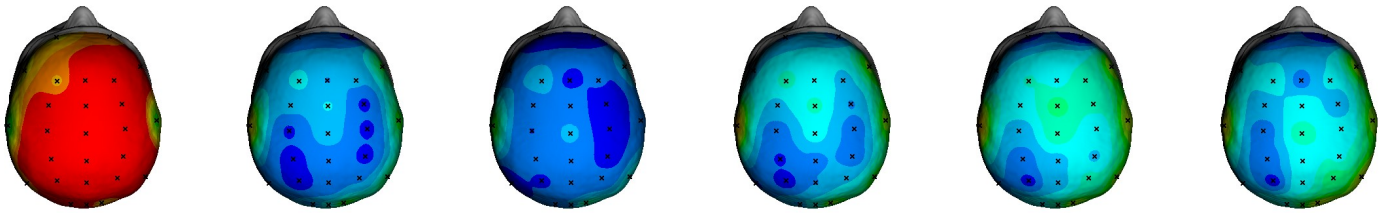
Plots of qEEG brain topography illustrating the distribution of absolute power across the scalp for each frequency band in z-score deviations compared to the healthy control group. A colored z-score scale is shown at the bottom of the figure. Dark-blue colors refer to -2 z-scores ranging through to light-blue colors to light-green colors representing ~ 0 z-scores (mean), to red colors representing +2 z-scores. The associated table below lists the z-score values occurring at each site per frequency band. Blue colored boxes indicate significantly low qEEG deviations and red colored boxes indicate significantly high qEEG deviations.

## 2.5 Relative Power Z Scores - Eyes Open

Delta (1.5-3.5 Hz) Theta (4-7.5 Hz) Theta1 (4-5 Hz) Theta2 (5-7.5 Hz) Alpha (8-13 Hz) Alpha1 (8-11 Hz)



Alpha2 (11-13 Hz) Beta (14.5-30 Hz) Beta1 (14.5-20 Hz) Beta2 (20-25 Hz) Beta3 (25-30 Hz) Gamma (31-49 Hz)




If the data is not applicable or missing at a site, that site is not shown.

| Site | Z Score | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Delta | Theta | Theta1 | Theta2 | Alpha | Alpha1 | Alpha2 | Beta | Beta1 | Beta2 | Beta3 | Gamma |
| Fp1 | 1.83 | 0.49 | 0.92 | 0.32 | -0.14 | -0.53 | 1.17 | -1.98 | -2.43 | -1.69 | -2.14 | -2.11 |
| Fp2 | 1.43 | 0.42 | 0.66 | 0.37 | 0.19 | -0.35 | 1.72 | -2.09 | -2.19 | -1.76 | -2.48 | -2.36 |
| F7 | 1.05 | 0.76 | 1.07 | 0.55 | 0.32 | 0.18 | 1.1 | -1.52 | -1.82 | -1.37 | -1.48 | -1.15 |
| F3 | 0.98 | 0.65 | 1.21 | 0.22 | 0.4 | -0.1 | 1.56 | -1.16 | -1.37 | -0.83 | -0.9 | -0.98 |
| Fz | 0.66 | 0.18 | -0.03 | 0.41 | 0.65 | -0.15 | 2.37 | -1.64 | -2.09 | -0.94 | -0.98 | -1.81 |
| F4 | 0.91 | 0.44 | 0.87 | 0.24 | 0.52 | -0.23 | 2.32 | -1.6 | -1.93 | -1.34 | -0.9 | -1.23 |
| F8 | -0.11 | 0.43 | 1.06 | 0.05 | 0.7 | -0.24 | 2.86 | -0.12 | -1.35 | 0.28 | 0.43 | 0.38 |
| FC3 | 0.89 | 0.54 | 0.64 | 0.47 | 0.71 | 0.1 | 2.08 | -1.59 | -1.86 | -1.32 | -1.03 | -1.51 |
| FCz | 0.61 | -0.07 | -0.54 | 0.15 | 0.78 | -0.13 | 2.77 | -1.24 | -1.67 | -0.82 | -0.35 | -1.03 |
| FC4 | 0.61 | 0.00 | -0.07 | 0.08 | 1.06 | -0.21 | 3.38 | -2.06 | -2.59 | -1.65 | -0.88 | -1.48 |
| T3 | -0.93 | -0.86 | -0.29 | -1.11 | -0.56 | -0.52 | -0.23 | 1.08 | 0.19 | 1.46 | 1.43 | 1.09 |
| C3 | 0.13 | 0.32 | 0.37 | 0.32 | 1.34 | 0.00 | 3.53 | -2.04 | -2 | -1.89 | -1.54 | -1.86 |
| Cz | 0.19 | -0.17 | -0.16 | -0.04 | 1.2 | -0.11 | 3.97 | -1.42 | -1.55 | -1.12 | -0.66 | -0.66 |
| C4 | 0.2 | -0.12 | -0.41 | 0.09 | 1.49 | -0.11 | 3.67 | -2.07 | -2.27 | -1.84 | -1.13 | -1.22 |
| T4 | 1.24 | -0.09 | 0.29 | -0.25 | -1 | -1.19 | 0.03 | -0.05 | -1.71 | 0.36 | 0.71 | 0.36 |
| CP3 | -0.02 | 0.23 | 0.35 | 0.24 | 1.27 | -0.05 | 3.37 | -2.14 | -1.82 | -2.04 | -1.88 | -1.91 |
| CPz | -0.08 | -0.32 | -0.49 | -0.02 | 1.37 | -0.1 | 4.01 | -1.86 | -1.65 | -1.72 | -1.35 | -1.14 |
| CP4 | 0.01 | -0.31 | -0.56 | -0.05 | 1.33 | -0.06 | 3.57 | -2.13 | -2.2 | -1.93 | -1.33 | -0.96 |
| T5 | 1.34 | 0.62 | 1 | 0.35 | 0.42 | 0.03 | 1.75 | -2 | -2.54 | -2.05 | -1.82 | -1.49 |
| P3 | -0.57 | 0.17 | 0.21 | 0.2 | 1.32 | 0.4 | 3.04 | -2.21 | -2.06 | -2.19 | -2.14 | -2.17 |
| Pz | -0.31 | -0.22 | -0.47 | 0.04 | 1.2 | -0.1 | 3.57 | -1.97 | -1.98 | -1.64 | -1.41 | -1.06 |
| P4 | -0.34 | -0.47 | -0.76 | -0.19 | 1.34 | -0.04 | 3.22 | -1.66 | -1.92 | -1.28 | -0.84 | -0.33 |
| T6 | -0.38 | 0.13 | -0.05 | 0.33 | 0.7 | -0.19 | 2.8 | -0.23 | -0.95 | 0.07 | 0.3 | 0.76 |
| O1 | -0.07 | 0.47 | 0.24 | 0.58 | 1.07 | 0.12 | 2.51 | -1.73 | -1.85 | -1.7 | -1.3 | -1.07 |
| Oz | -0.32 | 0.15 | -0.25 | 0.37 | 0.89 | 0.01 | 2.4 | -1.18 | -1.8 | -1 | -0.53 | -0.06 |
| O2 | -0.13 | 0.42 | 0.24 | 0.52 | 0.06 | -0.4 | 1.35 | 0.24 | -0.35 | 0.47 | 0.67 | 0.95 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

Plots of qEEG brain topography illustrating the distribution of relative power across the scalp for each frequency band in z-score deviations compared to the healthy control group. Note that relative power is a ratio of the power within a given frequency band over the power across frequency band 1.5 – 30 Hz. A colored z-score scale is shown at the bottom of the figure. Dark-blue colors refer to -2 z-scores ranging through to light blue colors to light green colors representing ~ 0 z-scores (mean), to red colors representing +2 z-scores. The associated table below lists the z-score values occurring at each site per frequency band. Blue colored boxes indicate significantly low qEEG deviations and red colored boxes indicate significantly high qEEG deviations.

