BrainTrainUK
Changing Lives With Neurofeedback

Bespoke
QEEG Brain Mapping
Analysis Report

[CLIENT IDENTIFIER]

DATE

NOTE:

THIS IS AN *EXAMPLE* REPORT.

EVERY REPORT WILL BE DIFFERENT, THE METRICS THAT WILL BE ASSESSED MAY CHANGE DEPENDING ON WHAT IS SEEN IN THE INITIAL ANALYSIS, SYMPTOMS, CLIENT INPUT ON HISTORY OR SPECIFIC CLIENT REQUESTS.

IF YOU HAVE A SPECIFIC REQUEST FOR SOMETHING THAT YOU WOULD LIKE US TO ASSESS, PLEASE ASK.

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Contents

Client Details

Date of Birth: [redacted]

Gender: Female

Recording Time:

Recording Quality: Good

History / Symptoms:

Periodic leg movements, restless leg

Difficulty falling asleep

Difficulty completing tasks, poor concentration, distractibility

Compromised handwriting

Lack of motivation, lack of social interest, lack of social awareness

Reading Difficulty

Poor verbal expression

Lack of empathy, Manipulative behaviour, Poor social or emotional reciprocity

Summary of Findings

The **Power Spectral Density (PSD)** analysis revealed a mixed arousal profile, characterized by increased beta power over central and elevated theta power in frontal and parietal areas. This pattern may reflect dysregulated cortical arousal, with hyperarousal in sensorimotor regions together with underarousal or delayed maturation in prefrontal and parietal networks. This coexistence of underarousal and hyperarousal may reflect imbalanced regulatory control in neural systems responsible for attention, motor regulation, and state modulation.

Despite elevated central beta activity, **the theta/beta ratio over central regions** remained markedly high (~8), driven by disproportionately increased theta power. This suggests a dysregulated arousal profile — with underarousal and inattention (theta) co-occurring with hypervigilant or motor-driven beta activity, possibly reflecting difficulty in achieving optimal cortical regulation.

E/I balance analysis revealed **reduced aperiodic exponent values** over temporal and frontal regions. Flattening of the spectrum in temporal areas may reflect disrupted excitation-inhibition balance within language-related networks, consistent with findings in children with language impairments. Similarly, frontal spectral flattening potentially indicates increased neural noise and reduced attentional control, linked to impulsivity and cognitive fatigue.

Resting-state connectivity profile reveals a consistent pattern of frontal hypoconnectivity across frequency bands, accompanied by increased central and posterior connectivity, suggesting network-level imbalance that aligns with key clinical concerns including attention difficulties, restless leg symptoms, poor verbal output, and disrupted sleep. In the delta band, long-range fronto-posterior and frontal-temporal connections were weak, suggesting under-engagement of slow integrative networks linked to sleep regulation and attentional readiness.

Theta band revealed distributed low connectivity but with focal increases along the midline and left temporo-parietal axis. These may reflect compensatory thalamocortical recruitment, potentially linked to restlessness, sleep-onset challenges, and working memory.

In the alpha band, interhemispheric frontal desynchronization was prominent, commonly associated with impaired inhibitory control and verbal dysregulation. In contrast, increased connectivity in centro-parietal network may reflect sensorimotor over-engagement, relevant to restless leg symptoms and arousal regulation.

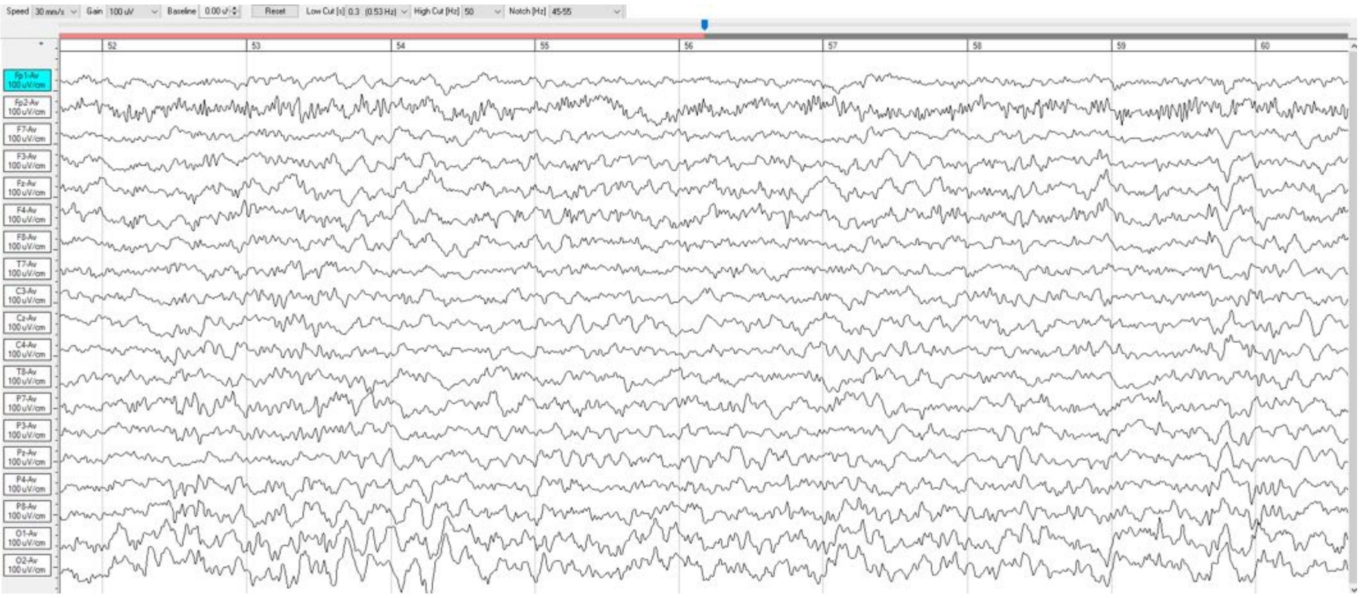
The beta band continued this pattern of reduced frontal and fronto-parietal coupling, while showing increased synchrony in parietal and centro-parietal networks. This may reflect hyperarousal in sensorimotor-parietal circuits, aligning with motor restlessness and alertness dysregulation.

