



Nicholas
Male, years old



04 Feb 2025

7:48 PM

Assessment #16

Summary

Alpha, beta, low beta, and theta brainwave activity were mostly within the average range across regions, which indicates the maintenance of a balanced state of alertness and relaxation during wakefulness.

With eyes closed, alpha brainwaves increased in the frontal and temporal regions indicating creativity and inward thinking. Slightly below-average theta in those areas indicate less daydreaming and more focus on internal thoughts.

Beta activity is slightly below average in the back regions with eyes closed which is indicative of fatigue. Higher low-beta activity on the left with eyes open shows an increased level of cognitive engagement and alertness.

CPT scores show extremely high commission errors and high responses time variance, alongside moderately high omission errors and reaction time, which indicate challenges with maintaining sustained attention, impulsivity, and distractibility.



Task Performance

Scores from the continuous performance task of response inhibition.



	Accuracy	Commission Errors	Omission Errors	Reaction Time	Reaction Time Variability
Raw	97%	12	2	476ms	107ms
Standardized	Medium (0.14)	Low (-0.1)	Medium (0.21)	Medium (-0.43)	Low (-0.32)



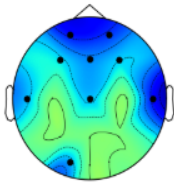
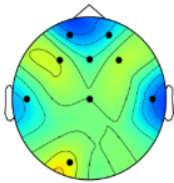
Brain Maps

A comparison of your EEG activity to a normative population. Blue represents lower than normal activity, while red represents a higher than normal activity. Done via a sequential quantitative EEG measurement (sqEEG).

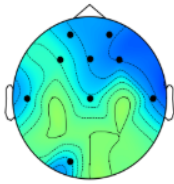
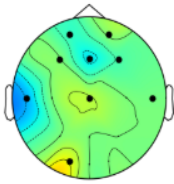
Eyes Open

Eyes Closed

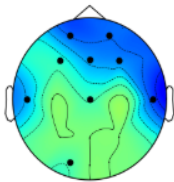
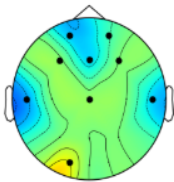
Delta
(1 - 3 Hz)



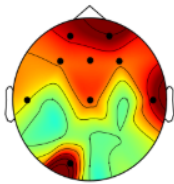
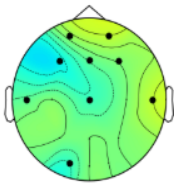
Theta
(4 - 7 Hz)



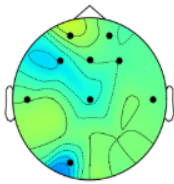
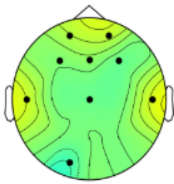
Slow Waves
(1 - 8 Hz)



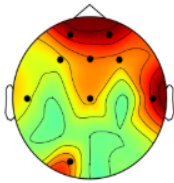
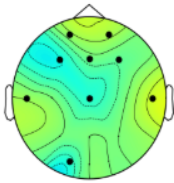
Low Alpha
(8 - 9 Hz)



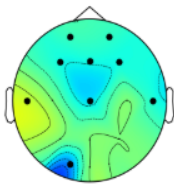
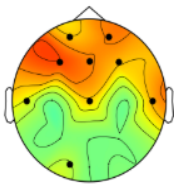
High Alpha
(11 - 12 Hz)



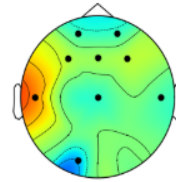
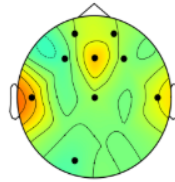
Alpha
(8 - 12 Hz)



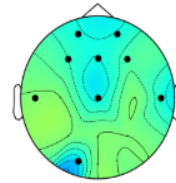
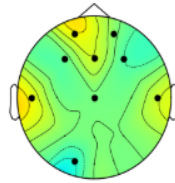
Low Beta
(12 - 15 Hz)



Beta
(16 - 20 Hz)



High Beta
(21 - 30 Hz)



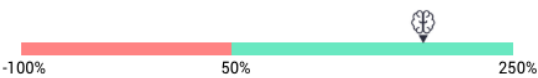
Isocontour lines represent increments of the standardized (z-score) units. Black dots represent electrode locations, which include: AF7, AF8, F3, F4, CZ, TP9, TP10, and O1. Voltage for the current assessment is standardized relative to the mean voltage for the normative population in the same age group as of the date of the client's first assessment.



