



Client Assessment (SAMPLE)

Birth date 1989 (age 30 years; female)

.....

This report is for clinicians only

CONTENTS OF THIS REPORT

1. EEGs Eyes Closed	1
2. EEGs Eyes Open	7
3. Electrical Brain Function (EEG & ERP)	13
4. Neuropsychological Test Battery	17
Appendix 1. Procedure for EEG/ERP acquisition and analysis	20

Important Information

Reference: Test Date: Jan 2020 Report Date: Feb 2020

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.

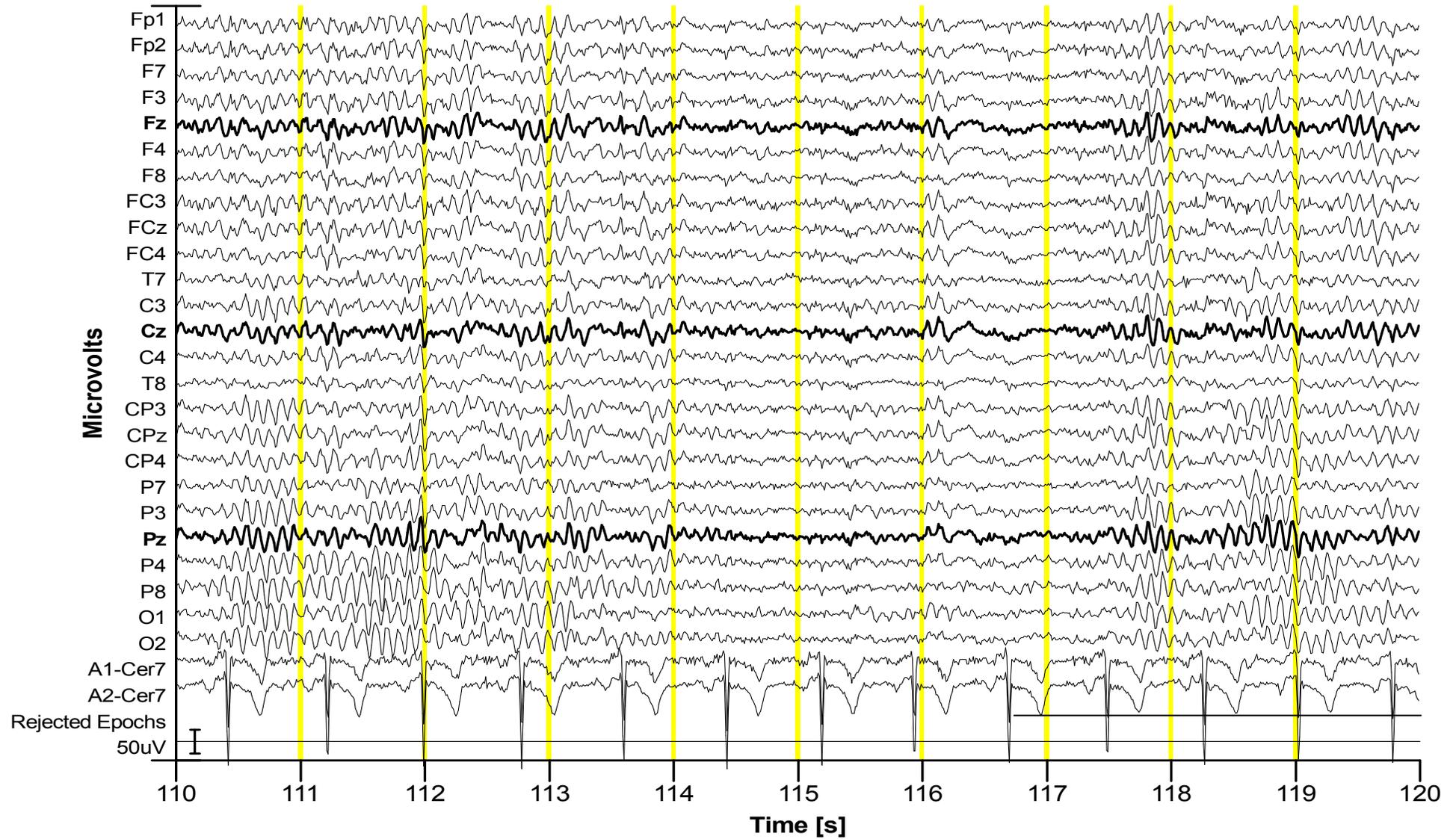
Patients should not disregard professional medical advice or delay seeking medical treatment as a result of findings contained within this report.

BRC and neuroCare group expressly disclaim any and all responsibility for any liability, loss or risk which may be or is incurred as a consequence, directly or indirectly, of any use and application of this report.

This report and the tests on which it is based are provided by BRC Distribution Pty Ltd ACN 098 619 268. © 2020 Brain Resource Group.

1. EEGs Eyes Closed

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

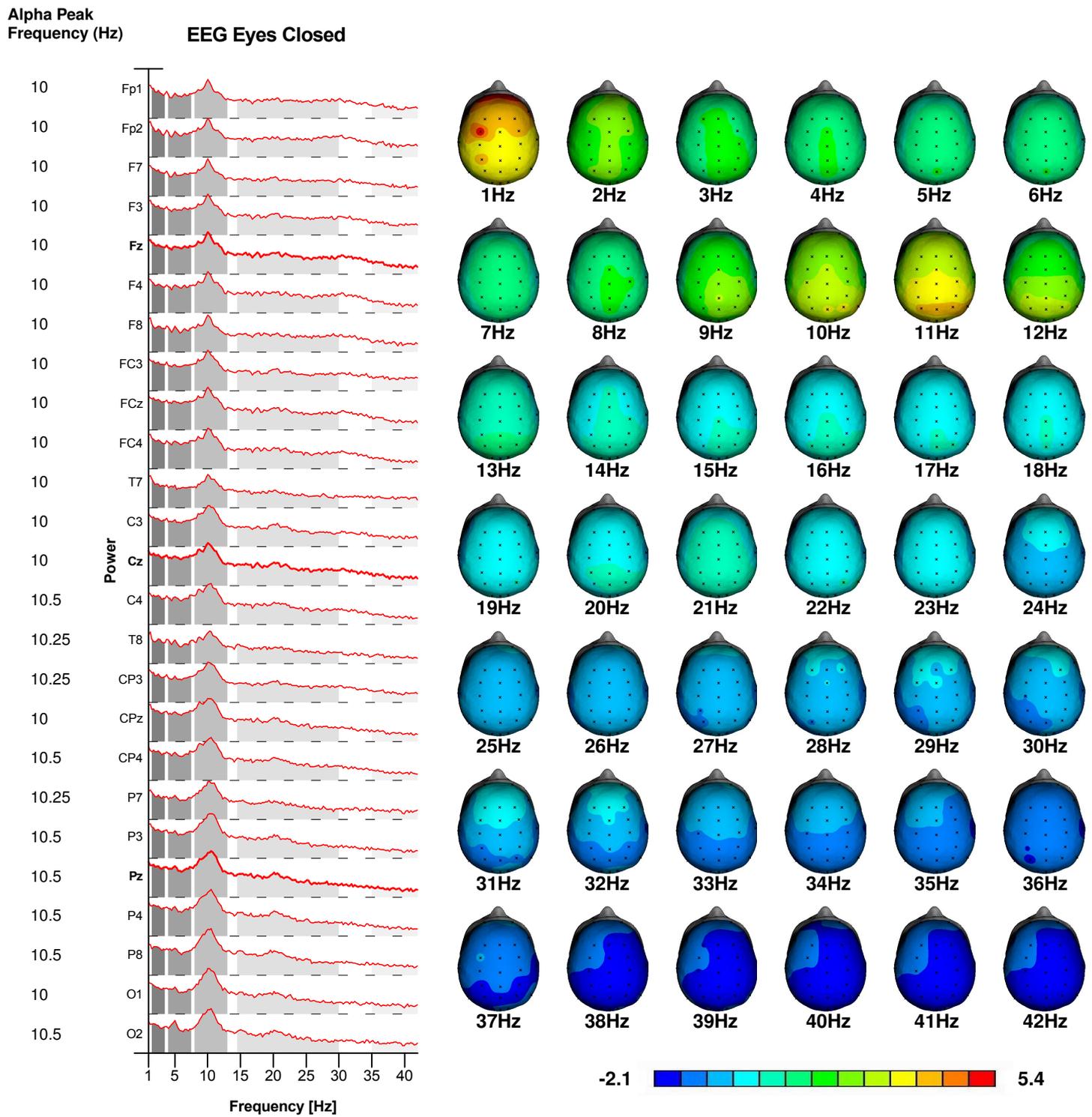


Clinician Comment:

Signature:

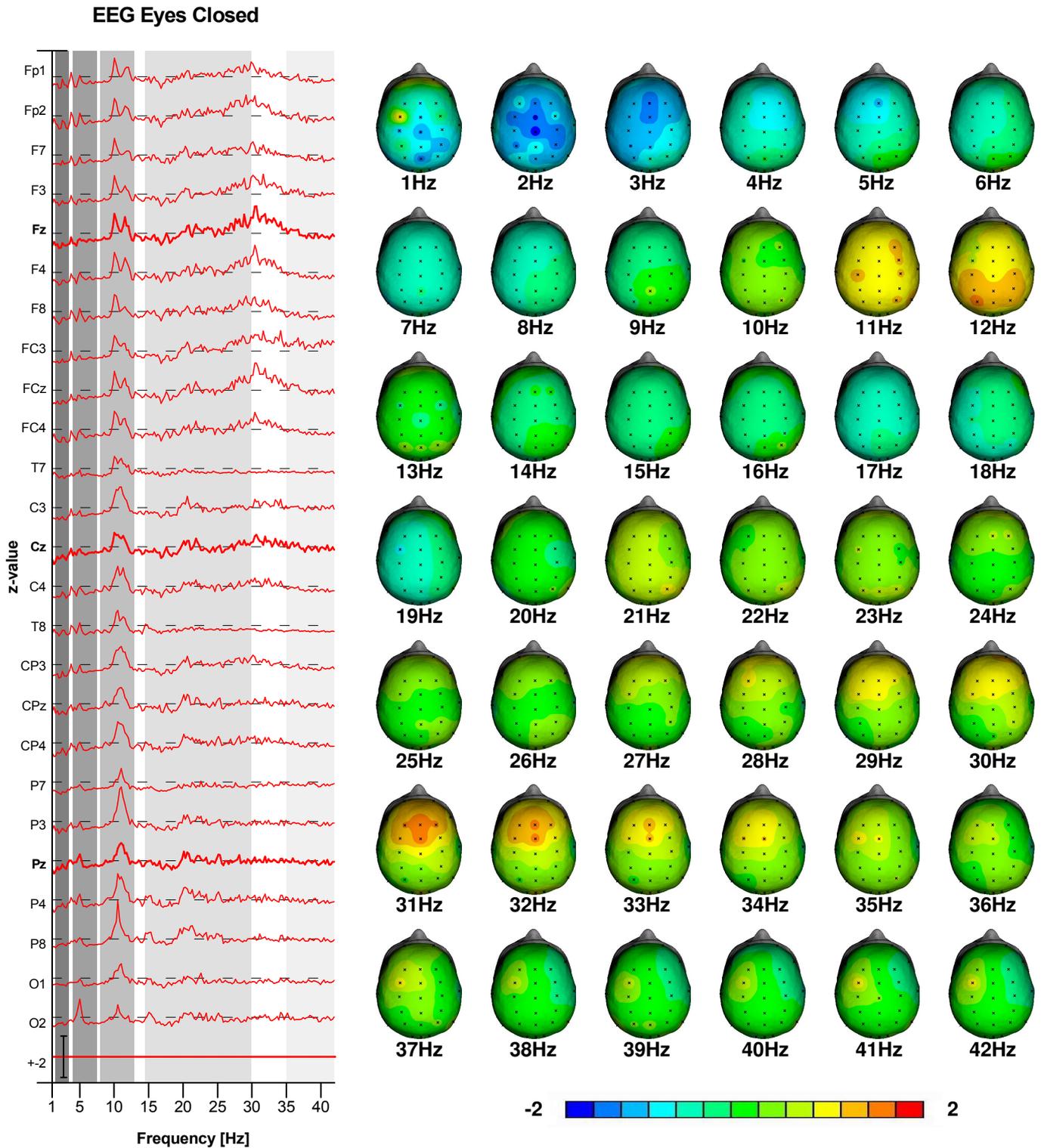
Date:

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



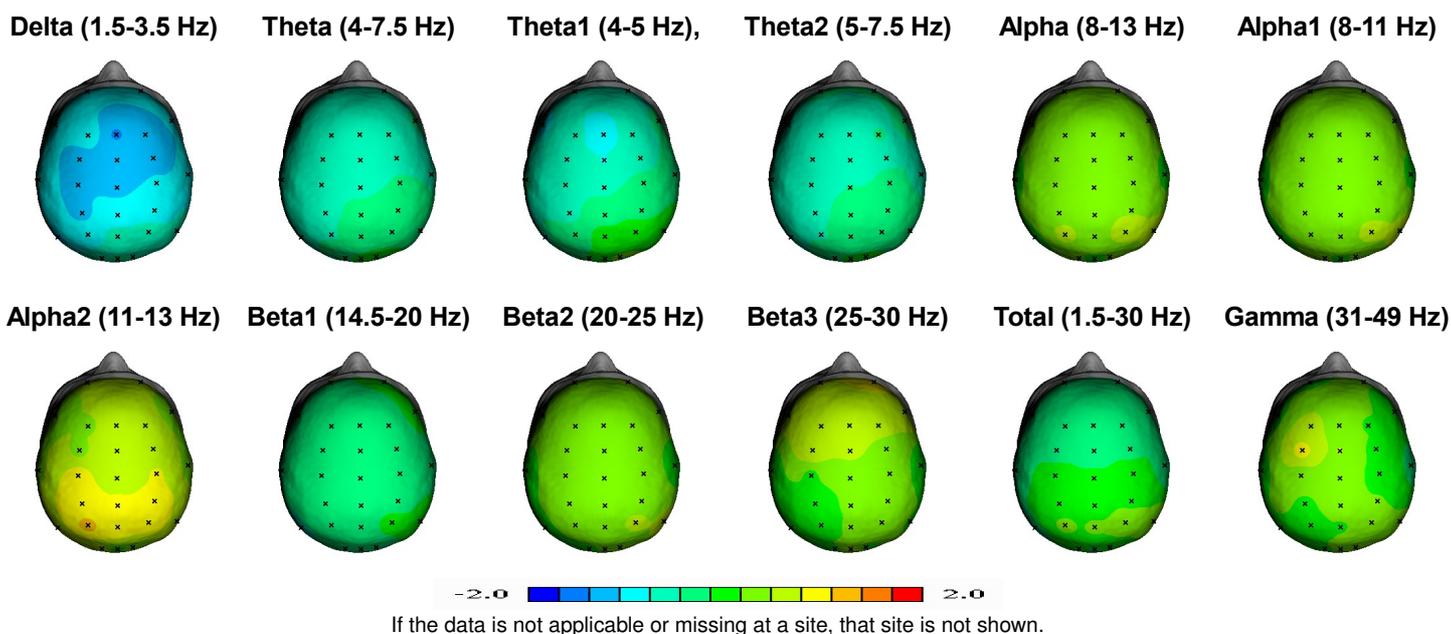
Plots of resting power spectra at each site and qEEG brain topography across 1 Hz bins illustrating the distribution of power across the scalp measured at each frequency in $\log \mu\text{V}^2$. A colored scale is shown at the bottom right of the topography figures, illustrating power magnitudes. Dark-blue 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 ~ 0 z-scores (mean), to red colors representing +2 z-scores.