Detrended fluctuation analysis showed **elevated Hurst exponent values** in the beta frequency band across several frontotemporal regions. This suggests increased signal persistence and reduced temporal variability in these areas. Such a pattern may reflect heightened background arousal, motor rigidity, or difficulty shifting out of internally focused states, potentially involving networks responsible for movement control, emotional regulation, and vigilance.

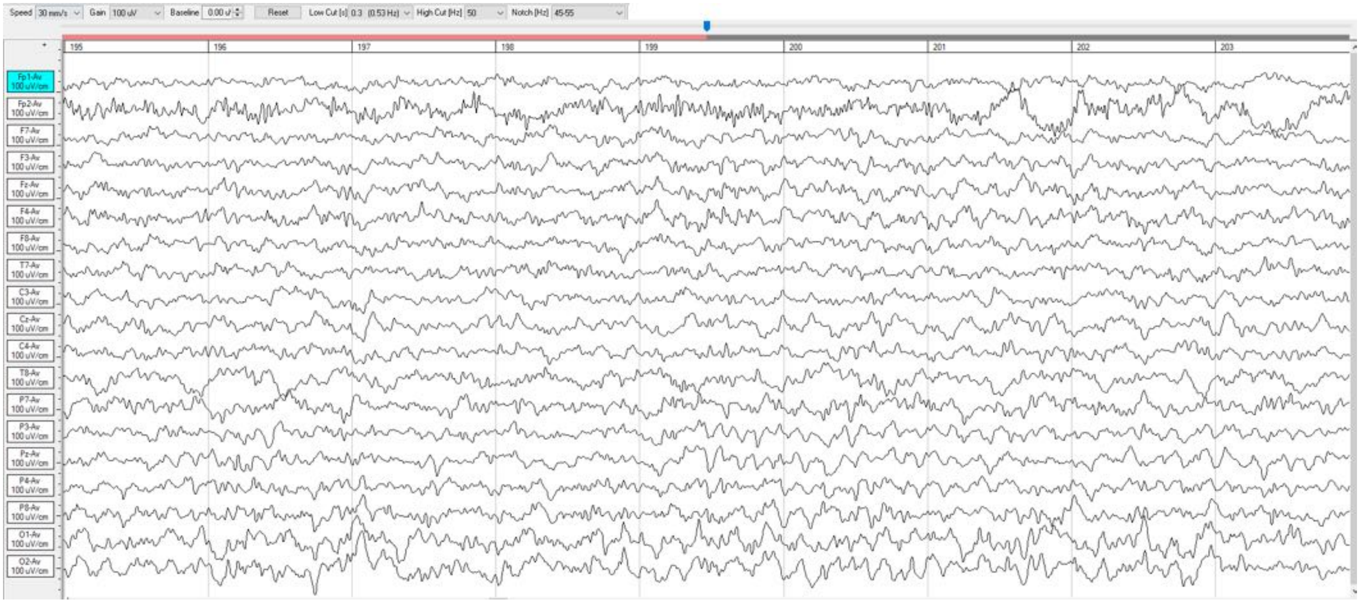
ICA spectral analysis combined with LORETA source localization revealed four dominant components accounting for a substantial proportion of the EEG signal variance. The identified sources were primarily localized to the posterior cingulate cortex (BA 23 and 31), the posterior default mode network, and the frontopolar cortex (BA 10). These components were characterized by low-frequency and alpha-band activity, reflecting a functional profile consistent with internally directed attention, self-referential processing, and reduced external engagement. The spectral and spatial patterns suggest a predominance of resting-state network activity, which may indicate underarousal, persistent internal focus, or reduced task readiness, depending on behavioral and developmental context.