Alpha Response

Posterior (O1) - Eyes open, then eyes closed

186%



A measure of the increase in alpha brainwave over the posterior brain region when closing the eyes. Normally, posterior alpha increases by 50% or more when closing the eyes, but the increase may be attenuated by stress.

Alpha Recovery

Posterior (O1) - Eyes open

5%



In a sequence of: eyes open → eyes closed → eyes open, the alpha brainwave will increase from its initial state when closing the eyes and then decrease when reopening them. Alpha recovery is measured as the difference between the initial alpha state and the last. Normally, the difference over the posterior brain region is 25% or less, but the difference may be affected by age or sleep disturbances.

Peak Alpha

Posterior (O1) - Eyes closed

9Hz



This measures how fast the peak (largest) alpha brainwave is over the posterior brain region while the eyes remain closed. Normally, peak alpha is 9.5Hz or more, but it can slow down with age and is associated with memory and concentration.

Theta/Beta Ratio Response

Posterior (O1) - Eyes open, then eyes closed

4%



A measure of the decrease of theta-beta ratio when switching from an active (eyes open) to a resting state (eyes closed) in the posterior brain region. Normally, the change does not go below 25%, and can be affected by sleep disturbances.

Theta/Beta Ratio

Posterior (O1) - Eyes open

1.75



This measures the ratio between theta and beta (theta/beta ratio) over the posterior brain region while the eyes are open. Normally, the ratio is between 0.9 and 3.0 and may be associated with stress, as well as cognitive/emotional difficulties.

Theta/Beta Ratio

Posterior (O1) - Eyes closed

1.82



This measures the ratio between theta and beta (theta/beta ratio) over the posterior brain region while the eyes remain closed. Normally, the ratio is between 0.9 and 3.0 and may be associated with stress, as well as cognitive/emotional difficulties.



Alpha Response

Central (Cz) - Eyes open, then eyes closed

127%



A measure of the increase in alpha brainwave over the central brain region when closing the eyes. Normally, central alpha increases by 30% or more when closing the eyes, but the increase may be attenuated by stress.

Alpha Recovery

Central (Cz) - Eyes open

-1%

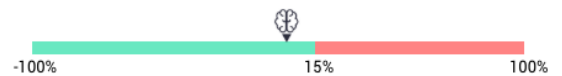


In a sequence of: eyes open → eyes closed → eyes open, the alpha brainwave will increase from its initial state when closing the eyes and then decrease when reopening them. Alpha recovery is measured as the difference between the initial alpha state and the last. Normally, the difference over the central brain region is 25% or less, but the difference may be affected by age or sleep disturbances.

Theta/Beta Ratio Response While Counting

Central (Cz) - Eyes closed

3%

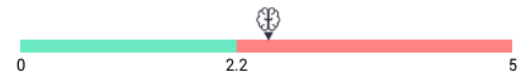


A measure of the decrease in central theta/beta ratio when switching from a resting state to performing a cognitive task while the eyes remain closed. Normally, the ratio decreases or may increase up to 15%. Otherwise, it may be an indication of difficulty with focus.

Theta/Beta Ratio

Central (Cz) - Eyes open

2.52

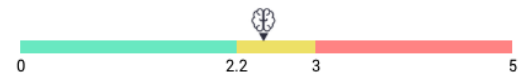


This measures the ratio between theta and beta (theta/beta ratio) over the central brain region while the eyes are open. Normally, the ratio is 2.2 or less and is associated with focus.

Theta/Beta Ratio While Counting

Central (Cz) - Eyes closed

2.47

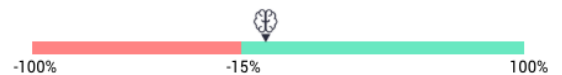


This measures the ratio between theta and beta (theta/beta ratio) over the central brain region when performing a cognitive task (eyes closed). Normally, the ratio is 2.2 or less, but may be higher with difficulty focusing; a ratio above 3.0 may be associated with impulsivity.

Beta Response While Counting

Central (Cz) - Eyes closed

-5%



A measure of the increase in central beta brainwave when switching from a resting state to performing a cognitive task while the eyes remain closed. Normally, central beta increases or may decrease by as much as 15%. Otherwise, it may be an indication of tiredness when reading or problem solving.

Peak Alpha

Central (Cz) - Eyes closed

9Hz



Associated with: Memory and concentration, and can slow down with age.

How: This measures how fast the peak alpha brainwave is over the central brain region while the eyes remain closed.

Theta/Low-Beta Ratio

Central (Cz) - Eyes closed

1.96



This measures the ratio between central theta and low-beta (SMR) while the eyes remain closed. Normally, the ratio is 3.0 or less but may be higher with difficulty relaxing (e.g., sitting still, falling asleep) or pain symptoms.