1.4 Power Z Scores - Eyes Closed

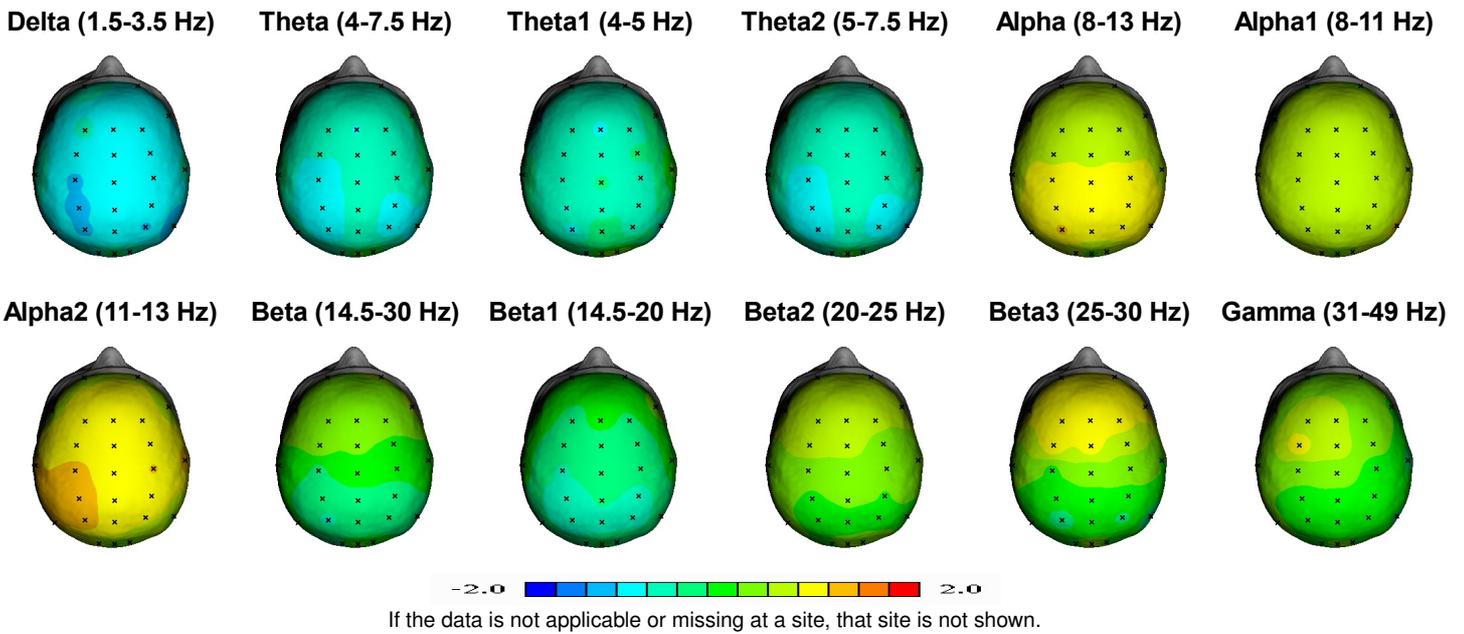


Site	Z Score											
	Delta	Theta	Theta1	Theta2	Alpha	Alpha1	Alpha2	Beta1	Beta2	Beta3	Total	Gamma
Fp1	-0.94	-0.59	-0.74	-0.5	0.25	0.28	0.59	-0.18	0.51	0.92	-0.24	0.13
Fp2	-1.08	-0.6	-0.72	-0.52	0.26	0.28	0.63	-0.08	0.56	1.12	-0.19	0.2
F7	-1.15	-0.72	-0.98	-0.59	0.2	0.24	0.33	-0.22	0.36	0.63	-0.41	0.06
F3	-1.07	-0.74	-0.87	-0.66	0.23	0.26	0.52	-0.4	0.32	0.86	-0.29	0.6
Fz	-1.67	-0.89	-1.16	-0.77	0.24	0.27	0.66	-0.38	0.43	0.78	-0.36	0.47
F4	-1.28	-0.6	-0.69	-0.53	0.31	0.32	0.65	-0.27	0.39	0.73	-0.21	0.16
F8	-1.26	-0.53	-0.45	-0.51	0.23	0.28	0.37	0.01	0.39	0.76	-0.3	-0.02
FC3	-1.4	-0.79	-0.84	-0.73	0.22	0.26	0.48	-0.42	0.4	0.85	-0.31	1.03
FCz	-1.54	-0.84	-0.91	-0.77	0.23	0.26	0.61	-0.5	0.3	0.63	-0.36	0.55
FC4	-1.38	-0.63	-0.65	-0.57	0.3	0.31	0.67	-0.38	0.23	0.4	-0.27	0.12
T7	-0.9	-0.57	-0.52	-0.54	0.1	0.08	0.46	-0.4	-0.07	-0.13	-0.53	0.01
C3	-1.34	-0.73	-0.68	-0.7	0.51	0.48	1.05	-0.4	0.34	0.14	-0.01	0.41
Cz	-1.37	-0.59	-0.59	-0.54	0.34	0.35	0.7	-0.44	0.29	0.19	-0.15	0.33
C4	-1.25	-0.52	-0.47	-0.49	0.49	0.46	0.93	-0.36	0.26	0.26	-0.01	0.06
T8	-1.22	-0.59	-0.29	-0.65	0.07	0.06	0.4	-0.4	-0.1	-0.16	-0.52	-0.41
CP3	-1.36	-0.68	-0.64	-0.66	0.52	0.45	1.16	-0.51	0.31	-0.03	0.05	0.14
CPz	-1.01	-0.38	-0.34	-0.35	0.49	0.46	0.97	-0.31	0.45	0.2	0.11	0.23
CP4	-1.18	-0.45	-0.26	-0.45	0.54	0.51	1.02	-0.29	0.4	0.38	0.15	0.19
P7	-1.35	-0.75	-0.63	-0.76	-0.02	-0.06	0.57	-0.67	-0.09	-0.22	-0.43	0.16
P3	-1.01	-0.57	-0.46	-0.57	0.62	0.52	1.38	-0.44	0.36	-0.01	0.25	0.08
Pz	-0.77	-0.21	0.12	-0.29	0.49	0.44	1.11	-0.32	0.42	0.2	0.22	0.17
P4	-0.67	-0.24	0.08	-0.33	0.7	0.66	1.1	-0.05	0.64	0.31	0.43	0.24
P8	-0.67	-0.27	0.1	-0.38	0.68	0.7	0.84	0.17	0.76	0.16	0.43	0.23
O1	-0.85	-0.42	-0.2	-0.48	0.4	0.41	0.76	-0.46	0.00	-0.14	0.09	0.05
O2	-0.67	0.1	0.49	-0.06	0.26	0.32	0.46	-0.25	0.23	0.04	0.04	0.26

- = 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



Site	Z Score											
	Delta	Theta	Theta1	Theta2	Alpha	Alpha1	Alpha2	Beta	Beta1	Beta2	Beta3	Gamma
Fp1	-0.73	-0.58	-0.59	-0.49	0.56	0.52	0.84	0.53	-0.08	0.69	1.13	0.16
Fp2	-0.95	-0.66	-0.74	-0.56	0.55	0.51	0.89	0.58	-0.02	0.66	1.24	0.28
F7	-1.02	-0.65	-0.96	-0.5	0.67	0.64	0.8	0.55	0.18	0.72	0.99	0.27
F3	-0.86	-0.79	-0.77	-0.69	0.74	0.67	0.93	0.42	-0.21	0.71	1.13	0.74
Fz	-1.05	-0.92	-0.97	-0.79	0.85	0.75	1.08	0.36	-0.12	0.78	1.08	0.66
F4	-1.06	-0.71	-0.64	-0.61	0.78	0.69	1.07	0.34	-0.19	0.59	1.18	0.33
F8	-1.23	-0.47	-0.3	-0.44	0.67	0.65	0.75	0.61	0.33	0.69	1.07	0.16
FC3	-1.03	-0.89	-0.72	-0.83	0.8	0.71	0.97	0.37	-0.22	0.79	1.15	1.14
FCz	-1.02	-0.87	-0.63	-0.81	0.87	0.75	1.03	0.25	-0.27	0.67	1.05	0.77
FC4	-1	-0.67	-0.51	-0.61	0.84	0.74	0.98	0.16	-0.25	0.49	0.68	0.28
T7	-0.54	-0.27	-0.17	-0.26	0.71	0.55	1.31	0.08	0.00	0.34	0.17	0.21
C3	-1.31	-1.23	-0.9	-1.14	1.21	0.91	1.41	-0.23	-0.57	0.3	0.12	0.31
Cz	-1.04	-0.76	-0.52	-0.71	0.94	0.8	1.06	-0.06	-0.38	0.39	0.32	0.38
C4	-1.22	-0.87	-0.64	-0.82	1.1	0.87	1.29	-0.15	-0.49	0.25	0.25	0.03
T8	-0.82	-0.25	0.22	-0.36	0.82	0.65	1.34	0.1	0.07	0.32	0.17	-0.23
CP3	-1.37	-1.27	-0.92	-1.19	1.26	0.81	1.56	-0.43	-0.72	0.15	-0.14	0.02
CPz	-1.06	-0.79	-0.59	-0.75	1.02	0.78	1.13	-0.27	-0.53	0.2	0.03	0.06
CP4	-1.25	-0.98	-0.61	-0.99	1.13	0.82	1.21	-0.28	-0.6	0.18	0.14	-0.01
P7	-0.96	-0.61	-0.27	-0.66	0.85	0.48	1.37	-0.06	-0.31	0.33	0.18	0.39
P3	-1.35	-1.27	-0.97	-1.28	1.31	0.72	1.48	-0.62	-0.88	-0.03	-0.34	-0.18
Pz	-0.98	-0.68	-0.28	-0.74	0.93	0.58	1.13	-0.43	-0.65	0.05	-0.11	-0.09
P4	-1.29	-1.07	-0.64	-1.12	1.17	0.84	0.91	-0.45	-0.7	0.09	-0.24	-0.19
P8	-1.61	-1.22	-0.65	-1.38	1.21	1.02	0.44	-0.34	-0.44	0.12	-0.38	-0.21
O1	-1	-0.83	-0.44	-0.93	0.98	0.75	0.75	-0.47	-0.59	-0.09	-0.26	-0.08
O2	-0.72	-0.06	0.45	-0.23	0.59	0.58	0.37	-0.16	-0.31	0.25	-0.01	0.16

- = 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	1.36	5.75
Fp2	1.29	5.49
F7	1.32	5.27
F3	1.7	6.81
Fz	1.88	7.57
F4	1.71	6.69
F8	1.34	4.99
FC3	1.64	7.19
FCz	2.07	8.11
FC4	1.74	7.07
T7	1.3	4.48
C3	1.54	9.66
Cz	2.04	8.94
C4	1.66	8.88
T8	1.23	4.34
CP3	1.48	11.64
CPz	1.86	11.08
CP4	1.56	10.57
P7	1.17	8.76
P3	1.4	14.63
Pz	1.77	13.96
P4	1.42	13.49
P8	0.92	12.59
O1	1.19	15.29
O2	1.64	12.23

Site	Z Score Ratio	
	Theta/Beta1	Alpha/Beta1
Fp1	-0.36	0.36
Fp2	-0.41	0.34
F7	-0.6	0.37
F3	-0.39	0.55
Fz	-0.49	0.57
F4	-0.32	0.55
F8	-0.47	0.29
FC3	-0.38	0.6
FCz	-0.34	0.66
FC4	-0.27	0.6
T7	-0.18	0.43
C3	-0.33	0.95
Cz	-0.17	0.74
C4	-0.17	0.86
T8	-0.19	0.44
CP3	-0.28	1.04
CPz	-0.11	0.85
CP4	-0.2	0.91
P7	-0.21	0.62
P3	-0.21	1.12
Pz	0.02	0.84
P4	-0.23	0.96
P8	-0.47	0.75
O1	-0.19	0.82
O2	0.28	0.5