Spontaneous EEG

EEG was recorded during relaxation with eyes open. From this recording, spectral data was calculated and compared with database population. Database comparison was calculated with weighted montage. Speed – 30 mm/s; Gain – 100 µV; Low cut – 0.53 Hz; High cut – 50 Hz; Notch – 45-55 Hz



Speed 30 mm/s Gain 100 uV Baseline 0.00 uV Low Cut [s] 0.3 (0.53 Hz) High Cut [Hz] 50 Notch [Hz] 45-55



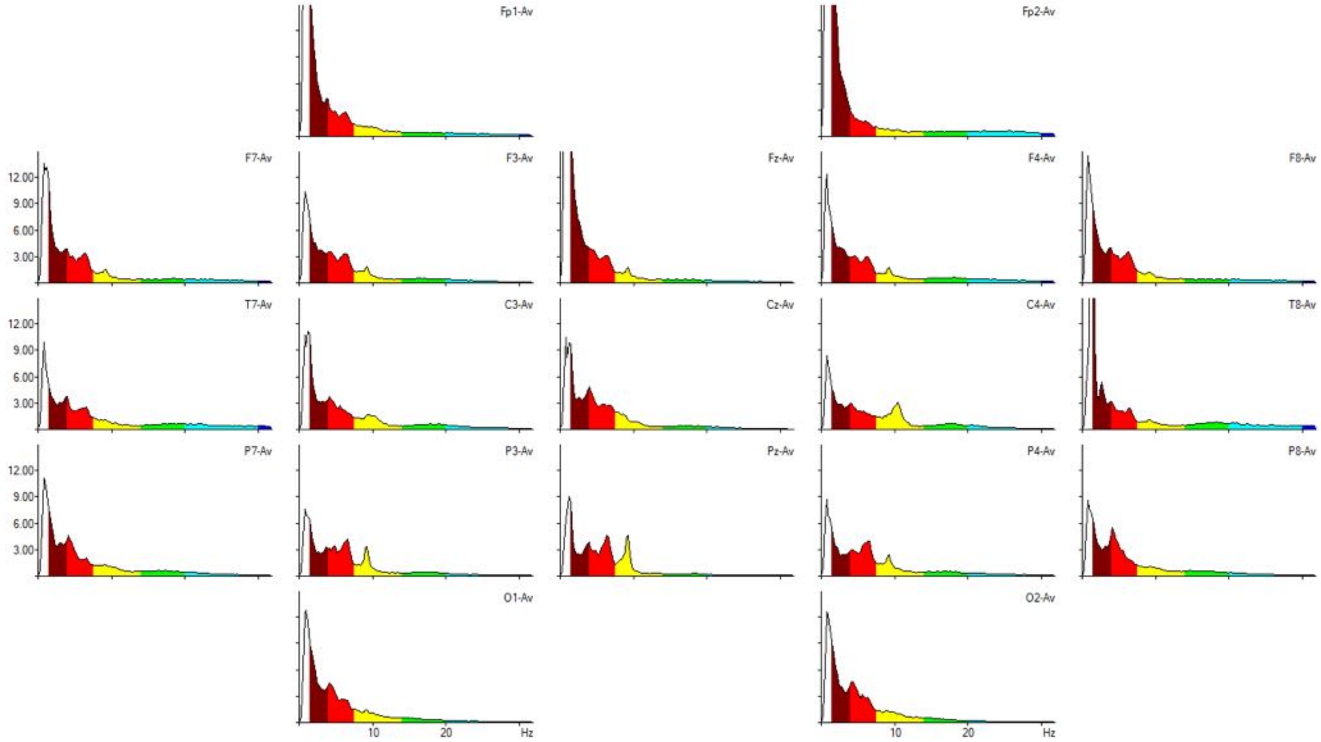
Speed 30 mm/s Gain 100 uV Baseline 0.00 uV Low Cut [s] 0.3 (0.53 Hz) High Cut [Hz] 50 Notch [Hz] 45-55

QEEG analysis Eyes open

Relative power spectra (%P)