## 2.6 Ratio Scores - Eyes Open

| Site | Client Ratio | |
|---|---|---|
| | Theta/Beta1 | Alpha/Beta1 |
| Fp1 | 4.04 | 4.01 |
| Fp2 | 4.01 | 4.29 |
| F7 | 3.3 | 3.48 |
| F3 | 3.31 | 3.51 |
| Fz | 4.52 | 5.63 |
| F4 | 3.72 | 4.5 |
| F8 | 2.42 | 3.16 |
| FC3 | 3.62 | 4.58 |
| FCz | 3.98 | 5.57 |
| FC4 | 3.78 | 6.57 |
| T3 | 0.72 | 1.1 |
| C3 | 3.49 | 6.89 |
| Cz | 3.34 | 6.18 |
| C4 | 3.51 | 8.1 |
| T4 | 1.82 | 1.79 |
| CP3 | 3.19 | 7.62 |
| CPz | 3.16 | 8.24 |
| CP4 | 3.15 | 8.99 |
| T5 | 3.75 | 7.21 |
| P3 | 3.35 | 10.04 |
| Pz | 3.18 | 10.53 |
| P4 | 2.66 | 9.59 |
| T6 | 1.81 | 5.16 |
| O1 | 2.97 | 9.13 |
| Oz | 2.37 | 7.77 |
| O2 | 1.62 | 3.38 |

| Site | Z Score Ratio | |
|---|---|---|
| | Theta/Beta1 | Alpha/Beta1 |
| Fp1 | 1.77 | 1.34 |
| Fp2 | 1.66 | 1.5 |
| F7 | 1.42 | 1.36 |
| F3 | 1.12 | 1.05 |
| Fz | 1.5 | 1.76 |
| F4 | 1.39 | 1.51 |
| F8 | 0.97 | 1.11 |
| FC3 | 1.43 | 1.57 |
| FCz | 1.07 | 1.73 |
| FC4 | 1.59 | 2.35 |
| T3 | -0.62 | -0.4 |
| C3 | 1.43 | 2.2 |
| Cz | 0.93 | 1.78 |
| C4 | 1.45 | 2.42 |
| T4 | 0.84 | 0.3 |
| CP3 | 1.41 | 2.06 |
| CPz | 1.08 | 2 |
| CP4 | 1.46 | 2.15 |
| T5 | 2.09 | 1.79 |
| P3 | 1.55 | 2.15 |
| Pz | 1.31 | 2.06 |
| P4 | 1.24 | 1.86 |
| T6 | 0.78 | 1.02 |
| O1 | 1.67 | 1.73 |
| Oz | 1.3 | 1.63 |
| O2 | 0.46 | 0.31 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

Theta/Beta1 and Alpha/Beta1 qEEG power ratio scores and associated z-score deviations. Statistically significant deviations are illustrated by blue highlighted boxes (low) and red highlighted boxes (high).

## 2.7 Asymmetry Z Scores - Eyes Open

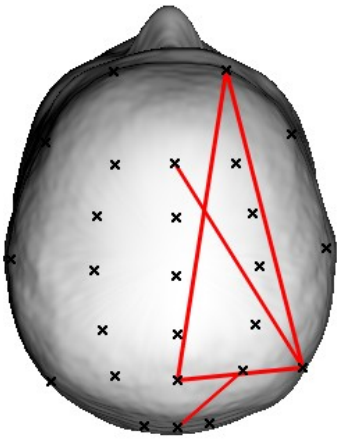
| Site | Z Score | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Delta | Theta | Alpha | Alpha1 | Alpha2 | Beta | Beta1 | Beta2 | Beta3 | Gamma |
| Fp1-Fp2 | -1.12 | -1.26 | -0.46 | -0.62 | -0.26 | -0.63 | -0.77 | -0.57 | -0.48 | -0.97 |
| F7-F8 | -1.15 | -1.24 | 0.3 | -0.55 | 0.91 | 1.72 | 0.53 | 2.02 | 2.21 | 1.57 |
| F3-F4 | 0.34 | 0.2 | 0.6 | 0.14 | 0.78 | -0.51 | -0.49 | -0.86 | 0.16 | -0.41 |
| FC3-FC4 | -0.04 | -0.34 | 2.13 | 0.08 | 2.88 | -0.24 | -0.42 | -0.41 | 0.17 | -0.29 |
| T3-T4 | 0.7 | -0.3 | -1.1 | -1.47 | -0.72 | -1.01 | -1.21 | -0.96 | -0.84 | -0.74 |
| C3-C4 | -1.01 | -1.76 | -1.59 | -1.55 | -1.48 | -1.94 | -1.99 | -1.68 | -1.43 | -0.92 |
| CP3-CP4 | -2.32 | -3.16 | -3.17 | -2.76 | -3.04 | -3.43 | -3.58 | -3.15 | -2.89 | -1.58 |
| T5-T6 | -3.4 | -3.5 | -2.95 | -3.02 | -2.96 | -2.03 | -2.56 | -1.53 | -0.87 | 0.34 |
| P3-P4 | -1.8 | -2.41 | -2.72 | -2.6 | -2.7 | -2.27 | -2.6 | -1.95 | -1.42 | 0.06 |
| O1-O2 | 1.68 | 0.42 | -1.56 | -0.94 | -1.81 | 3.31 | 2.28 | 3.09 | 3.63 | 3.38 |

= statistically significant (-)
= statistically significant (+)
— = data not applicable or missing

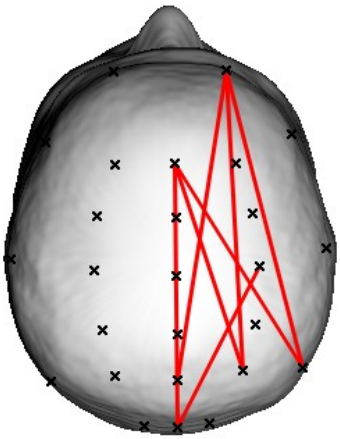
Asymmetries are calculated according to the following formula, (B - A)/(B + A) where A, B refer to the homologous site pairs of interest in each hemisphere. The scores are calculated using an average reference.

## 2.8 Coherence Visual Aids - Eyes Open

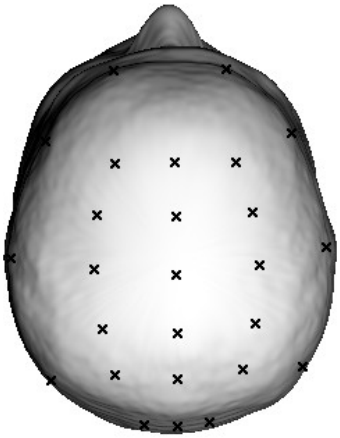
### Delta (1.5-3.5 Hz)



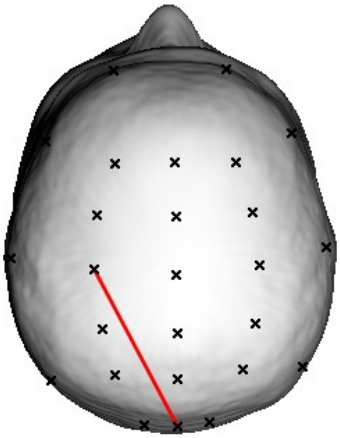
### Theta (4-7.5 Hz)

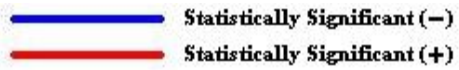


### Alpha (8-13 Hz)



### Beta (14.5-30 Hz)






Brain topography plots showing coherence relationships across the scalp for each frequency band in z-score deviations compared to the healthy control group. Coherence is a measure of coupling or association between the EEG amplitude measured at the same time at specific scalp sites. It is calculated for each frequency band by computing the cross-correlation coefficient between the site pairs of interest. Blue colored lines refer to significantly lower coherence compared to the control group, while red colored lines refer to significantly higher coherence compared to the control group. Associated z-score values are shown on the following page in tables.

## 2.9 Coherence Z Scores - Eyes Open

### Interhemispheric Coherence: Homologous Pairs

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fp1-Fp2 | -0.6 | -0.87 | -1 | -0.6 |
| F7-F8 | -1.07 | -0.79 | -1.61 | -1.32 |
| F3-F4 | -0.84 | -0.88 | -1.24 | -0.96 |
| FC3-FC4 | 1.32 | 1.19 | 0.3 | 0.55 |
| T3-T4 | -0.8 | -0.79 | -0.75 | -0.73 |

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| C3-C4 | 0.33 | 0.46 | -0.97 | 0.06 |
| CP3-CP4 | -0.07 | -0.04 | -1.17 | -0.16 |
| T5-T6 | -1.11 | -0.63 | -0.88 | -0.45 |
| P3-P4 | 0.07 | -0.17 | -0.98 | -0.6 |
| O1-O2 | 0.00 | -0.39 | -0.93 | -0.61 |