 = 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 Scores - Eyes Closed

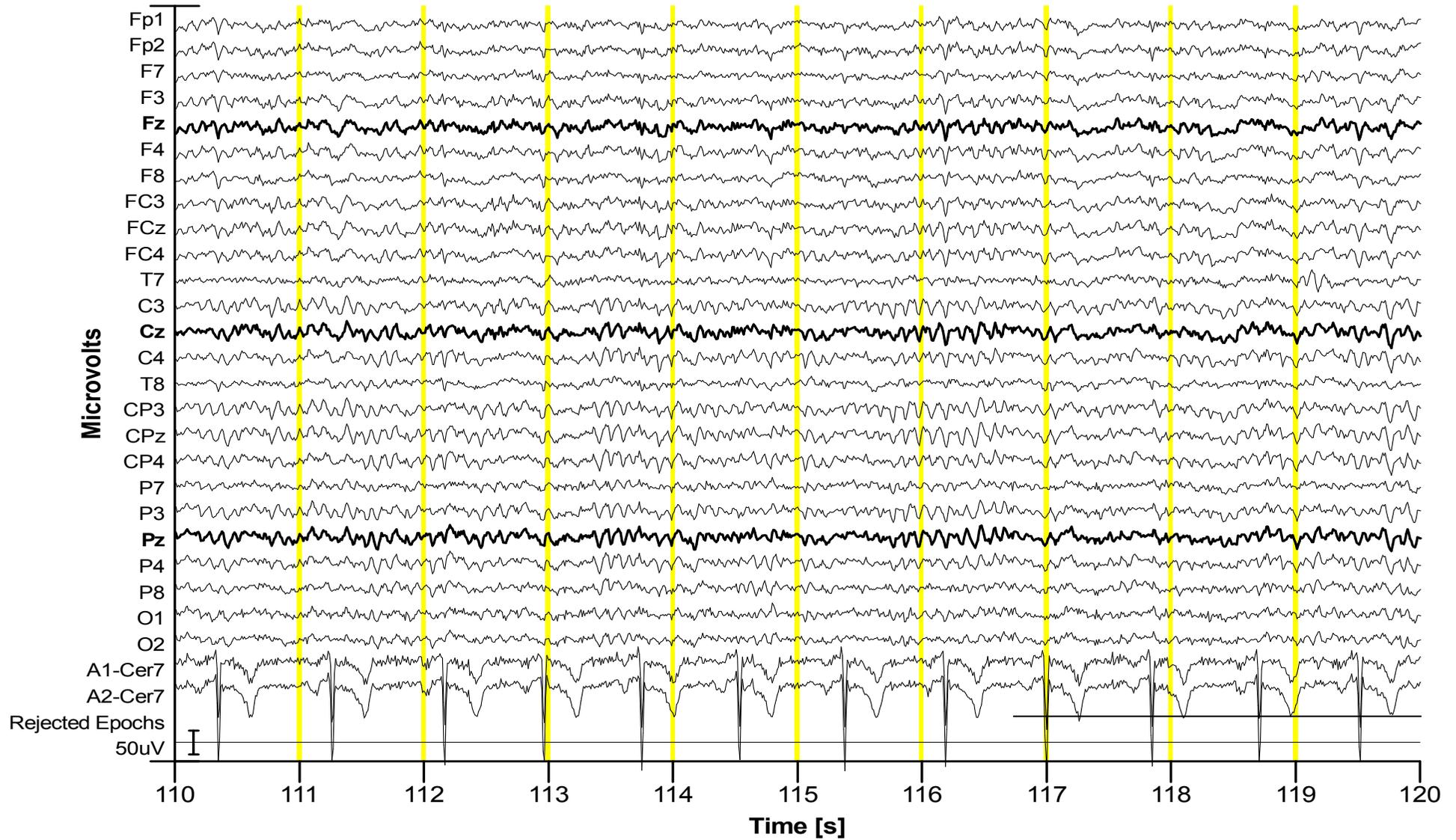
Site	Score									
	Delta	Theta	Alpha	Alpha1	Alpha2	Beta	Beta1	Beta2	Beta3	Gamma
Fp1-Fp2	0.03	0.02	0.01	0.01	0.02	0.07	0.05	0.03	0.13	0.13
F7-F8	0.00	0.02	0.00	0.01	-0.06	-0.1	-0.03	-0.13	-0.14	-0.25
F3-F4	-0.09	0.07	0.02	0.02	0.02	-0.01	0.04	-0.01	-0.09	-0.23
FC3-FC4	-0.06	0.09	-0.01	-0.01	-0.03	-0.15	-0.05	-0.15	-0.31	-0.59
T7-T8	-0.15	-0.15	-0.07	-0.08	-0.06	-0.2	-0.15	-0.22	-0.28	-0.46
C3-C4	0.00	0.07	-0.02	-0.02	-0.02	-0.03	-0.03	-0.06	0.01	-0.21
CP3-CP4	0.13	0.04	0.04	0.07	-0.05	0.01	0.02	-0.02	0.08	0.04
P7-P8	0.2	0.13	0.5	0.53	0.24	0.24	0.3	0.24	0.04	0.12
P3-P4	0.14	0.13	0.18	0.23	-0.05	0.15	0.18	0.13	0.08	0.12
O1-O2	-0.01	0.11	-0.1	-0.09	-0.18	0	0.00	0.01	-0.03	0.13

 = 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. EEGs Eyes Open

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

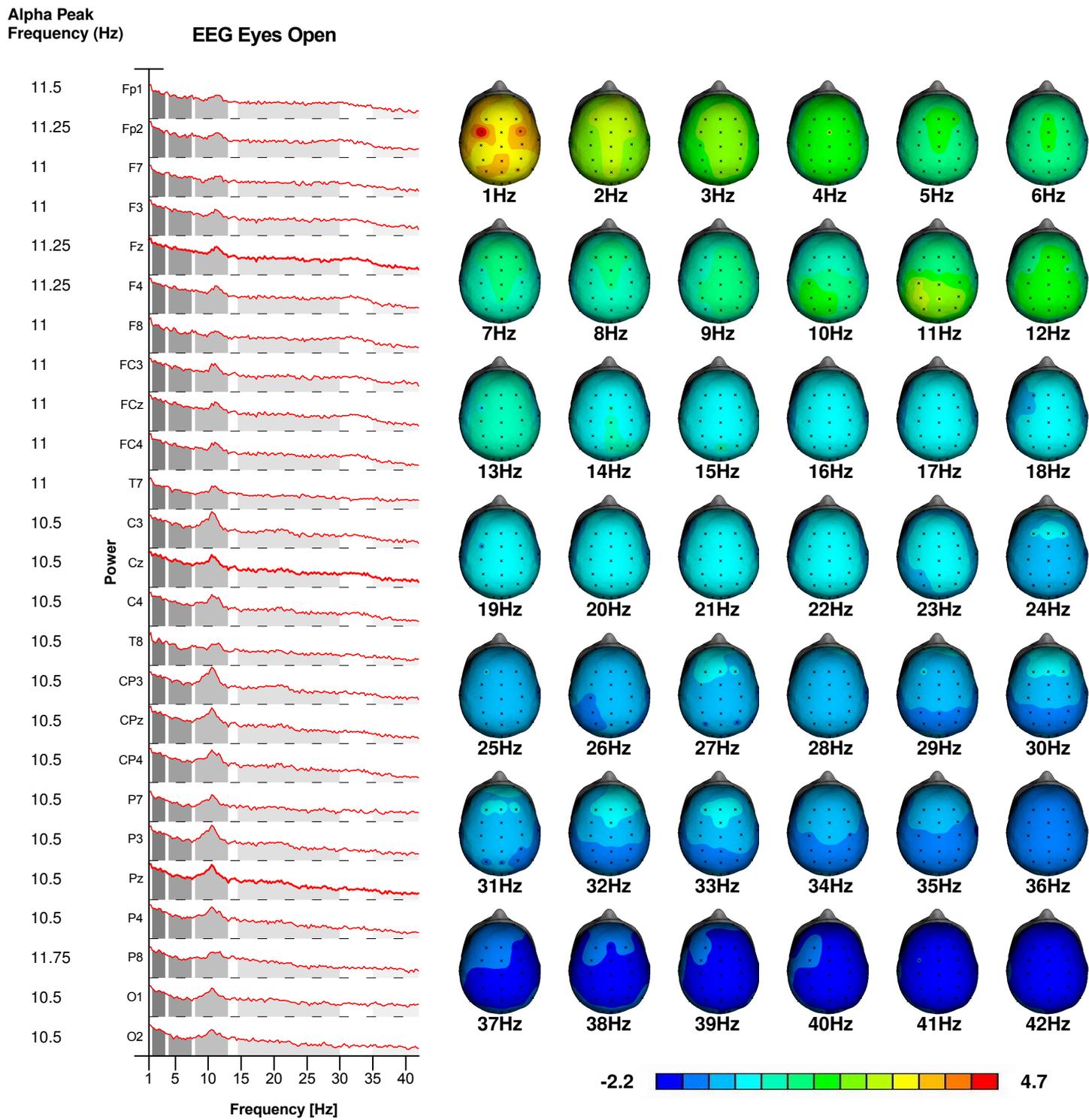


Clinician Comment:

Signature:

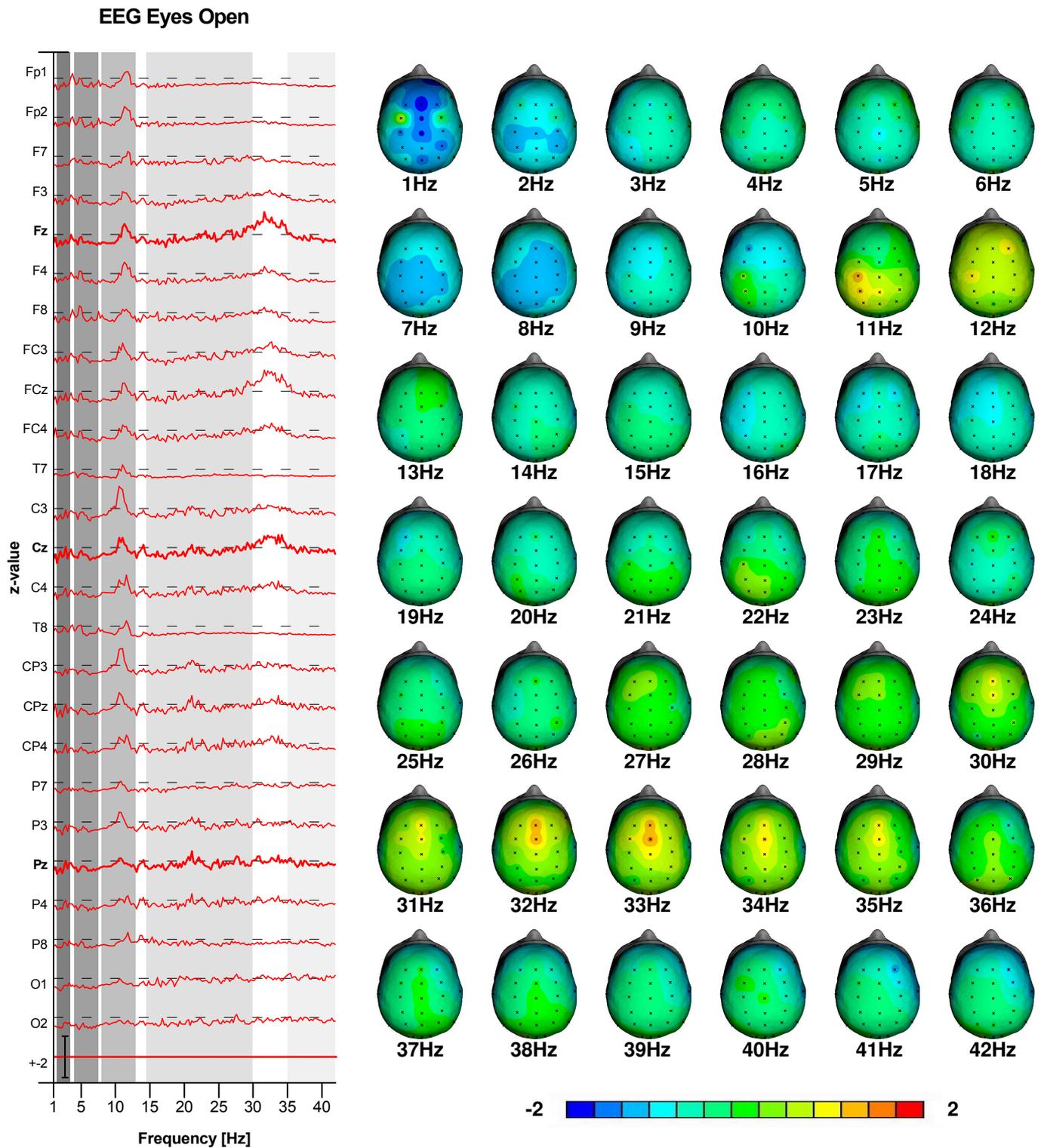
Date:

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



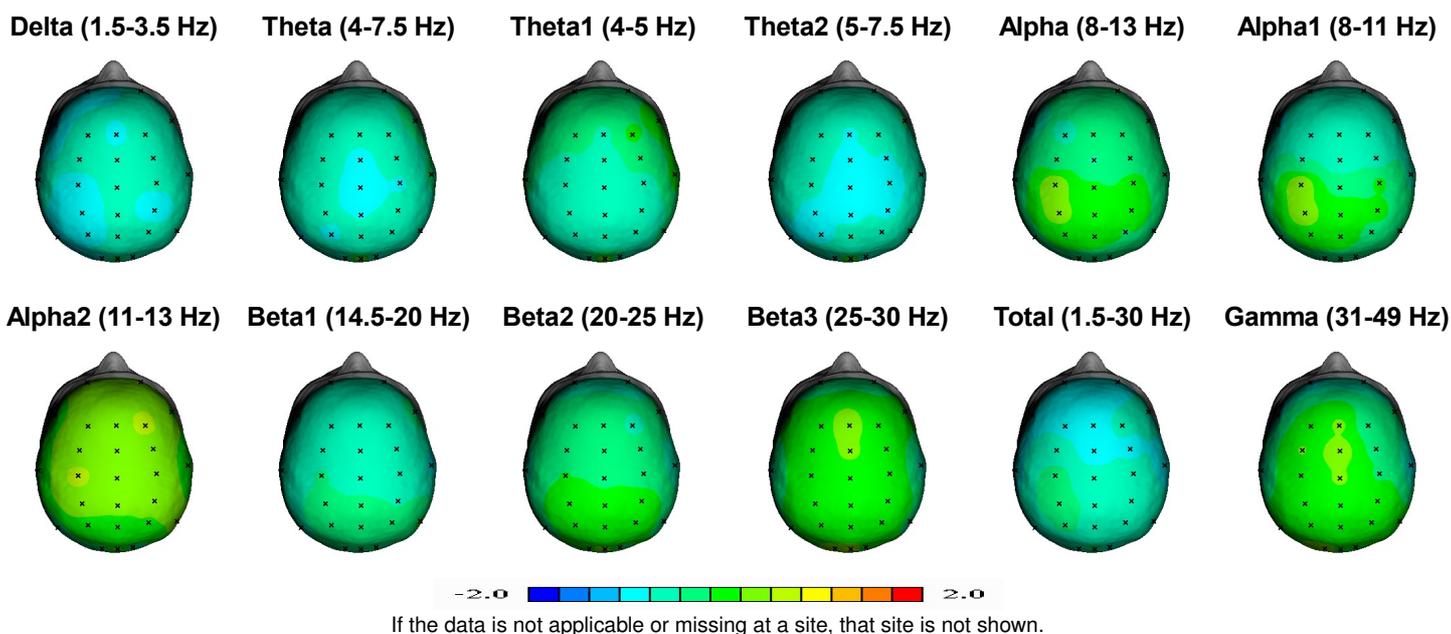
Plots of resting power spectra at each site and qEEG brain topography across 1 Hz bins illustrating the distribution of power across the scalp measured at each frequency in $\log \mu\text{V}^2$. A colored scale is shown at the bottom right of the topography figures, illustrating power magnitudes. Dark-blue 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 ~ 0 z-scores (mean), to red colors representing +2 z-scores.

2.4 Power Z Scores - Eyes Open

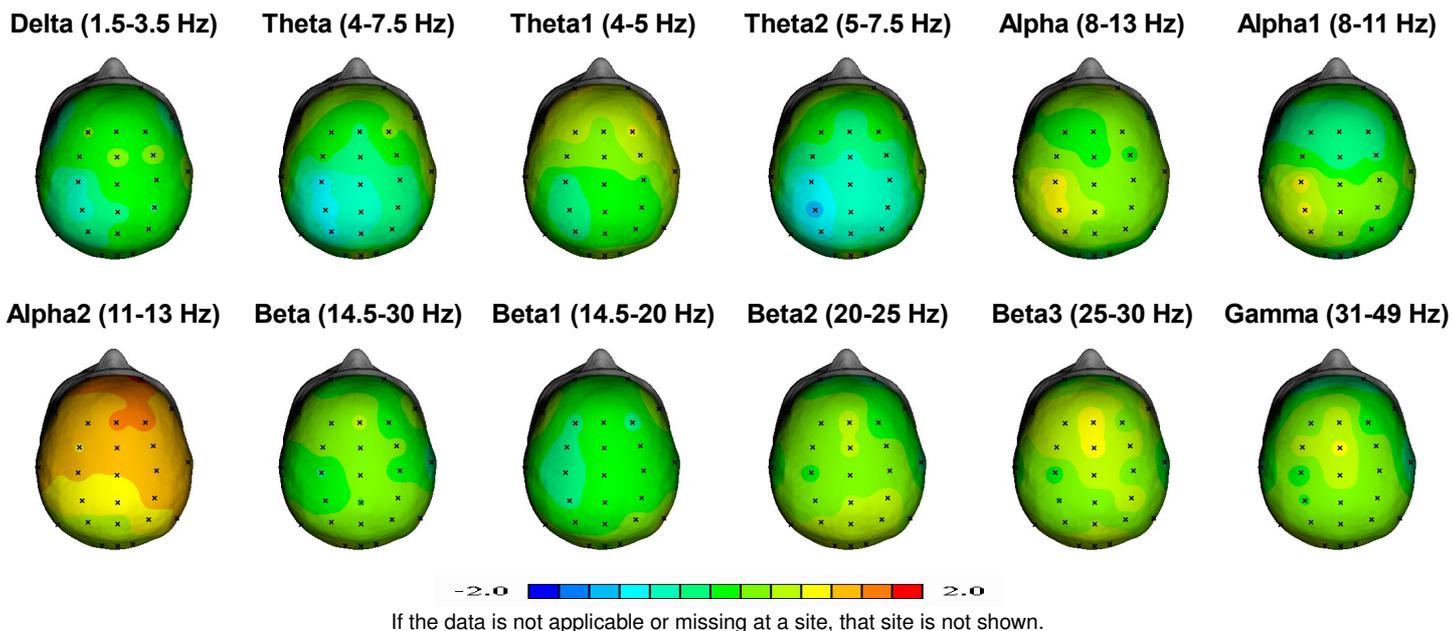


Site	Z Score											
	Delta	Theta	Theta1	Theta2	Alpha	Alpha1	Alpha2	Beta1	Beta2	Beta3	Total	Gamma
Fp1	-1.14	-0.54	-0.2	-0.63	-0.48	-0.73	0.28	-0.85	-0.78	-0.52	-1.22	-1.05
Fp2	-0.86	-0.66	-0.35	-0.8	-0.26	-0.57	0.56	-0.72	-0.77	-0.47	-1.04	-0.93
F7	-1.34	-0.56	-0.3	-0.65	-0.7	-1.01	0.06	-0.61	-0.48	-0.1	-1.09	-0.68
F3	-0.68	-0.63	-0.38	-0.68	-0.62	-0.91	0.23	-0.87	-0.42	0.13	-0.93	-0.09
Fz	-1	-0.88	-0.58	-0.93	-0.49	-0.89	0.53	-0.64	-0.18	0.38	-0.99	0.23
F4	-0.66	-0.57	-0.1	-0.72	-0.36	-0.75	0.65	-0.78	-0.61	-0.09	-0.87	-0.43
F8	-0.88	-0.29	0.13	-0.49	-0.43	-0.61	0.17	-0.38	-0.43	0.03	-0.77	-0.54
FC3	-0.84	-0.77	-0.56	-0.81	-0.39	-0.57	0.21	-0.85	-0.37	0.08	-0.88	0.2
FCz	-0.82	-1	-0.73	-1.04	-0.56	-0.9	0.4	-0.72	-0.23	0.24	-1.08	0.36
FC4	-0.69	-0.81	-0.41	-0.92	-0.5	-0.68	0.29	-0.76	-0.52	-0.04	-0.96	-0.25
T7	-0.75	-0.6	-0.5	-0.61	-0.57	-0.72	-0.06	-0.91	-0.66	-0.6	-1.06	-0.68
C3	-0.98	-0.85	-0.6	-0.89	0.48	0.5	0.69	-0.52	-0.18	-0.11	-0.34	-0.08
Cz	-0.87	-1.05	-0.86	-1.05	-0.17	-0.25	0.35	-0.68	-0.24	0.01	-0.84	0.21
C4	-0.9	-0.92	-0.61	-0.98	-0.06	-0.14	0.42	-0.68	-0.3	-0.11	-0.8	-0.2
T8	-0.71	-0.45	-0.02	-0.68	-0.52	-0.61	-0.11	-0.98	-0.84	-0.79	-1.12	-1.02
CP3	-1.04	-0.9	-0.72	-0.93	0.35	0.39	0.38	-0.48	-0.01	-0.09	-0.33	-0.06
CPz	-0.87	-0.91	-0.73	-0.92	0.08	0.1	0.28	-0.49	0.00	-0.02	-0.55	0.05
CP4	-1.07	-0.9	-0.71	-0.93	-0.06	-0.13	0.39	-0.56	-0.05	0.12	-0.63	-0.01
P7	-1.04	-0.98	-0.82	-1.02	-0.55	-0.49	-0.49	-0.68	-0.39	-0.22	-0.99	0.02
P3	-0.99	-0.94	-0.74	-0.96	0.08	0.14	0.09	-0.45	-0.03	-0.11	-0.52	-0.02
Pz	-0.9	-0.91	-0.83	-0.89	-0.09	-0.05	-0.02	-0.42	0.07	-0.01	-0.58	0.04
P4	-0.77	-0.86	-0.73	-0.86	-0.19	-0.22	0.16	-0.37	-0.04	0	-0.62	0.02
P8	-0.72	-0.62	-0.49	-0.63	-0.33	-0.51	0.24	-0.14	-0.28	-0.32	-0.66	-0.12
O1	-1.16	-1.01	-0.84	-1.06	-0.43	-0.36	-0.38	-0.24	0.11	0.19	-0.81	0.46
O2	-0.96	-1.06	-0.97	-1.06	-0.57	-0.54	-0.4	-0.58	-0.31	-0.2	-0.96	0.07