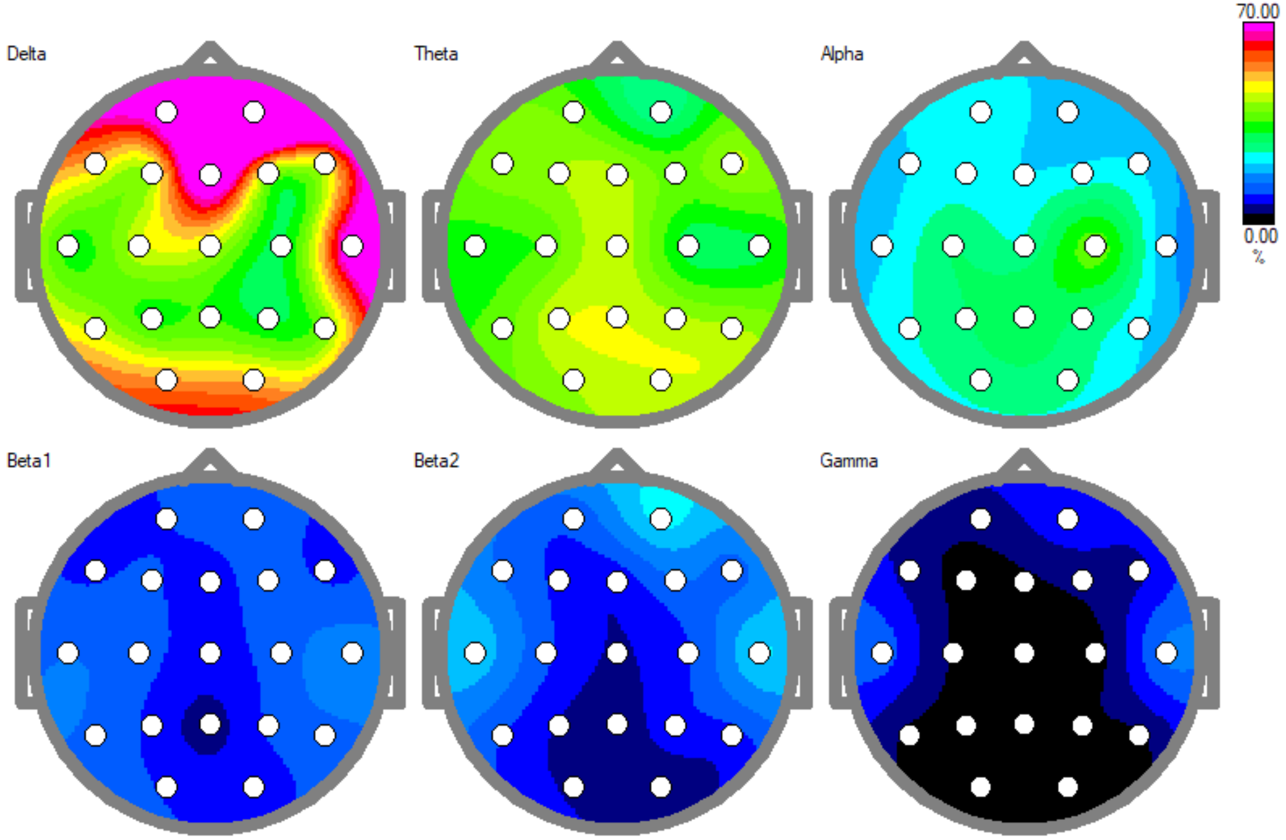
Channel-wise relative power spectra (%P) across 19 EEG electrodes during eyes-open resting-state recording. Each subplot shows the relative spectral power (%) from 1 to ~40 Hz for an individual channel, averaged across epochs or participants. Power spectra are color-coded by standard frequency bands: delta (1–4 Hz, dark red), theta (4–8 Hz, red), alpha (8–12 Hz, yellow), beta (12–30 Hz, green to light blue), and gamma (>30 Hz, dark blue).

Bandrange			
Name	From (Hz)	To (Hz)	Color
Delta	1.5	4	🟥
Theta	4	7.5	🟥
Alpha	7.5	14	🟨
Beta 1	14	20	🟩
Beta 2	20	30	🟦
Gamma	30	40	🟦



Relative power spectra (%P)

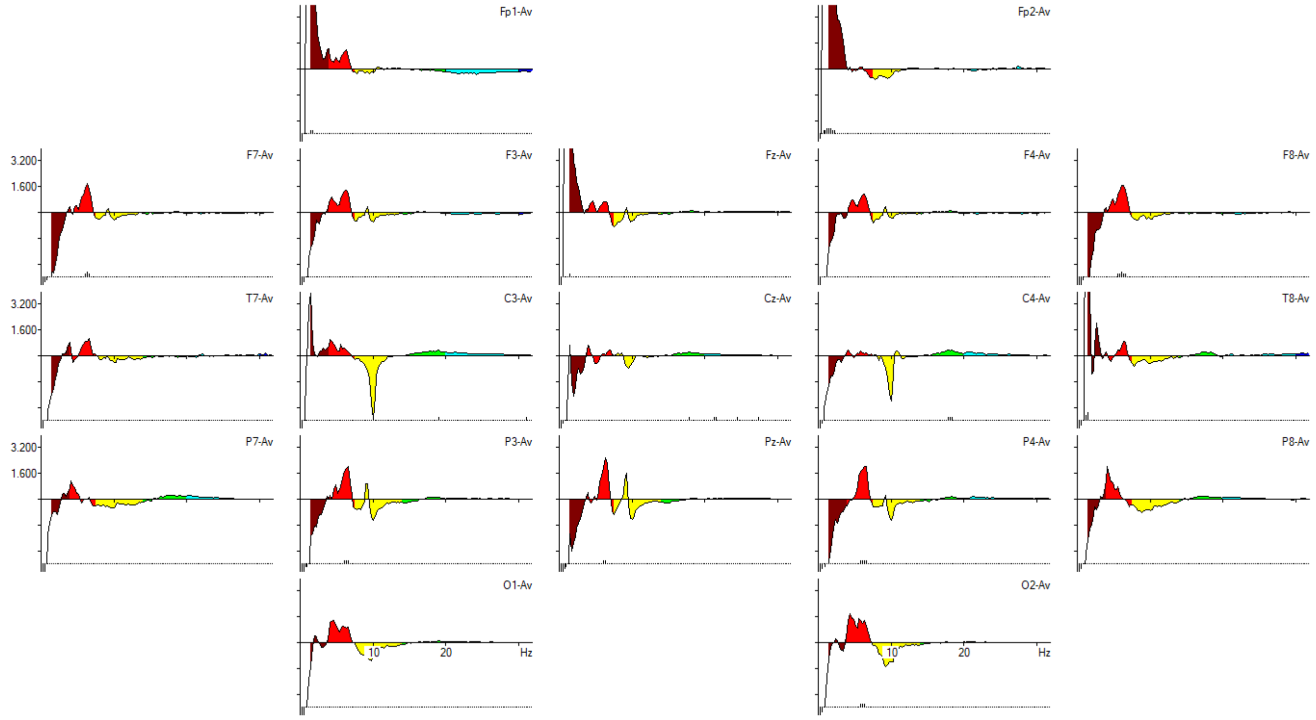
Topographical distribution of relative power in canonical frequency bands during eyes-open QEEG. Scalp maps show averaged relative power (%) for delta (1–4 Hz), theta (4–8 Hz), alpha (8–12 Hz), beta1 (12–15 Hz), beta2 (15–30 Hz), and gamma (30–45 Hz) frequency bands. Color intensity reflects the proportion of total power within each band, normalized per electrode.