### Intrahemispheric Coherence

| Left | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fp1-F7 | -0.01 | 0.11 | -0.47 | -0.23 |
| Fp1-F3 | -0.44 | -0.49 | -1.16 | -0.5 |
| Fp1-FC3 | -0.11 | 0.24 | -0.7 | 0.05 |
| Fp1-T3 | -0.69 | -0.49 | -1.08 | 0.13 |
| Fp1-C3 | -0.21 | 0.1 | -1.28 | -0.7 |
| Fp1-CP3 | 0.03 | -0.12 | -1.3 | -0.6 |
| Fp1-T5 | -0.33 | -0.49 | -0.65 | -0.49 |
| Fp1-P3 | 0.51 | -0.44 | -1.05 | -0.48 |
| Fp1-O1 | -0.58 | -0.3 | -0.35 | -0.71 |
| F7-F3 | -0.45 | 0.6 | -0.76 | -0.84 |
| F7-FC3 | -0.12 | 0.85 | -0.74 | -0.2 |
| F7-T3 | -1.02 | -0.95 | -1.02 | -0.97 |
| F7-C3 | -0.5 | 0.41 | -1.18 | -0.3 |
| F7-CP3 | -0.17 | -0.07 | -1.1 | -0.57 |
| F7-T5 | 1.78 | -0.44 | -0.39 | 1.63 |
| F7-P3 | -0.07 | -0.64 | -0.52 | -0.35 |
| F7-O1 | -0.73 | -0.72 | -0.87 | -0.52 |
| F3-FC3 | -0.48 | -0.14 | -0.96 | -0.59 |
| F3-T3 | -0.8 | -1.17 | -1.31 | -1.09 |
| F3-C3 | -0.36 | -0.21 | -1 | -1.06 |
| F3-CP3 | -0.27 | -0.38 | -0.69 | -1.04 |
| F3-T5 | -0.11 | -0.37 | -0.43 | 0.27 |
| F3-P3 | -0.28 | -0.61 | -0.66 | -1.07 |
| F3-O1 | -0.8 | -0.66 | -0.42 | -0.87 |
| FC3-T3 | -0.99 | -0.84 | -0.84 | -0.88 |
| FC3-C3 | 0.92 | 1.26 | 0.12 | 0.57 |
| FC3-CP3 | 0.64 | 0.58 | -0.57 | 0.27 |
| FC3-T5 | -1.04 | -1.04 | -0.34 | -0.17 |
| FC3-P3 | 0.45 | 0.22 | -0.2 | 0.17 |
| FC3-O1 | -0.51 | -0.27 | 0.39 | -0.42 |
| T3-C3 | -0.71 | -0.68 | -0.16 | -0.81 |
| T3-CP3 | -0.49 | -0.64 | -0.55 | -0.62 |
| T3-T5 | -0.82 | -1.16 | -1.12 | -1.01 |
| T3-P3 | -0.59 | -0.63 | -0.48 | -0.73 |
| T3-O1 | -0.1 | -0.88 | -0.54 | -0.87 |
| C3-CP3 | 0.97 | 0.79 | 0.76 | 0.94 |
| C3-T5 | -1.04 | -1.16 | -0.6 | -0.15 |
| C3-P3 | 0.97 | 0.51 | 0.79 | 1.17 |
| C3-O1 | -0.47 | -0.15 | 1.4 | 0.06 |
| CP3-T5 | -1 | -1.02 | -0.79 | -0.66 |
| CP3-P3 | 0.49 | 0.58 | 0.47 | 0.82 |
| CP3-O1 | -0.88 | -0.34 | 0.28 | -0.48 |
| T5-P3 | -0.86 | -0.94 | -0.45 | -0.56 |
| T5-O1 | -0.74 | -0.54 | -0.08 | -0.4 |
| P3-O1 | -0.45 | 0.03 | 0.58 | -0.34 |

| Right | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fp2-F8 | 0.48 | 0.86 | 0.43 | -0.35 |
| Fp2-F4 | -1.04 | -1.17 | -1.34 | -1.11 |
| Fp2-FC4 | 0.78 | 1.37 | 0.97 | 0.84 |
| Fp2-T4 | -1.03 | -0.65 | -1.07 | -1.13 |
| Fp2-C4 | 0.57 | 1.26 | 1.12 | 0.26 |
| Fp2-CP4 | 0.55 | 1.66 | 0.95 | 0.42 |
| Fp2-T6 | 3.62 | 3.6 | 1.27 | -0.14 |
| Fp2-P4 | 1.4 | 2.31 | 0.82 | 0.11 |
| Fp2-O2 | -0.24 | -0.16 | -0.21 | -0.57 |
| F8-F4 | -1.31 | -1.5 | -1.63 | -1.46 |
| F8-FC4 | 0.03 | -0.12 | 0.33 | -0.25 |
| F8-T4 | -0.99 | -0.38 | -0.58 | -1.4 |
| F8-C4 | -0.27 | -0.11 | 0.4 | 0.13 |
| F8-CP4 | 0.14 | -0.13 | 0.45 | -0.16 |
| F8-T6 | 1.56 | 1.28 | 0.64 | 1.28 |
| F8-P4 | 0.32 | 0.43 | 0.04 | -0.18 |
| F8-O2 | -0.63 | -0.86 | 0.06 | -0.87 |
| F4-FC4 | -1.02 | -1.08 | -1.12 | -0.94 |
| F4-T4 | -0.75 | -1.03 | -1.01 | -0.89 |
| F4-C4 | -0.8 | -0.88 | -0.39 | -0.48 |
| F4-CP4 | -1.01 | -0.98 | -0.48 | -0.47 |
| F4-T6 | -0.83 | -0.56 | -0.31 | -0.65 |
| F4-P4 | -0.63 | -0.54 | 0.07 | 0.02 |
| F4-O2 | -0.71 | -0.46 | -0.71 | -0.94 |
| FC4-T4 | -0.89 | -0.74 | -0.46 | -1.07 |
| FC4-C4 | 0.48 | 0.76 | 1.03 | 0.45 |
| FC4-CP4 | 1.44 | 1.73 | 1.3 | 1.31 |
| FC4-T6 | -0.06 | 0.47 | 0.43 | -0.69 |
| FC4-P4 | 0.29 | 0.88 | 0.67 | 0.38 |
| FC4-O2 | -0.97 | -1 | -1.18 | -1.08 |
| T4-C4 | -0.99 | -1.01 | -0.82 | -1.25 |
| T4-CP4 | -0.95 | -0.87 | -0.84 | -1.42 |
| T4-T6 | -1.02 | -0.85 | -1.04 | -1.06 |
| T4-P4 | -1.02 | -0.84 | -0.94 | -1.22 |
| T4-O2 | -0.26 | -0.48 | -0.72 | -0.67 |
| C4-CP4 | 0.79 | 1.09 | 0.9 | 0.78 |
| C4-T6 | 0.87 | 1.92 | 0.71 | 0.64 |
| C4-P4 | 0.72 | 1.35 | 1.03 | 1.1 |
| C4-O2 | 0.16 | -0.2 | -0.71 | -0.2 |
| CP4-T6 | 0.4 | 0.93 | 0.69 | -0.03 |
| CP4-P4 | 0.46 | 0.76 | 0.81 | 0.59 |
| CP4-O2 | -0.99 | -0.79 | -1.1 | -0.94 |
| T6-P4 | 1.13 | 1.75 | 0.88 | 1.01 |
| T6-O2 | 0.03 | -0.15 | -0.72 | 0.15 |
| P4-O2 | -0.48 | -0.46 | -0.94 | -0.38 |

= statistically significant (-); = statistically significant (+); — = data not applicable or missing