- = 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



Site	Z Score											
	Delta	Theta	Theta1	Theta2	Alpha	Alpha1	Alpha2	Beta	Beta1	Beta2	Beta3	Gamma
Fp1	-0.03	0.66	1.07	0.49	0.57	0.12	1.83	-0.2	0.09	-0.25	0.03	-0.66
Fp2	0.02	0.42	0.83	0.26	0.69	0.17	2.06	-0.21	0.13	-0.32	0.04	-0.6
F7	-0.69	0.73	1.11	0.54	0.1	-0.42	1.59	0.55	0.65	0.39	0.73	-0.1
F3	0.2	0.19	0.7	0.03	-0.06	-0.55	1.35	0.19	-0.23	0.25	0.85	0.41
Fz	-0.03	-0.23	0.46	-0.4	0.1	-0.54	1.68	0.62	0.11	0.72	1.14	0.8
F4	0.07	0.25	0.95	-0.05	0.3	-0.29	1.74	-0.04	-0.26	-0.11	0.46	-0.02
F8	-0.47	0.66	1.2	0.28	0.17	-0.12	1.31	0.36	0.52	0.16	0.61	-0.07
FC3	0.11	-0.11	0.44	-0.25	0.19	-0.15	1.26	0.27	-0.23	0.36	0.75	0.68
FCz	0.26	-0.41	0.25	-0.6	0.04	-0.5	1.57	0.52	0.02	0.61	1.06	1.01
FC4	0.29	-0.04	0.66	-0.31	0.13	-0.23	1.29	0.21	-0.03	0.2	0.61	0.23
T7	0.16	0.51	0.63	0.46	0.5	0.14	1.61	-0.2	-0.09	-0.06	0.00	-0.23
C3	-0.68	-1.05	-0.38	-1.21	1.18	1.06	1.33	-0.21	-0.45	0.12	0.08	0.06
Cz	0.1	-0.59	-0.04	-0.72	0.43	0.22	1.27	0.24	-0.09	0.42	0.66	0.79
C4	-0.1	-0.46	0.15	-0.73	0.53	0.32	1.47	0.11	-0.15	0.35	0.44	0.26
T8	0.32	0.78	1.09	0.56	0.58	0.3	1.5	-0.4	-0.18	-0.28	-0.24	-0.62
CP3	-0.77	-1.12	-0.5	-1.43	1.06	0.99	1.01	-0.05	-0.3	0.28	0.17	0.16
CPz	-0.23	-0.78	-0.14	-0.83	0.62	0.56	1.04	0.18	-0.05	0.56	0.43	0.38
CP4	-0.19	-0.5	-0.02	-0.67	0.43	0.25	1.45	0.29	-0.06	0.62	0.64	0.42
P7	-0.17	-0.16	0.2	-0.26	0.25	0.18	0.69	0.5	0.33	0.65	0.61	0.77
P3	-0.47	-0.98	-0.29	-1.11	0.7	0.67	0.84	0.27	0.07	0.58	0.43	0.39
Pz	-0.11	-0.57	-0.17	-0.61	0.34	0.35	0.72	0.39	0.18	0.65	0.55	0.5
P4	-0.04	-0.49	-0.04	-0.57	0.24	0.1	1.15	0.43	0.28	0.69	0.52	0.44
P8	-0.11	0.08	0.3	-0.01	0.09	-0.26	1.35	0.56	0.8	0.42	0.27	0.35
O1	-0.23	-0.32	0.05	-0.52	-0.03	0.08	0.41	1.05	0.89	1.04	0.91	0.98
O2	0.12	-0.08	0.14	-0.16	-0.11	-0.11	0.6	0.62	0.58	0.79	0.65	0.63

- = 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	1.63	1.86
Fp2	1.61	2.01
F7	1.59	1.54
F3	2.41	2.22
Fz	2.55	2.63
F4	2.25	2.51
F8	1.62	1.69
FC3	2.33	2.79
FCz	2.61	2.78
FC4	2.11	2.58
T7	1.28	1.89
C3	1.78	5.48
Cz	2.29	3.51
C4	1.77	3.71
T8	1.29	1.86
CP3	1.5	5.66
CPz	1.78	4.38
CP4	1.63	4
P7	1.08	2.42
P3	1.31	4.4
Pz	1.43	3.91
P4	1.36	3.37
P8	0.9	1.97
O1	0.84	2.17
O2	1.01	2.31

Site	Z Score Ratio	
	Theta/Beta1	Alpha/Beta1
Fp1	0.38	0.38
Fp2	0.2	0.45
F7	0	-0.28
F3	0.27	0.1
Fz	-0.18	0.02
F4	0.3	0.36
F8	0.03	-0.1
FC3	0.14	0.3
FCz	-0.19	0.05
FC4	0.03	0.15
T7	0.37	0.42
C3	-0.23	0.98
Cz	-0.21	0.4
C4	-0.13	0.45
T8	0.57	0.5
CP3	-0.44	0.81
CPz	-0.35	0.46
CP4	-0.23	0.38
P7	-0.39	-0.03
P3	-0.53	0.42
Pz	-0.48	0.19
P4	-0.44	0.08
P8	-0.58	-0.33
O1	-0.88	-0.36
O2	-0.5	-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 Scores - Eyes Open

Site	Score									
	Delta	Theta	Alpha	Alpha1	Alpha2	Beta	Beta1	Beta2	Beta3	Gamma
Fp1-Fp2	0.25	0.1	0.04	0.02	0.09	0.03	0.04	0.01	0.04	0.09
F7-F8	0.11	0.05	0.00	0.02	-0.04	-0.07	-0.07	-0.07	-0.08	-0.07
F3-F4	0.01	0.03	0.1	0.07	0.17	-0.06	-0.02	-0.06	-0.11	-0.15
FC3-FC4	0.03	0.04	0.12	0.17	0.04	-0.11	-0.04	-0.1	-0.21	-0.34
T7-T8	-0.07	-0.06	-0.05	-0.1	0.00	-0.18	-0.15	-0.24	-0.18	-0.28
C3-C4	0.02	-0.07	-0.26	-0.38	-0.03	-0.09	-0.15	-0.07	-0.02	-0.06
CP3-CP4	0.06	-0.09	-0.27	-0.43	0.06	-0.11	-0.16	-0.11	0.01	-0.03
P7-P8	0.12	0.04	0.14	0.00	0.27	0.06	0.17	-0.07	-0.05	0.00
P3-P4	0.1	-0.02	-0.14	-0.3	0.16	-0.01	0.01	-0.06	-0.01	0.03
O1-O2	-0.02	-0.08	-0.11	-0.18	-0.03	-0.16	-0.13	-0.19	-0.17	-0.26

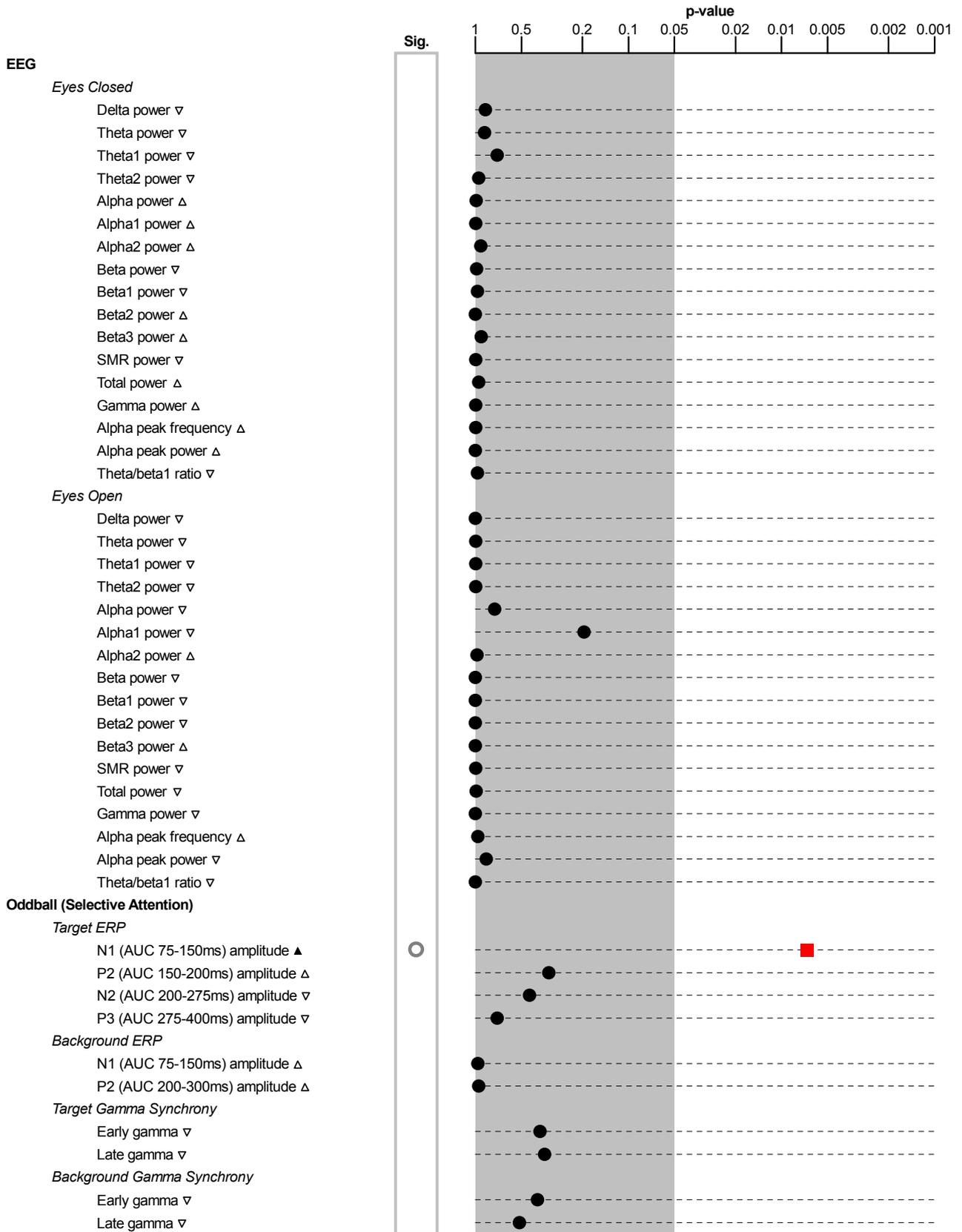
= statistically significant (-)
 = statistically significant (+)
 — = data not applicable or missing

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.