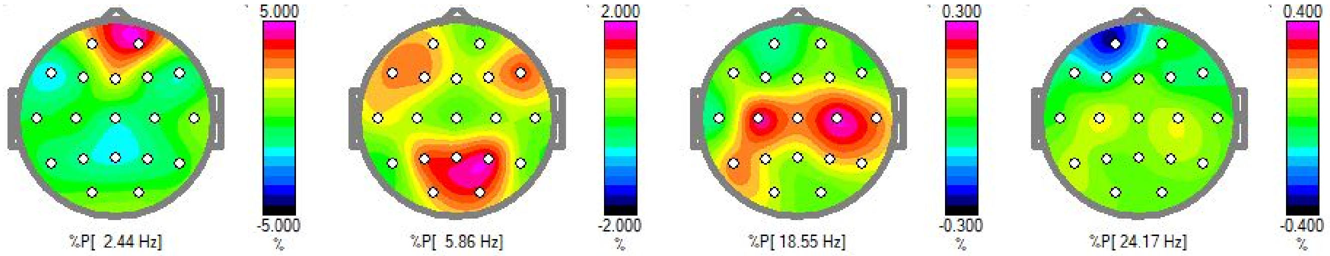


Comparison with the reference database

Comparison with reference data: Bars on the bottom line indicate significant deviations from norm.

Relative power spectra (%P)





%% Increased relative delta power in frontal Fp1, Fp2, Fz areas.

%% Increased relative theta power in frontal F7, F8; parietal P3, Pz, P4; occipital O2 areas.

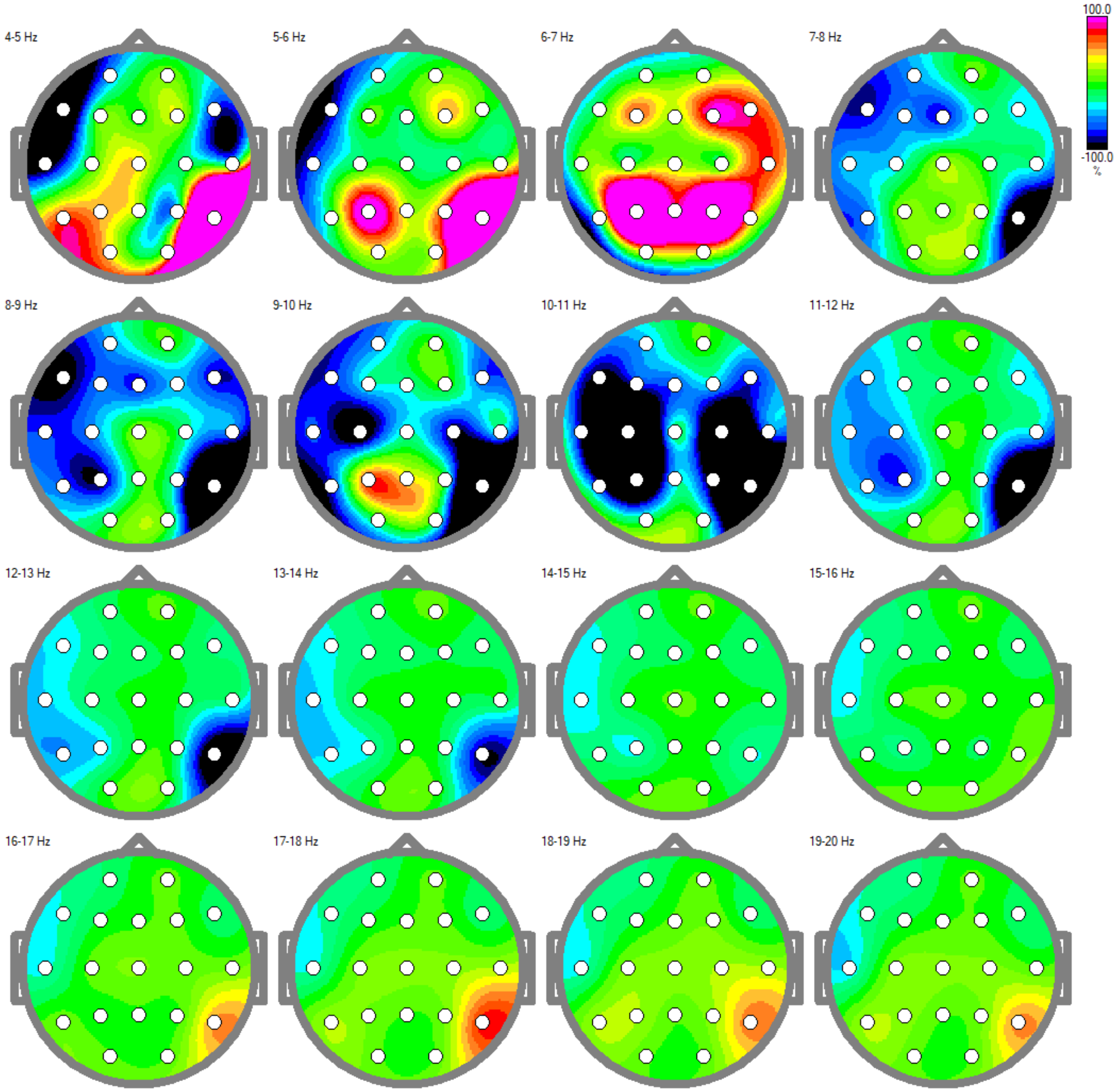
%% Increased relative beta 1 power in central C3, Cz, C4