## Midline Coherence

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Fz-Fp1 | -0.45 | -0.43 | -0.67 | -0.1 |
| Fz-Fp2 | 1.22 | 1.88 | 0.98 | 1.34 |
| Fz-F7 | -0.45 | -0.01 | -0.62 | -0.57 |
| Fz-F3 | -0.95 | -0.61 | -1.03 | -0.83 |
| Fz-F4 | -1.04 | -1.13 | -1.27 | -0.6 |
| Fz-F8 | -0.08 | 0.39 | 0.19 | -0.45 |
| Fz-FC3 | 1.06 | 0.99 | 0.53 | 0.88 |
| Fz-FCz | -0.04 | 0.32 | -0.02 | 0.05 |
| Fz-FC4 | 0.73 | 1.06 | 0.93 | 0.59 |
| Fz-T3 | -0.89 | -1.11 | -1.41 | -0.86 |
| Fz-C3 | 0.18 | 0.78 | -1.09 | -0.3 |
| Fz-Cz | -0.61 | -0.66 | -0.61 | -0.92 |
| Fz-C4 | 1.43 | 1.42 | 0.97 | 0.63 |
| Fz-T4 | -1.01 | -0.89 | -0.88 | -1.25 |
| Fz-CP3 | -0.61 | 0.24 | -1.26 | -0.78 |
| Fz-CPz | 0.62 | 0.67 | 0.3 | -0.12 |
| Fz-CP4 | 0.96 | 1.86 | 0.99 | 0.61 |
| Fz-T5 | -0.92 | -0.87 | 0.36 | -0.39 |
| Fz-P3 | 0.05 | 0.06 | -0.74 | -0.83 |
| Fz-Pz | 1.48 | 1.36 | 0.91 | 0.14 |
| Fz-P4 | 1.23 | 2.24 | 0.66 | 0.84 |
| Fz-T6 | 2.2 | 2.43 | 0.34 | -0.18 |
| Fz-O1 | 0.71 | -0.03 | 0.01 | -0.32 |
| Fz-Oz | 1.27 | 2.1 | -0.57 | 0.43 |
| Fz-O2 | 0.19 | -0.53 | -0.33 | -0.88 |
| Cz-Fp1 | -0.94 | -0.54 | -1.05 | -0.4 |
| Cz-Fp2 | -0.14 | -0.15 | -0.03 | -0.56 |
| Cz-F7 | -0.09 | 0.44 | -0.87 | 0.63 |
| Cz-F3 | -0.75 | -0.32 | -1.09 | -0.54 |
| Cz-F4 | -1.16 | -1.39 | -1.44 | -1.55 |
| Cz-F8 | -0.81 | -0.11 | -0.12 | -0.7 |
| Cz-FC3 | -0.82 | -0.2 | -0.79 | -0.47 |
| Cz-FCz | -0.86 | -0.63 | -0.5 | -0.89 |
| Cz-FC4 | -0.85 | -0.6 | -0.04 | -0.72 |
| Cz-T3 | -0.65 | -0.78 | -1.1 | -0.28 |
| Cz-C3 | -0.97 | -0.35 | -0.88 | -0.51 |
| Cz-C4 | -0.83 | -0.35 | 0.34 | -0.13 |
| Cz-T4 | -0.52 | -0.44 | 0.04 | -1.03 |
| Cz-CP3 | -1.19 | -0.68 | -1.04 | -0.8 |
| Cz-CPz | -0.58 | -0.54 | 0.2 | -0.54 |
| Cz-CP4 | -1.02 | -0.58 | 0.46 | -0.34 |
| Cz-T5 | -0.83 | -0.91 | -0.61 | -0.14 |
| Cz-P3 | -0.7 | -0.46 | -0.57 | -0.7 |
| Cz-Pz | -0.25 | -0.03 | 0.93 | 0.09 |
| Cz-P4 | -0.43 | 0.01 | 0.78 | 0.19 |
| Cz-T6 | 0.2 | 0.83 | 1.37 | 0.1 |
| Cz-O1 | -0.47 | -0.35 | 0.69 | 0.01 |

| | Delta | Theta | Alpha | Beta |
|---|---|---|---|---|
| Cz-Oz | 0.17 | 0.28 | -0.03 | 0.52 |
| Cz-O2 | -1.22 | -1 | -0.8 | -0.97 |
| Pz-Fp1 | 0.22 | -0.22 | -0.86 | -0.21 |
| Pz-Fp2 | 2.2 | 2.07 | 0.71 | 0.65 |
| Pz-F7 | 0.00 | 0.23 | 0.16 | 0.78 |
| Pz-F3 | -0.39 | 0.24 | -0.11 | -0.64 |
| Pz-F4 | -0.97 | -0.77 | -0.58 | -0.68 |
| Pz-F8 | 1.93 | 1.25 | 0.49 | 0.23 |
| Pz-FC3 | 0.48 | 1.56 | 1.47 | 1.03 |
| Pz-FCz | 0.03 | 0.69 | 1.41 | 0.26 |
| Pz-FC4 | 0.43 | 0.82 | 0.84 | 0.32 |
| Pz-T3 | -0.75 | -0.79 | -0.82 | -0.52 |
| Pz-C3 | 0.38 | 1.19 | 1.01 | 1.76 |
| Pz-C4 | 0.89 | 1.38 | 0.81 | 0.98 |
| Pz-T4 | -0.93 | -0.76 | -0.36 | -1.15 |
| Pz-CP3 | -0.42 | 0.16 | -0.19 | 0.27 |
| Pz-CPz | 1.01 | 0.71 | 1.08 | 0.55 |
| Pz-CP4 | 0.58 | 0.83 | 0.41 | 0.62 |
| Pz-T5 | -0.79 | -0.71 | -0.69 | -0.02 |
| Pz-P3 | -0.02 | 0.29 | 0.08 | 0.12 |
| Pz-P4 | 1.18 | 1.04 | 0.43 | 0.59 |
| Pz-T6 | 2.13 | 1.75 | -0.15 | 0.25 |
| Pz-O1 | 0.52 | 0.47 | 0.48 | 0.7 |
| Pz-Oz | 1.16 | 1.45 | 0.42 | 1.22 |
| Pz-O2 | -0.57 | -0.69 | -1.11 | -0.94 |
| Oz-Fp1 | 0.7 | -0.43 | -0.83 | -0.13 |
| Oz-Fp2 | 1.04 | 0.54 | -0.48 | -0.57 |
| Oz-F7 | -0.12 | -0.58 | -0.75 | 0.68 |
| Oz-F3 | 0.09 | 0.42 | -0.45 | 0.3 |
| Oz-F4 | 0.1 | 0.45 | -0.83 | 0.06 |
| Oz-F8 | -0.23 | -0.61 | 0.88 | -0.88 |
| Oz-FC3 | 0.74 | 1.43 | 0.17 | 1.47 |
| Oz-FCz | 0.16 | 1.46 | -0.02 | -0.13 |
| Oz-FC4 | 0.81 | 1.63 | -0.57 | -0.26 |
| Oz-T3 | -0.61 | -0.89 | -0.81 | -0.89 |
| Oz-C3 | 0.78 | 0.95 | 1.03 | 2.28 |
| Oz-C4 | 1.66 | 2.86 | -0.34 | 1.28 |
| Oz-T4 | -0.74 | -0.78 | -0.87 | -1.06 |
| Oz-CP3 | 0.03 | 0.66 | 0.15 | 0.72 |
| Oz-CPz | 1.59 | 1.21 | 0.6 | 0.71 |
| Oz-CP4 | 1.55 | 1.95 | -0.16 | 0.57 |
| Oz-T5 | -0.57 | -0.02 | -0.06 | 0.43 |
| Oz-P3 | 0.72 | 0.81 | 0.73 | 0.43 |
| Oz-P4 | 2.06 | 1.66 | 0.32 | 1.24 |
| Oz-T6 | 1.47 | 1.16 | -0.47 | 0.23 |
| Oz-O1 | -0.16 | 0.05 | 0.11 | -0.35 |
| Oz-O2 | -0.95 | -1 | -1.42 | -1 |

= statistically significant (-); = statistically significant (+); — = data not applicable or missing

### 5 most significant scores

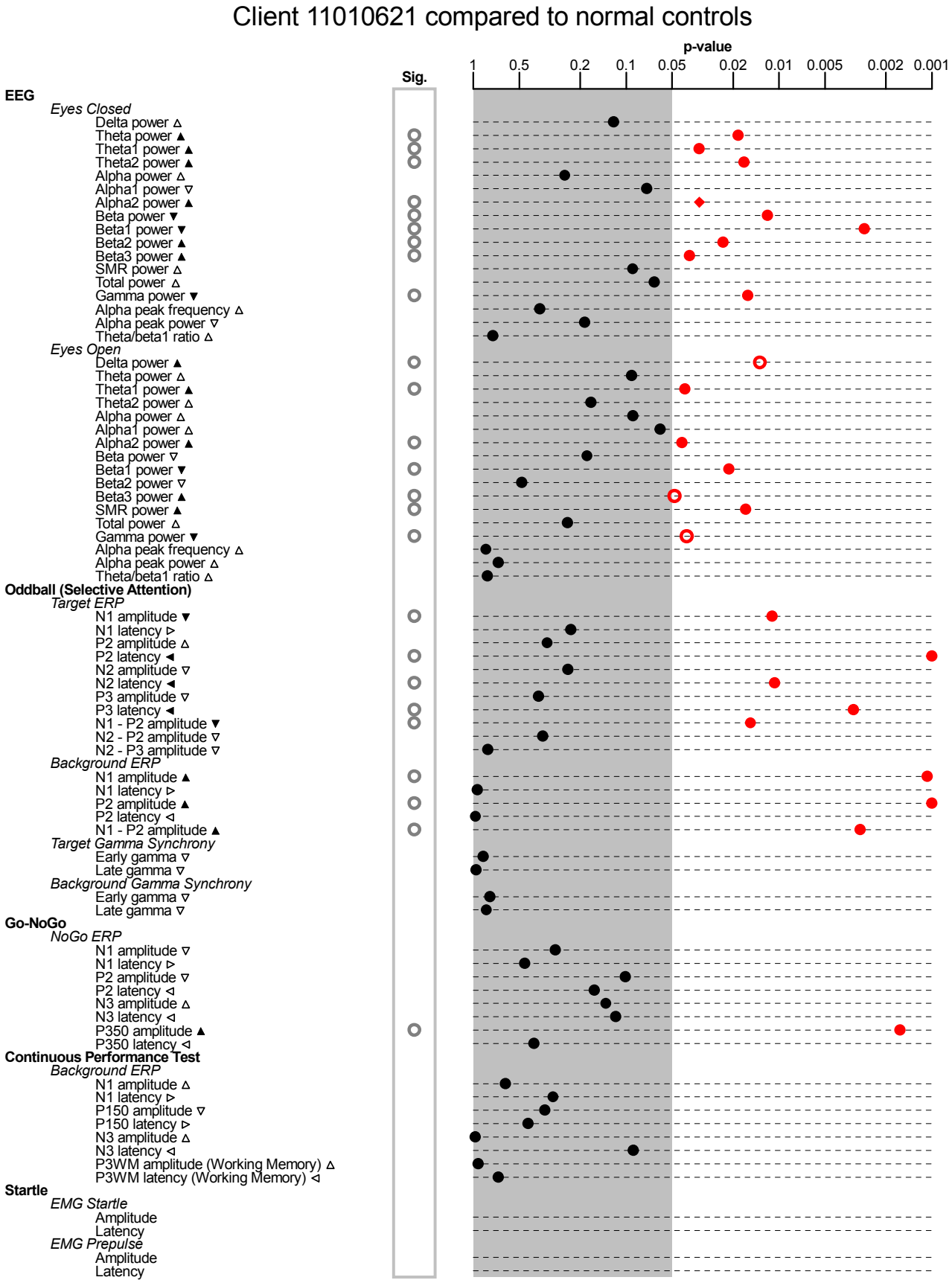
| | Site | Measure | Client | Average | Std. Dev | Z Score | Percentile |
|---|---|---|---|---|---|---|---|
| ● | Fp2-T6 | Delta | 0.2 | 0.04 | 0.04 | 3.62 | $100^{th}$ |
| ● | Fp2-T6 | Theta | 0.19 | 0.04 | 0.04 | 3.6 | $100^{th}$ |
| ● | Oz-C4 | Theta | 0.35 | 0.11 | 0.08 | 2.86 | $100^{th}$ |
| ● | Fz-T6 | Theta | 0.23 | 0.07 | 0.07 | 2.43 | $99^{th}$ |
| ● | Fp2-P4 | Theta | 0.19 | 0.07 | 0.05 | 2.31 | $99^{th}$ |