3. Electrical Brain Function (EEG& ERP)

3.1 Statistical summary of the **Electrical Brain Function** scores

Client SAMPLE compared to normal controls

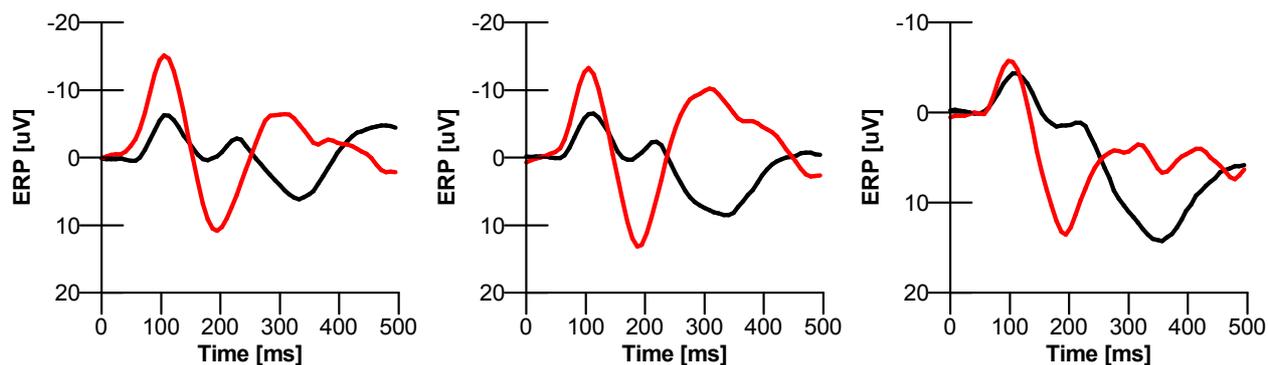


The circles in the Sig. column indicate statistically significant differences compared with the normal controls (matched for age and gender). Triangles show the direction of change. The statistical analyses undertaken include: i) Solid circles reflect Mahalanobis differences for sites F3, Fz, F4, C3, 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.

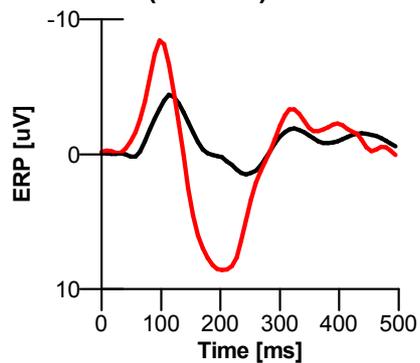
The direction and spatial distribution of selected key statistically significant finding is shown in the graphs on page 16.

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

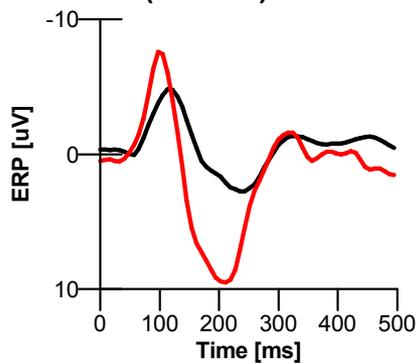
ERP Oddball Target (Site=Fz) ERP Oddball Target (Site=Cz) ERP Oddball Target (Site=Pz)



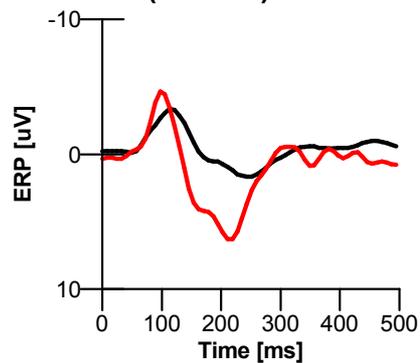
ERP Oddball Background (Site=Fz)



ERP Oddball Background (Site=Cz)



ERP Oddball Background (Site=Pz)



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

3.3 Details of Autonomic Heart Rate scores

Measure	Client	Int. Brain Database		Z Score	Percentile
		Average	Std. Dev		
Eyes Closed					
Heart rate	75.6bpm	71.3bpm	8.6bpm	0.5	69 th
Heart rate variability (RMSSD)	35ms	38ms	18ms	-0.15	44 th
Heart rate very low frequency power	513 $\frac{mv}{Hz}$	368 $\frac{mv}{Hz}$	321 $\frac{mv}{Hz}$	0.45	67 th
Heart rate low frequency power	297 $\frac{mv}{Hz}$	783 $\frac{mv}{Hz}$	948 $\frac{mv}{Hz}$	-0.51	30 th
Heart rate high frequency power	576 $\frac{mv}{Hz}$	779 $\frac{mv}{Hz}$	808 $\frac{mv}{Hz}$	-0.25	40 th
Eyes Open					
Heart rate	72.8bpm	70.7bpm	8.8bpm	0.23	59 th
Heart rate variability (RMSSD)	49ms	40ms	17ms	0.5	69 th
Heart rate very low frequency power	225 $\frac{mv}{Hz}$	473 $\frac{mv}{Hz}$	451 $\frac{mv}{Hz}$	-0.55	29 th
Heart rate low frequency power	194 $\frac{mv}{Hz}$	946 $\frac{mv}{Hz}$	1194 $\frac{mv}{Hz}$	-0.63	26 th
Heart rate high frequency power	823 $\frac{mv}{Hz}$	886 $\frac{mv}{Hz}$	858 $\frac{mv}{Hz}$	-0.07	47 th
Oddball (Selective Attention)					
Heart rate	75.1bpm	73.5bpm	8.8bpm	0.18	57 th
Heart rate variability (RMSSD)	43ms	36ms	16ms	0.39	65 th
Heart rate very low frequency power	304 $\frac{mv}{Hz}$	630 $\frac{mv}{Hz}$	505 $\frac{mv}{Hz}$	-0.64	26 th
Heart rate low frequency power	545 $\frac{mv}{Hz}$	714 $\frac{mv}{Hz}$	522 $\frac{mv}{Hz}$	-0.33	37 th
Heart rate high frequency power	481 $\frac{mv}{Hz}$	509 $\frac{mv}{Hz}$	436 $\frac{mv}{Hz}$	-0.07	47 th

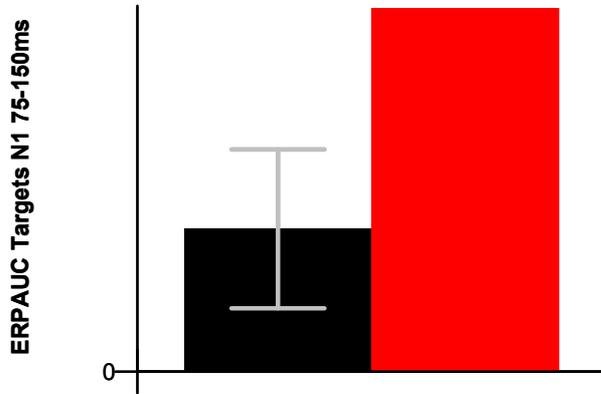
Raw scores of the Client findings (● = statistically significant; Std. Dev = standard deviation; Int = international).