%% Increased relative beta 2 power in central Cz areas.

Interpretation: The plot reveals significant elevations in beta power (13–30 Hz) at central sites C3, Cz, and C4. Beta rhythms are closely linked to sensorimotor processing, motor readiness, and alertness. Elevated beta in central regions has been associated with Hyperarousal or cortical overactivation, anxiety and motor restlessness (Young Jung, 2011; Ferri et al. 2014; Wang, 2025). The plot also shows increased theta power in frontal and parietal regions. While elevated theta is typical in younger children, elevated frontal and parietal theta may reflect delayed cortical maturation and underarousal. Elevated frontal and parietal theta activity is linked to reduced inhibitory control, attentional challenges executive and language functions

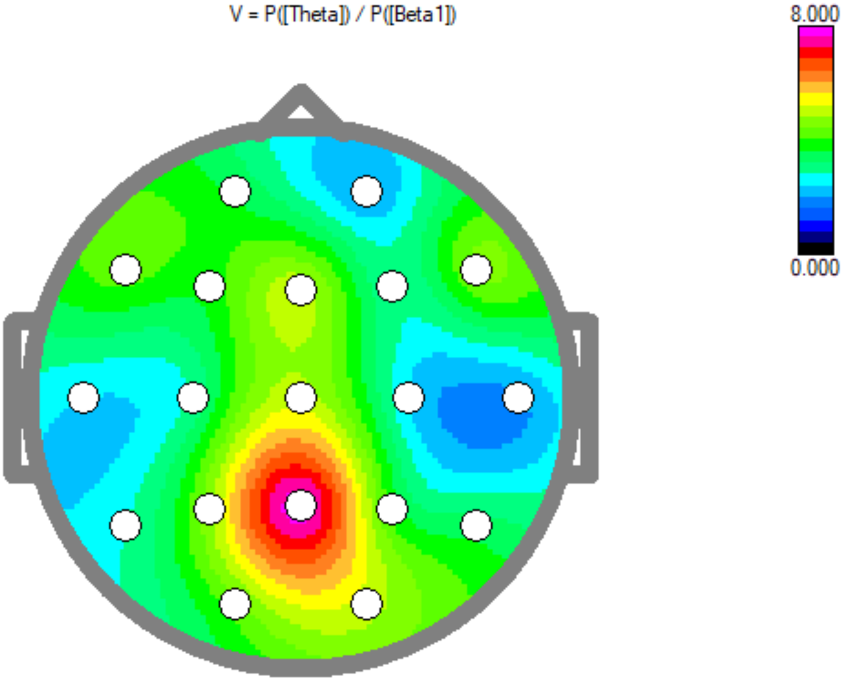
(Tan et.el, 2024, Jancke, 2016), a pattern reported in children with attentional difficulties, learning challenges, or neurodevelopmental conditions such as ADHD and ASD. The combination of high frontal theta (underarousal) and high central beta (hyperarousal) potentially reflects a dysregulated arousal profile, described as mixed arousal state.

Maps of EEG power spectra for band ranges



Theta/Beta-Ratio - Eyes Open

The Theta/Beta ratio gives an index as to the quality of an individual's ability to pay attention. This ratio is negatively correlated with age, as it is expected to be larger in younger children, smaller in adulthood and rises again in later adulthood. This is measured in a GO/NOGO Test where it is expected that a higher ratio will produce more errors. This ratio has been demonstrated in the research of Monastra (Monastra et. al., 1999).

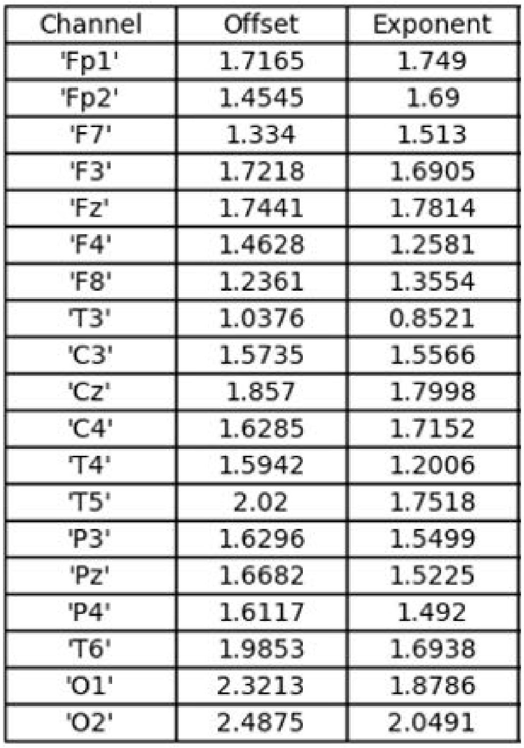


Index of inattention elevated (8) – (Norm 2-4)