Compared with the normal controls (matched for age and gender)

● = statistically significant (-); ● = statistically significant (+); Std. Dev = standard deviation

# 3. Electrical Brain Function (EEG& ERP)

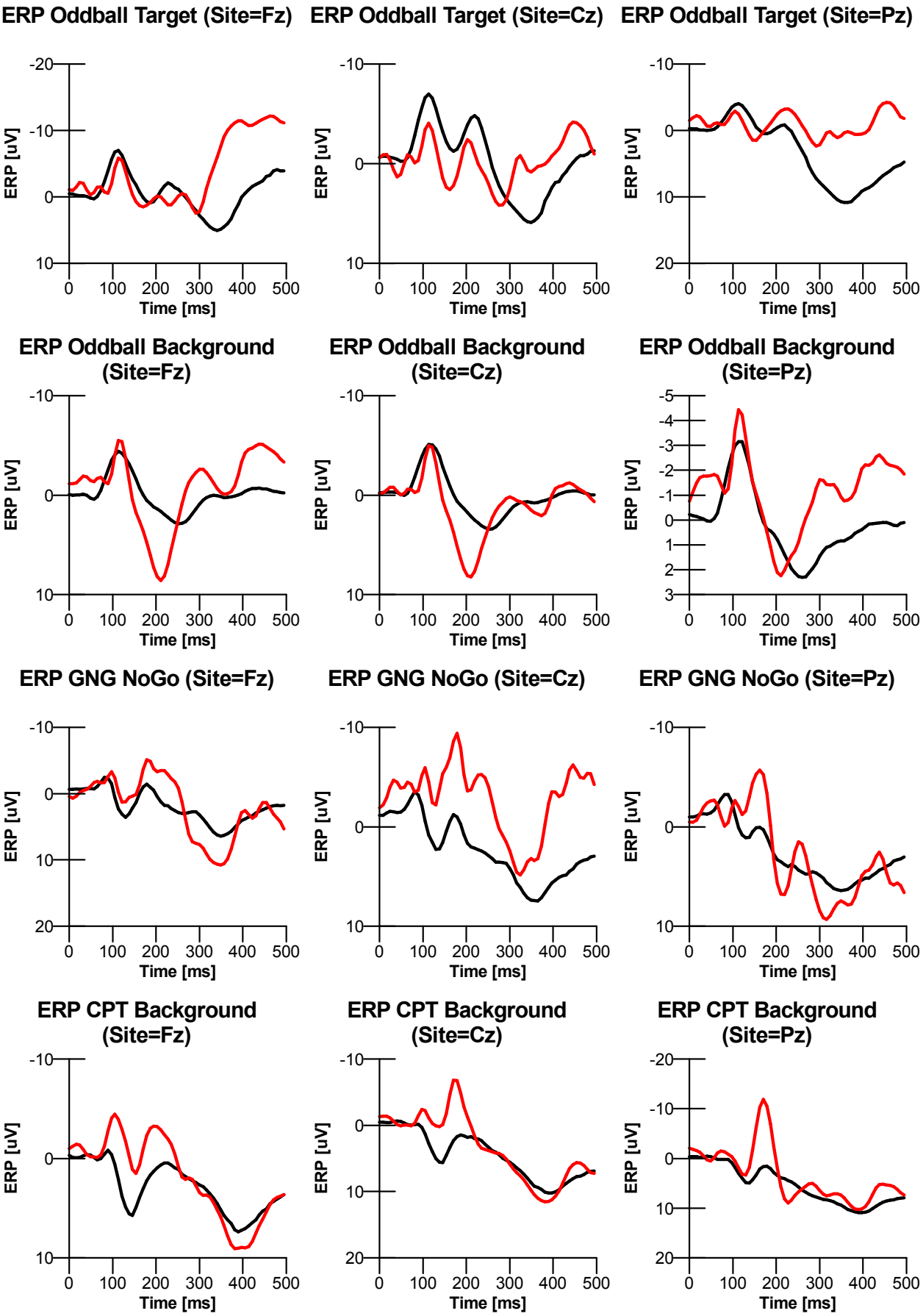
## 3.1 Statistical summary of the Electrical Brain Function scores




The circles in the Sig. column indicate statistically significant differences compared with the normal controls (matched for age and gender). Triangles show the direction of change. The statistical analyses undertaken include: i) Solid circles reflect Mahalanobis differences for sites F3, Fz, F4, C3, Cz, C4, P3, Pz and P4. ii) Open circles reflect when Mahalanobis analysis across all sites was additionally significant. iii) Squares reflect t-test significance on the key site for that paradigm according to the scientific literature. iv) Diamonds reflect relative EEG power across all sites was additionally significant.

The direction and spatial distribution of selected key statistically significant finding is shown in the graphs on pages 21 to 23.

## 3.2 ERP Fz, Cz, Pz visualization (whether or not statistically significant)

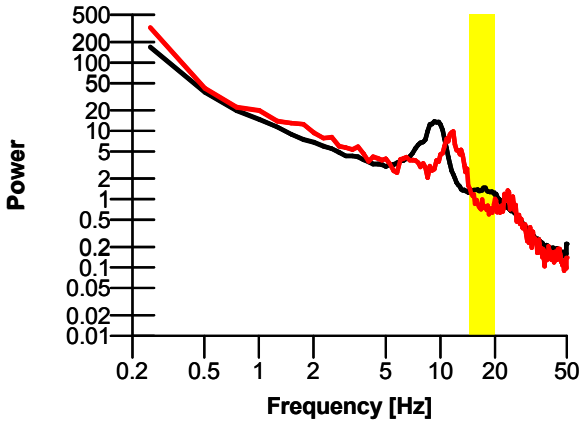



Group average normal controls (matched for age and gender) - black; Individual client in red.