Nominal classification bands	Percentile boundary
Very high	≤ 100 th
High	< 98 th
High average	< 91 st
Average	< 75 th
Low average	< 25 th
Borderline	< 9 th
Extremely Low	< 2 nd

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

(Client SAMPLE vs. Controls)

Oddball Target N1 Amplitude (Site=Fz)

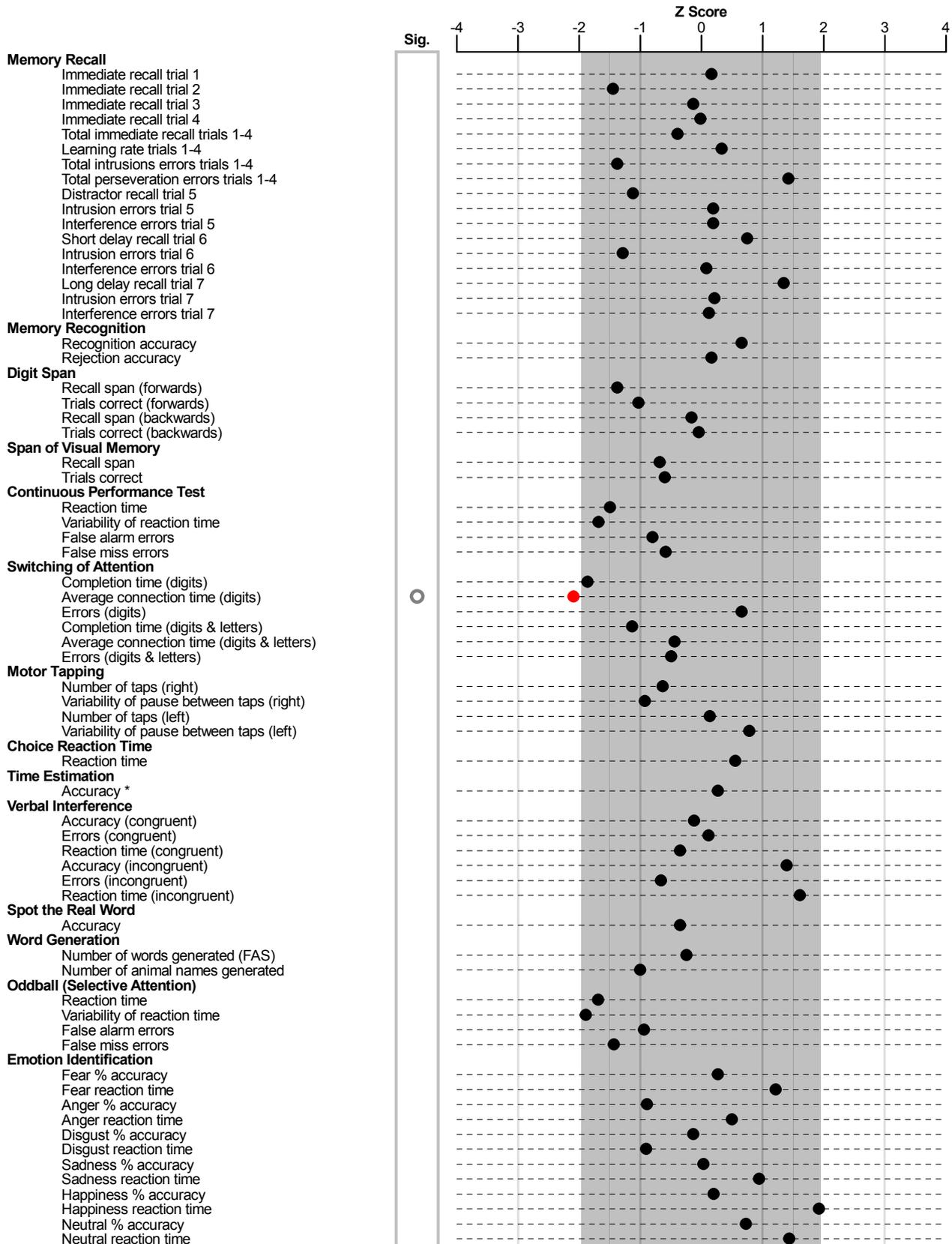


The analog figures show the electrical brain function data of the client (red) compared to their age and gender matched controls (black). The head maps reflect the spatial distribution of the statistically significant findings as indicated by the yellow bars in the single site waveforms (increases are 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.

4. Neuropsychological Test Battery

4.1 Statistical summary of the **Neuropsychological Test Battery** scores

Client SAMPLE compared to normal controls



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		Z Score	Percentile
		Average	Std. Dev		
Memory Recall					
Immediate recall trial 1	7	6.8	1.4	0.17	57 th
Immediate recall trial 2	7	9.1	1.5	-1.44	7 th
Immediate recall trial 3	10	10.2	1.5	-0.13	45 th
Immediate recall trial 4	11	11	1.2	-0.02	49 th
Total immediate recall trials 1-4	35	36.8	4.5	-0.39	35 th
Learning rate trials 1-4	1.5	1.33	0.53	0.33	63 rd
Total intrusions errors trials 1-4	4	0.9	2.3	-1.38	8 th
Total perseveration errors trials 1-4	0	1.7	1.2	1.42	92 nd
Distractor recall trial 5	4	5.9	1.7	-1.12	13 th
Intrusion errors trial 5	0	0.14	0.71	0.19	58 th
Interference errors trial 5	0	0.14	0.75	0.19	58 th
Short delay recall trial 6	11	9.5	2	0.75	77 th
Intrusion errors trial 6	1	0.16	0.65	-1.28	10 th
Interference errors trial 6	0	0.08	0.99	0.08	53 rd
Long delay recall trial 7	12	9.2	2	1.35	91 st
Intrusion errors trial 7	0	0.17	0.78	0.22	59 th
Interference errors trial 7	0	0.08	0.69	0.12	55 th
Memory Recognition					
Recognition accuracy	12	11.82	0.27	0.66	75 th
Rejection accuracy	12	11.97	0.18	0.17	57 th
Digit Span					
Recall span (forwards)	5	6.8	1.3	-1.38	8 th
Trials correct (forwards)	6	8.2	2.2	-1.03	15 th
Recall span (backwards)	5	5.3	1.7	-0.16	44 th
Trials correct (backwards)	5	5.1	3.6	-0.04	48 th
Span of Visual Memory					
Recall span	5	5.7	1	-0.68	25 th
Trials correct	7	8.1	1.9	-0.6	28 th
Continuous Performance Test					
Reaction time	645 ^{ms}	494 ^{ms}	101 ^{ms}	-1.49	7 th
Variability of reaction time	219 ^{ms}	117 ^{ms}	61 ^{ms}	-1.68	5 th
False alarm errors	1	0.33	0.84	-0.8	21 st
False miss errors	1	0.44	0.96	-0.58	28 th
Switching of Attention					
Completion time (digits)	29.2 ^s	18.8 ^s	5.6 ^s	-1.86	3 rd
• Average connection time (digits)	1151 ^{ms}	707 ^{ms}	213 ^{ms}	-2.09	2 nd
Errors (digits)	0	0.4	0.6	0.66	75 th
Completion time (digits & letters)	53 ^s	39 ^s	12 ^s	-1.13	13 th
Average connection time (digits & letters)	1663 ^{ms}	1478 ^{ms}	425 ^{ms}	-0.43	33 rd
Errors (digits & letters)	1	0.5	1	-0.49	31 st
Motor Tapping					
Number of taps (right)	154	168	22	-0.63	26 th
Variability of pause between taps (right)	52 ^{ms}	26 ^{ms}	28 ^{ms}	-0.92	18 th
Number of taps (left)	153	150	21	0.14	56 th
Variability of pause between taps (left)	23 ^{ms}	36 ^{ms}	17 ^{ms}	0.79	78 th

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

Measure	Client	Int. Brain Database Average	Std. Dev	Z Score	Percentile
Choice Reaction Time					
Reaction time	632ms	682ms	91ms	0.55	71 st
Time Estimation					
Accuracy *	-0.05s	-0.11s	0.21s	0.27	
Verbal Interference					
Accuracy (congruent)	19	19.3	2.6	-0.12	45 th
Errors (congruent)	0	0.1	1.1	0.12	55 th
Reaction time (congruent)	1049ms	1003ms	135ms	-0.34	37 th
Accuracy (incongruent)	18	13.3	3.4	1.4	92 nd
Errors (incongruent)	1	0.46	0.83	-0.66	25 th
Reaction time (incongruent)	1025ms	1393ms	228ms	1.61	95 th
Spot the Real Word					
Accuracy	49	50.8	5.3	-0.34	37 th
Word Generation					
Number of words generated (FAS)	15.7	16.6	3.8	-0.25	40 th
Number of animal names generated	20	25.8	5.8	-1	16 th
Oddball (Selective Attention)					
Reaction time	425ms	344ms	48ms	-1.69	5 th
Variability of reaction time	91ms	53ms	20ms	-1.89	3 rd
False alarm errors	1	0.15	0.91	-0.94	17 th
False miss errors	1	0.04	0.67	-1.43	8 th
Emotion Identification					
Fear % accuracy	88	82	19	0.27	61 st
Fear reaction time	1.85s	2.65s	0.66s	1.22	89 th
Anger % accuracy	50	64	16	-0.89	19 th
Anger reaction time	1.98s	2.29s	0.62s	0.5	69 th
Disgust % accuracy	50	52	17	-0.13	45 th
Disgust reaction time	2.86s	2.22s	0.71s	-0.9	18 th
Sadness % accuracy	75	74	21	0.03	51 st
Sadness reaction time	1.82s	2.41s	0.62s	0.94	83 rd
Happiness % accuracy	100	97	15	0.2	58 th
Happiness reaction time	926ms	1307ms	198ms	1.92	97 th
Neutral % accuracy	100	97.5	3.4	0.73	77 th
Neutral reaction time	1074ms	1486ms	287ms	1.44	92 nd

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).

Nominal classification bands	Percentile boundary
Very superior	≤ 100 th
Superior	< 98 th
High average	< 91 st
Average	< 75 th
Low average	< 25 th
Borderline	< 9 th
Extremely Low	< 2 nd

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 25 sites: Fp1, Fp2, F7, F3, Fz, F4, F8, FC3, FCz, FC4, T7, C3, Cz, C4, T8, CP3, CPz, CP4, P7, P3, Pz, P4, P8, O1 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. 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 paradigm was 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. Amplitude is calculated as the area under the curve within defined windows. For further details and background on the employed ERP paradigm also see van Dinteren et al. (2014).

Database comparison

All data are compared to age matched controls from the Brain Resource International Database, and compared within the same sex (males compared to males and females compared to females).

References

- Arns, M., Bruder, G., Hegerl, U., Spooner, C., Palmer, D. M., Etkin, A., . . . Gordon, E. (2016). EEG alpha asymmetry as a gender-specific predictor of outcome to acute treatment with different antidepressant medications in the randomized iSPOT-D study. *Clinical Neurophysiology*, 127, 509-19. doi:<http://dx.doi.org/10.1016/j.clinph.2015.05.032>
- Gratton, G., Coles, M. G., & Donchin, E. (1983). A new method for off-line removal of ocular artifact. *Electroencephalography and Clinical Neurophysiology*, 55(4), 468-84.
- van Dinteren, R., Arns, M., Jongsma, M. L. A., & Kessels, R. P. C. (2014). P300 development across the lifespan: A systematic review and meta-analysis. *PloS One*, 9(2), e87347. doi:10.1371/journal.pone.0087347