The topoplot above displays the theta/beta ratio (TBR) during eyes-open resting-state EEG, with a central peak reaching values “8”, which is notably elevated. Together with high central beta this high TBR suggests a dysregulated arousal system where increased theta power is linked to underactivation, poor sustained attention and the simultaneous central beta rhythm possibly reflects compensatory effort, motor restlessness, or anxious hypervigilance (Barry et al., 2009; Clarke et al., 2001)

Cortical Excitation/Inhibition Balance

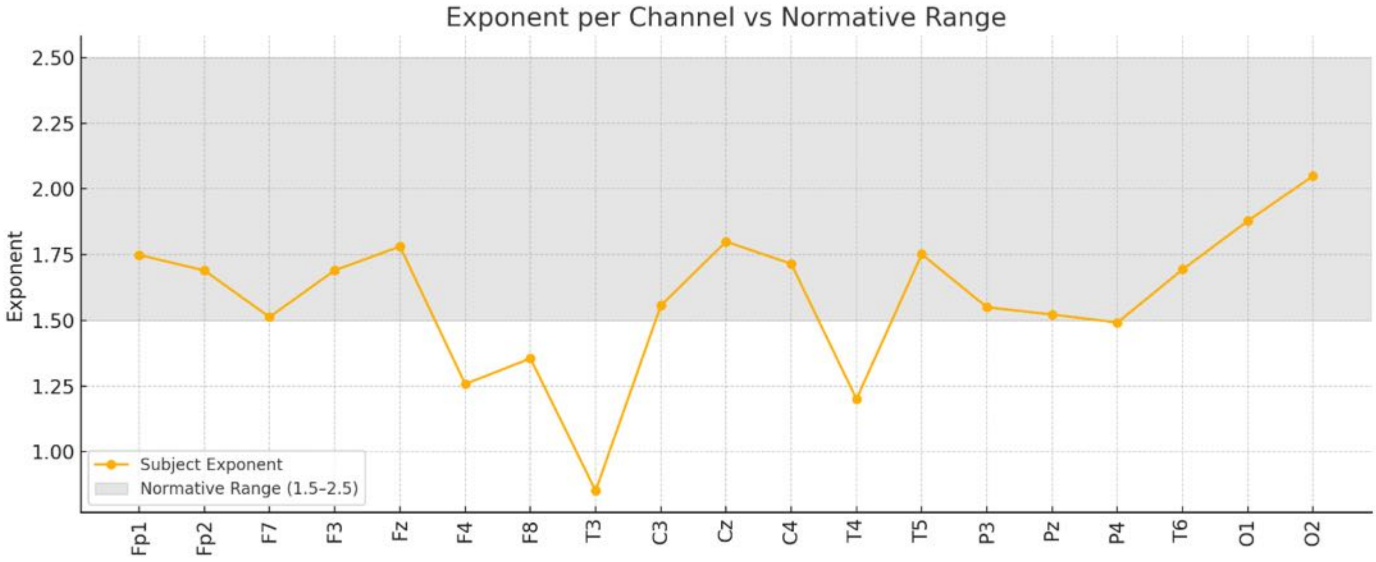
Power spectrum of an EEG signal is composed of an aperiodic component, which reflects 1/f (one over f) characteristics (the power exponentially decreases as frequency increases) and a periodic component (brain oscillations) as peaks rising above the aperiodic component. The aperiodic component contains information about the excitability of the cortex. More specifically, aperiodic activity can be characterized by an exponent (slope), which describes the decay of the power spectrum when measured in log-log space and the offset, which describes the broadband shift of power across frequencies. Low values of slope represent a flatter power spectrum, which is characteristic of irregular desynchronized cortical states (E/I balance is shifted to excitation), while steeper (higher) slope indicates dominant low frequency behaviour (E/I balance is shifted to inhibition of networks). Normative studies in children aged 4–12 report aperiodic exponent values typically ranging from ~1.5 to 2.5, and offset values between ~1.2 and 2.5, with both parameters showing age-related decline (Hill 2023; McSweeney, 2023).