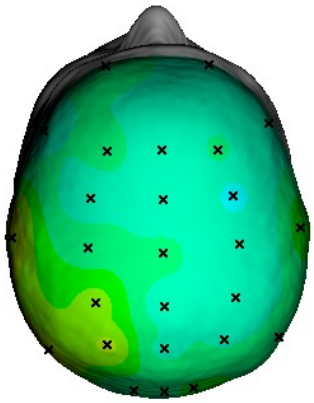
## 3.3 Visualization of THE most statistically significant result in each paradigm (followed by all sites data)

(Client 11010621 vs. Controls)

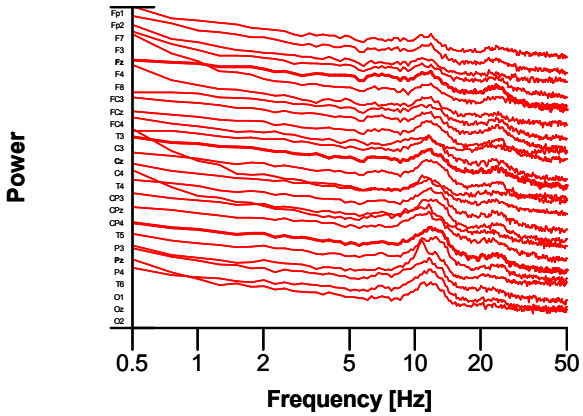
**EEG Eyes Closed (Site=Cz)**



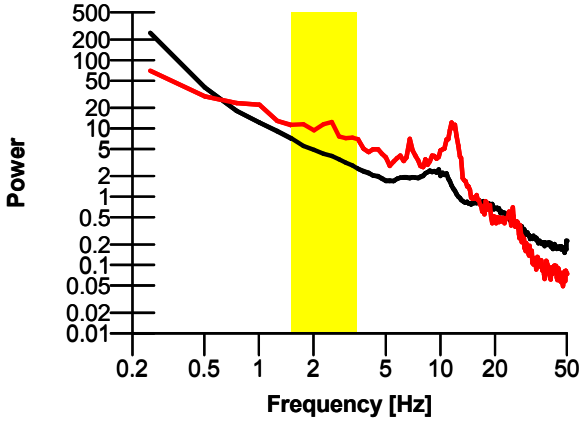

**Beta1 Power**



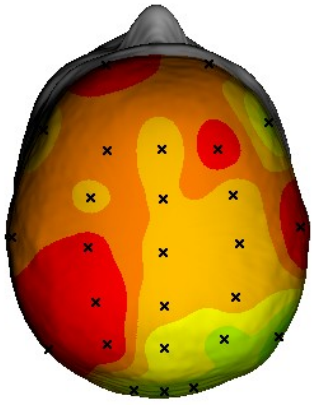

EEG Eyes Closed (All Sites FFT)




**EEG Eyes Open (Site=C3)**

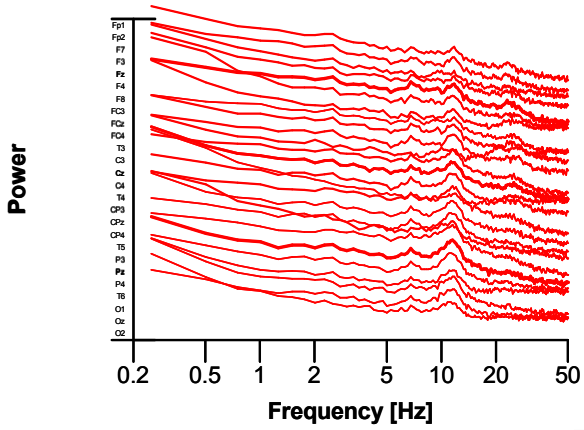



**Delta Power**

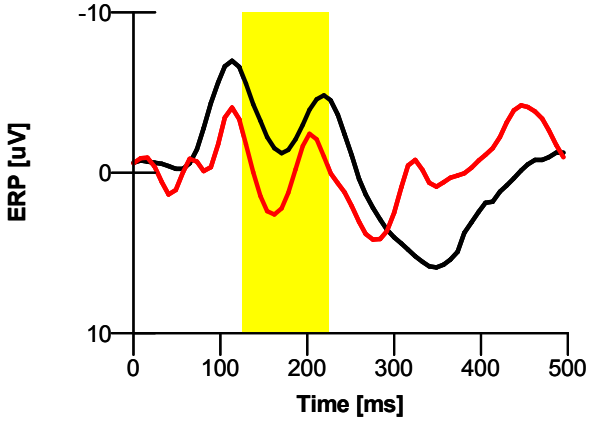


The analog figures show the electrical brain function data of the client (red) compared to their age and gender matched controls (black). The head maps reflect the spatial distribution of the statistically significant findings as indicated by the yellow bars in the single site waveforms (increases are shown in red and decreases in blue). If the data is not applicable or missing at a site, that site is not shown. The waveforms across sites (Fz, Cz, Pz in bold) show the client's data for paradigms with statistically significant findings.