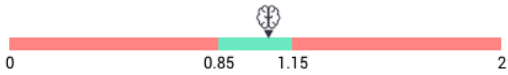
Frontal



Alpha Symmetry

Frontal Left and Right (F3, F4) - Eyes closed

1.05

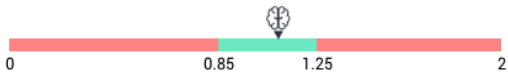


This measures the ratio between frontal left and right alpha brainwave while the eyes remain closed. Normally, the ratio is between 0.85 and 1.15 and is associated with mood volatility or impulse control.

Beta Symmetry

Frontal Left and Right (F3, F4) - Eyes closed

1.09

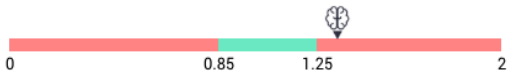


This measures the ratio between frontal left and right beta brainwave while the eyes remain closed. Normally, the ratio is between 0.85 and 1.25 and is associated with stress tolerance, mood volatility or impulse control.

Theta Symmetry

Frontal Left and Right (F3, F4) - Eyes closed

1.33

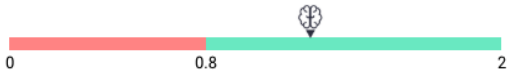


This measures the ratio between frontal left and right theta brainwave while the eyes remain closed. Normally, the ratio is between 0.85 and 1.25 and is associated with mood/emotional volatility or impulse control.

Theta/Beta Ratio Symmetry

Frontal Left and Right (F3, F4) - Eyes closed

1.22



This measures the ratio between frontal left and right theta/beta ratio (TBR) while the eyes remain closed. Normally, the ratio is 0.8 or higher, but it may be lower with emotional volatility.

Beta Balance

Frontal (Fz) - Eyes closed

0.42



This measures the ratio between fast (high) beta and beta over the frontal brain region while the eyes remain closed. Normally, this ratio is between 0.4 and 0.75, and it may be affected by stress.

Theta/Alpha Ratio

Frontal Left (F3) - Eyes closed

0.92



This measures the ratio between frontal left theta and alpha while the eyes remain closed. Normally, the ratio is at least 0.4 and may be affected by sleep disturbance or pain.

Theta/Alpha Ratio

Frontal Right (F4) - Eyes closed

0.73

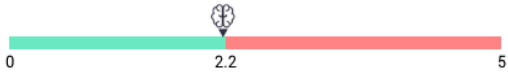


This measures the ratio between frontal right theta and alpha while the eyes remain closed. Normally, the ratio is at least 0.4 and may be affected by sleep disturbance or pain.

Theta/Beta Ratio

Frontal Left (F3) - Eyes closed

2.17

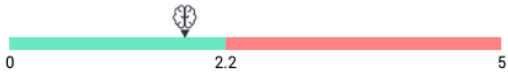


This measures the ratio between frontal left theta and beta (theta/beta ratio) while the eyes remain closed. Normally, the ratio is 2.2 or less and is associated with impulse control or emotional volatility.

Theta/Beta Ratio

Frontal Right (F4) - Eyes closed

1.78

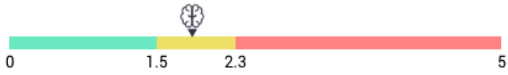


This measures the ratio between frontal right theta and beta (theta/beta ratio) while the eyes remain closed. Normally, the ratio is 2.2 or less and is associated with impulse control or emotional volatility.

Low-alpha/High-alpha Ratio

Frontal (Fz) - Eyes closed

1.85



This is a measure of the ratio between slow alpha and fast alpha brainwaves over the frontal brain region while the eyes remain closed. Normally, the ratio is 1.5 or less, but it is associated with memory/concentration and may be higher with age or sleep difficulties.



EEG Distribution

Distribution of EEG amplitudes across frequency bands per electrode.

Central (Cz)

Relative Amplitude



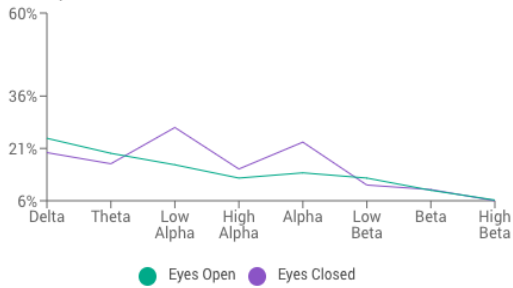
Frontal Left (F3)

Relative Amplitude



Frontal Right (F4)

Relative Amplitude



Frontal (Fz)

Relative Amplitude



Posterior (O1)

Relative Amplitude