## EEG Eyes Open (All Sites FFT)

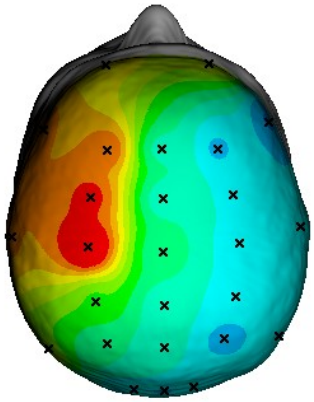



## ERP Oddball Target (Site=Cz)

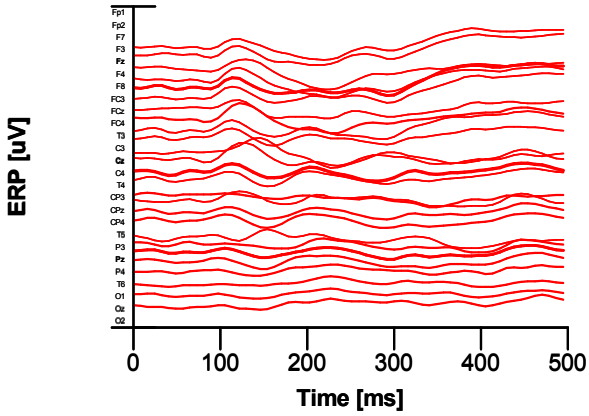


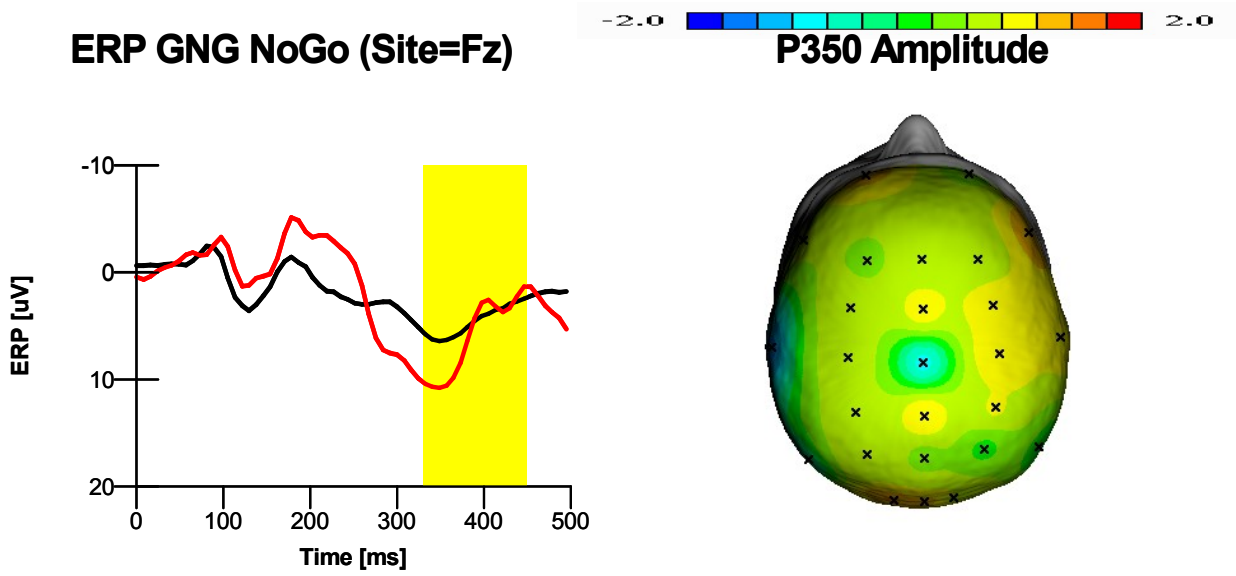


## P2 Latency

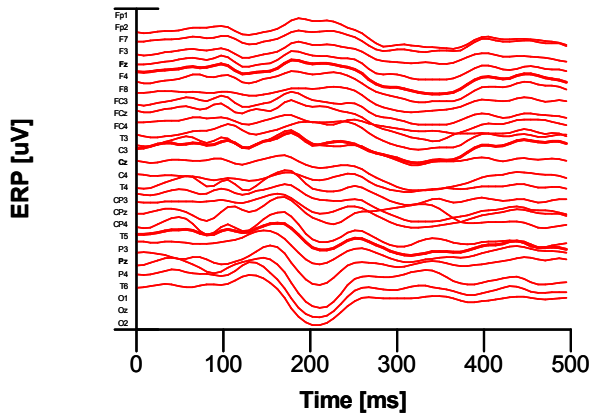


## ERP Oddball Target (All Sites ERP)





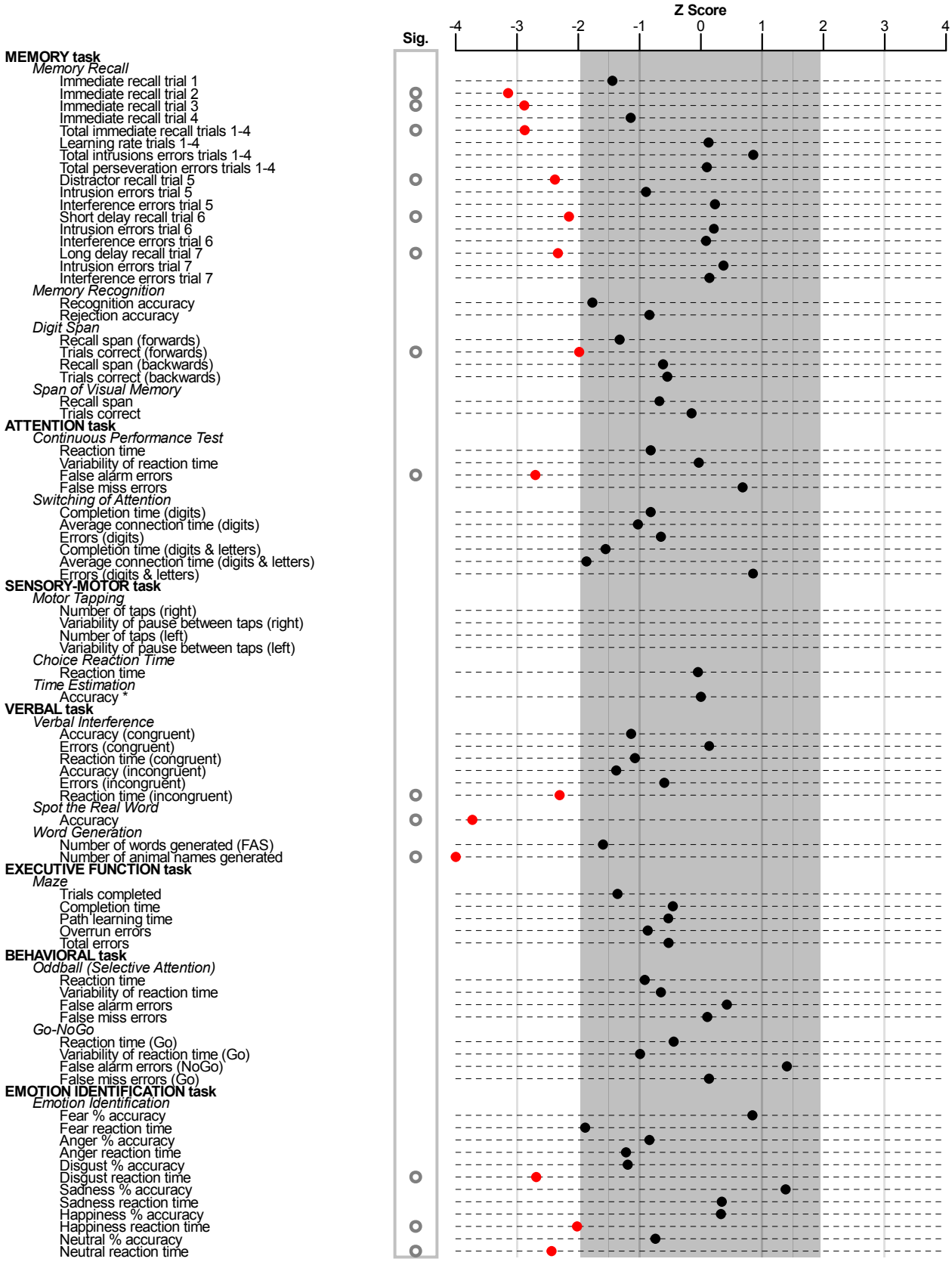

ERP GNG NoGo (All Sites ERP)



# 4. Neuropsychological Test Battery

## 4.1 Statistical summary of the Neuropsychological Test Battery scores

Client 11010621 compared to normal controls




For convenience, the tasks are organized by broad cognitive groupings. The circles in the Sig. column indicate statistically significant differences compared with the normal control. The Z scores on the right are normalized for age, gender and years of education, which means differences from zero reflect differences from 'average peer'. Positive Z scores indicate strengths, negative Z scores indicate potential deficits. Z scores beyond -2 to +2 are statistically significant. False alarm errors (respond when should not) = false positive; errors of commission. False miss errors (not respond when should) = false negatives; errors of omission. Memory Recall (Intrusion = words not on the list. Interference = words from the other list. Perseveration = repeat errors). Time Estimation Accuracy (* optimum performance is a score of 0; a negative score reflects underestimation of time intervals and a positive score reflects overestimation of time intervals). Specialist interpretation is required.

## 4.2 Details of the clients Neuropsychological Test Battery scores

| Measure | Client | Int. Brain Database Average | Int. Brain Database Std. Dev | Z Score | Percentile |
|---|---|---|---|---|---|
| **Memory Recall** | | | | | |
| Immediate recall trial 1 | 4 | 6.1 | 1.4 | -1.45 | $7^{th}$ |
| • Immediate recall trial 2 | 4 | 8.5 | 1.4 | -3.14 | $< 1^{st}$ |
| • Immediate recall trial 3 | 5 | 9.4 | 1.5 | -2.88 | $< 1^{st}$ |
| Immediate recall trial 4 | 8 | 10.1 | 1.8 | -1.15 | $13^{th}$ |
| • Total immediate recall trials 1-4 | 21 | 33.7 | 4.4 | -2.88 | $< 1^{st}$ |
| Learning rate trials 1-4 | 1.3 | 1.23 | 0.53 | 0.13 | $55^{th}$ |
| Total intrusions errors trials 1-4 | 0 | 1 | 1.2 | 0.86 | $80^{th}$ |
| Total perseveration errors trials 1-4 | 2 | 2.2 | 2.1 | 0.1 | $54^{th}$ |
| • Distractor recall trial 5 | 1 | 5.1 | 1.7 | -2.38 | $1^{st}$ |
| Intrusion errors trial 5 | 1 | 0.31 | 0.77 | -0.89 | $19^{th}$ |
| Interference errors trial 5 | 0 | 0.16 | 0.71 | 0.23 | $59^{th}$ |
| • Short delay recall trial 6 | 4 | 8.2 | 2 | -2.15 | $2^{nd}$ |
| Intrusion errors trial 6 | 0 | 0.18 | 0.81 | 0.22 | $59^{th}$ |
| Interference errors trial 6 | 0 | 0.1 | 1.1 | 0.08 | $53^{rd}$ |
| • Long delay recall trial 7 | 3 | 7.7 | 2 | -2.34 | $1^{st}$ |
| Intrusion errors trial 7 | 0 | 0.3 | 0.82 | 0.37 | $64^{th}$ |
| Interference errors trial 7 | 0 | 0.09 | 0.68 | 0.14 | $55^{th}$ |
| **Memory Recognition** | | | | | |
| Recognition accuracy | 9 | 11.6 | 1.5 | -1.77 | $4^{th}$ |
| Rejection accuracy | 11 | 11.8 | 1 | -0.84 | $20^{th}$ |
| **Digit Span** | | | | | |
| Recall span (forwards) | 5 | 6.8 | 1.3 | -1.33 | $9^{th}$ |
| • Trials correct (forwards) | 4 | 8.3 | 2.2 | -1.98 | $2^{nd}$ |
| Recall span (backwards) | 4 | 5 | 1.7 | -0.62 | $27^{th}$ |
| Trials correct (backwards) | 3 | 4.7 | 3 | -0.55 | $29^{th}$ |
| **Span of Visual Memory** | | | | | |
| Recall span | 5 | 5.7 | 1 | -0.67 | $25^{th}$ |
| Trials correct | 8 | 8.3 | 1.9 | -0.15 | $44^{th}$ |
| **Continuous Performance Test** | | | | | |
| Reaction time | $545ms$ | $471ms$ | $90ms$ | -0.82 | $21^{st}$ |
| Variability of reaction time | $104ms$ | $103ms$ | $38ms$ | -0.03 | $49^{th}$ |
| • False alarm errors | 4 | 0.3 | 1.4 | -2.7 | $< 1^{st}$ |
| False miss errors | 0 | 0.46 | 0.67 | 0.68 | $75^{th}$ |
| **Switching of Attention** | | | | | |
| Completion time (digits) | $24.7s$ | $20.2s$ | $5.5s$ | -0.82 | $21^{st}$ |
| Average connection time (digits) | $962ms$ | $755ms$ | $201ms$ | -1.03 | $15^{th}$ |
| Errors (digits) | 1 | 0.44 | 0.85 | -0.65 | $26^{th}$ |
| Completion time (digits & letters) | $66s$ | $43s$ | $15s$ | -1.56 | $6^{th}$ |
| Average connection time (digits & letters) | $2.79s$ | $1.65s$ | $0.6s$ | -1.87 | $3^{rd}$ |
| Errors (digits & letters) | 0 | 0.64 | 0.75 | 0.86 | $80^{th}$ |
| **Choice Reaction Time** | | | | | |
| Reaction time | $702ms$ | $695ms$ | $124ms$ | -0.05 | $48^{th}$ |
| **Time Estimation** | | | | | |
| Accuracy * | $-0.08s$ | $-0.08s$ | $0.17s$ | 0.00 | |

Raw scores of the Cognitive findings ( • = statistically significant; Std. Dev = standard deviation; Int = international).

Time Estimation Accuracy (* optimum performance is a standardized score of 0; a negative standardized score reflects underestimation of time intervals and a positive standardized score reflects overestimation of time intervals).

| Measure | Client | Int. Brain Database Average | Int. Brain Database Std. Dev | Z Score | Percentile |
|---|---|---|---|---|---|
| **Verbal Interference** | | | | | |
| Accuracy (congruent) | 15 | 18 | 2.6 | -1.14 | $13^{th}$ |
| Errors (congruent) | 0 | 0.2 | 1.1 | 0.14 | $56^{th}$ |
| Reaction time (congruent) | 1242$ms$ | 1075$ms$ | 155$ms$ | -1.08 | $14^{th}$ |
| Accuracy (incongruent) | 7 | 11.7 | 3.4 | -1.38 | $8^{th}$ |
| Errors (incongruent) | 1 | 0.49 | 0.84 | -0.6 | $27^{th}$ |
| • Reaction time (incongruent) | 2381$ms$ | 1523$ms$ | 372$ms$ | -2.31 | $1^{st}$ |
| **Spot the Real Word** | | | | | |
| • Accuracy | 32 | 51.3 | 5.2 | -3.73 | $< 1^{st}$ |
| **Word Generation** | | | | | |
| Number of words generated (FAS) | 10.3 | 16.6 | 3.9 | -1.6 | $5^{th}$ |
| • Number of animal names generated | 0 | 24.6 | 5.9 | -4.16 | $< 1^{st}$ |
| **Maze** | | | | | |
| Trials completed | 13 | 7.3 | 4.2 | -1.36 | $9^{th}$ |
| Completion time | 190$s$ | 156$s$ | 74$s$ | -0.46 | $32^{nd}$ |
| Path learning time | 168$s$ | 127$s$ | 78$s$ | -0.53 | $30^{th}$ |
| Overrun errors | 20 | 12.5 | 8.6 | -0.87 | $19^{th}$ |
| Total errors | 38 | 27 | 21 | -0.53 | $30^{th}$ |
| **Oddball (Selective Attention)** | | | | | |
| Reaction time | 364$ms$ | 324$ms$ | 44$ms$ | -0.92 | $18^{th}$ |
| Variability of reaction time | 63$ms$ | 52$ms$ | 17$ms$ | -0.65 | $26^{th}$ |
| False alarm errors | 0 | 0.34 | 0.79 | 0.43 | $66^{th}$ |
| False miss errors | 0 | 0.05 | 0.5 | 0.1 | $54^{th}$ |
| **Go-NoGo** | | | | | |
| Reaction time (Go) | 303$ms$ | 285$ms$ | 40$ms$ | -0.45 | $33^{rd}$ |
| Variability of reaction time (Go) | 82$ms$ | 60$ms$ | 23$ms$ | -1 | $16^{th}$ |
| False alarm errors (NoGo) | 0 | 1.4 | 1 | 1.4 | $92^{nd}$ |
| False miss errors (Go) | 0 | 0.11 | 0.8 | 0.13 | $55^{th}$ |
| **Emotion Identification** | | | | | |
| Fear % accuracy | 88 | 71 | 20 | 0.84 | $80^{th}$ |
| Fear reaction time | 5.7$s$ | 3.2$s$ | 1.3$s$ | -1.89 | $3^{rd}$ |
| Anger % accuracy | 50 | 63 | 16 | -0.84 | $20^{th}$ |
| Anger reaction time | 3.54$s$ | 2.44$s$ | 0.9$s$ | -1.22 | $11^{th}$ |
| Disgust % accuracy | 25 | 46 | 18 | -1.2 | $12^{th}$ |
| • Disgust reaction time | 5.7$s$ | 2.6$s$ | 1.1$s$ | -2.69 | $< 1^{st}$ |
| Sadness % accuracy | 100 | 71 | 21 | 1.38 | $92^{nd}$ |
| Sadness reaction time | 2.47$s$ | 2.74$s$ | 0.8$s$ | 0.34 | $63^{rd}$ |
| Happiness % accuracy | 100 | 95 | 15 | 0.33 | $63^{rd}$ |
| • Happiness reaction time | 2367$ms$ | 1503$ms$ | 427$ms$ | -2.02 | $2^{nd}$ |
| Neutral % accuracy | 88 | 96 | 12 | -0.75 | $23^{rd}$ |
| • Neutral reaction time | 3.28$s$ | 1.66$s$ | 0.66$s$ | -2.44 | $1^{st}$ |

Raw scores of the Cognitive findings ( • = statistically significant; Std. Dev = standard deviation; Int = international).

| Nominal classification bands | Percentile boundary |
|---|---|
| Very superior | $\leq 100^{th}$ |
| Superior | $< 98^{th}$ |
| High average | $< 91^{st}$ |
| Average | $< 75^{th}$ |
| Low average | $< 25^{th}$ |
| Borderline | $< 9^{th}$ |
| Extremely Low | $< 2^{nd}$ |

**Malingering Score**
Measures possible deliberate underperformance by the subject.
Details are withheld for reasons of confidentiality.

On a test designed to investigate the validity of responding, there was no suggestion of sub-optimal effort or any deliberate attempt to feign impairment.

## **Appendix 1.** Procedure for EEG/ERP acquisition and analysis.

EEG was acquired using a Quikcap and 40 channel NuAmps with electrodes located according to the 10% or 10-10 system (Nuwer et al, 1998) from the following 26 sites: Fp1, Fp2, F7, F3, Fz, F4, F8, FC3, FCz, FC4, T3, C3, Cz, C4, T4, CP3, CPz, CP4, T5, P3, Pz, P4, T6, O1, Oz and O2. Horizontal eye movements were recorded from electrodes placed 1.5cm lateral to the outer canthus of each eye. Vertical eye movements were recorded with electrodes placed 3mm above the middle of the left eyebrow and 1.5cm below the middle of the left bottom eye-lid. Additional physiological data was obtained from the orbicularis oculus and the masseter. All data was recorded relative to the virtual ground and referenced offline to linked mastoids. Electrode impedance was kept below 5 kOhms. Data was sampled at 500 Hz using a 22 bit analog-to-digital converter (NuAmps). A low pass filter with attenuation of 40dB per decade above 100 Hz was employed prior to digitization. Data was corrected off-line for EOG artefact using the method of Gratton et al. (1983).

### EEG analysis

Average power spectra were computed for the eyes open and eyes closed paradigms. The two minutes of EEG in each paradigm were first divided into adjacent intervals of two seconds. Power spectral analysis was performed on each four second interval by first applying a Welch window to the data and then performing a Fast Fourier Transform (FFT). The resulting power spectra were then averaged for each electrode position in each of the two paradigms over the following frequency bands: delta (1.5 – 3.5 Hz), theta (4 – 7.5 Hz), theta1 (4 – 5 Hz), theta2 (5 – 7.5 Hz), alpha (8 – 13 Hz), alpha1 (8 – 11 Hz), alpha2 (11 – 13 Hz), SMR (12 – 15 Hz), beta (14.5 – 30 Hz), beta1 (14.5 – 20 Hz), beta2 (20 – 25 Hz), beta3 (25 – 30 Hz), total (1.5 – 30 Hz) and gamma (31 – 49 Hz). This data was then square-root transformed to approximate the normal distributional assumptions required by parametric statistical methods. Alpha peak frequency was calculated over frequency band 5 – 15 Hz.

The EEG Asymmetry scores were analyzed with an average reference.

### ERP analysis

The single-trial epochs to target and/or background stimuli from the Oddball, Go-NoGo and Continuous Performance Test paradigms were filtered with a low-pass Tukey (cosine taper) filter function that attenuated frequencies above 25 Hz. These epochs were then averaged to form conventional ERPs. The amplitude and latency of the selected ERP components were identified.

# Additional Notes on Report

**Missing data:**

- Motor Tapping (left hand) - Too few responses to meet scoring criteria, so scores are not available
- Motor Tapping (right hand) - Too few responses to meet scoring criteria, so scores are not available
- PPI - Test was not completed (e.g. user exited the software)