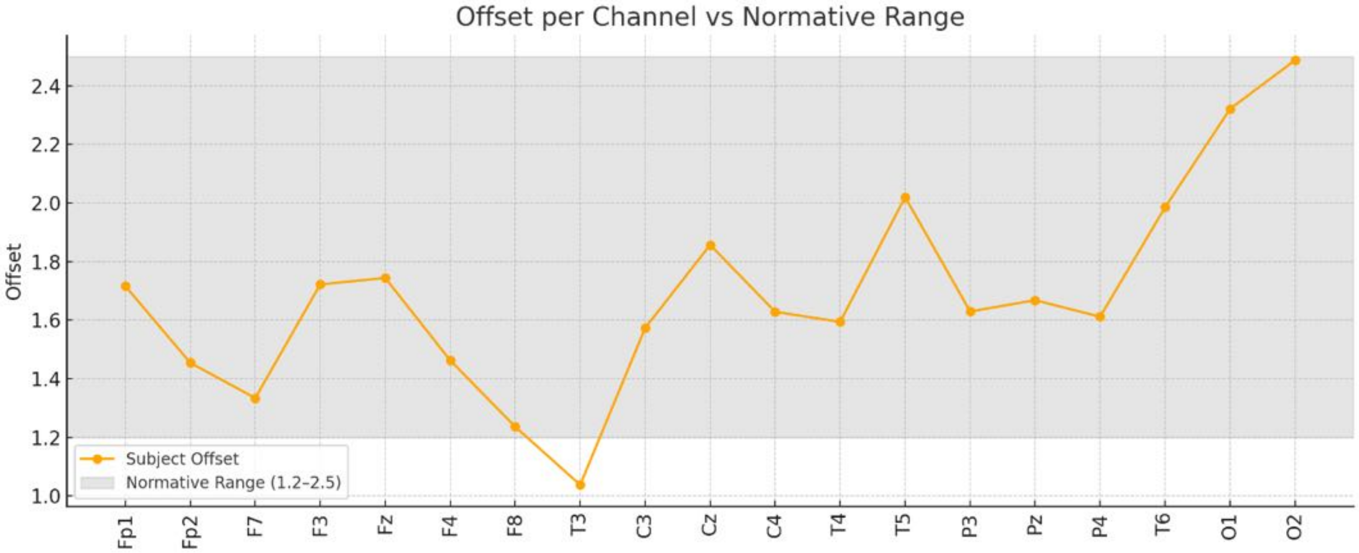


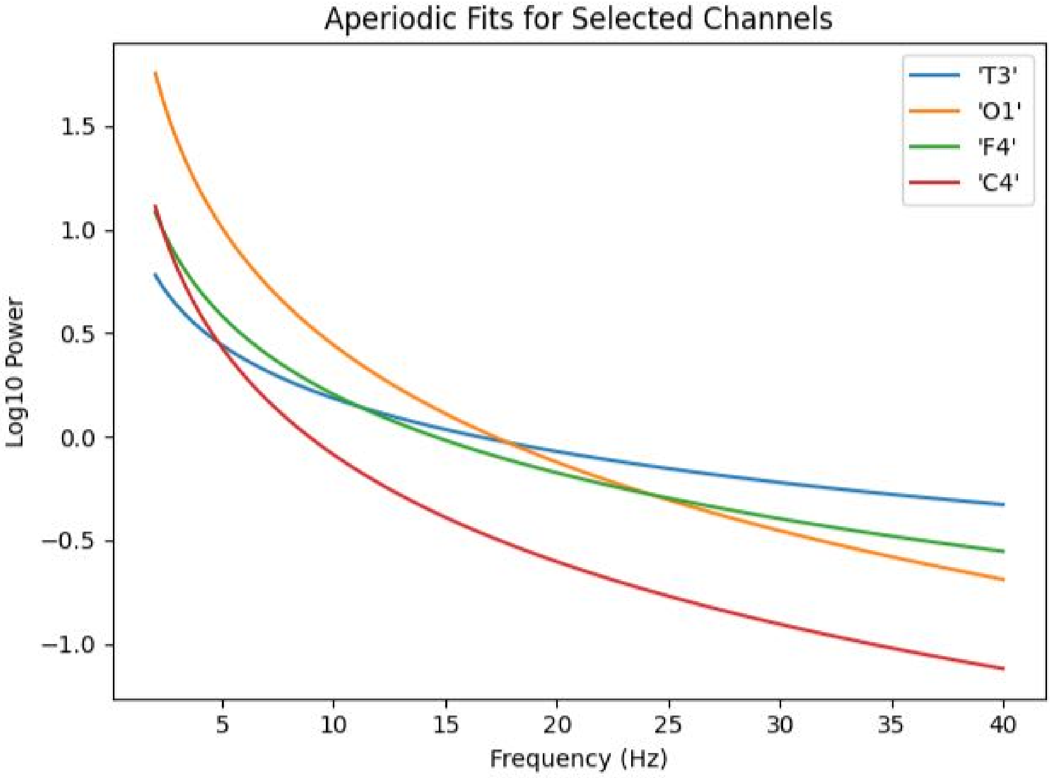
Channel	Offset	Exponent
'Fp1'	1.7165	1.749
'Fp2'	1.4545	1.69
'F7'	1.334	1.513
'F3'	1.7218	1.6905
'Fz'	1.7441	1.7814
'F4'	1.4628	1.2581
'F8'	1.2361	1.3554
'T3'	1.0376	0.8521
'C3'	1.5735	1.5566
'Cz'	1.857	1.7998
'C4'	1.6285	1.7152
'T4'	1.5942	1.2006
'T5'	2.02	1.7518
'P3'	1.6296	1.5499
'Pz'	1.6682	1.5225
'P4'	1.6117	1.492
'T6'	1.9853	1.6938
'O1'	2.3213	1.8786
'O2'	2.4875	2.0491

The table on the left shows the offset (intercept) and Exponent (slope) values from eyes open recording.

The aperiodic exponent and offset values from the subject's EEG were compared to normative ranges reported in the literature. The mean exponent (1.58 ± 0.27) and offset (1.69 ± 0.35) fell within the expected range for children aged 6–9 years, which typically spans 1.5–2.5 for exponent and 1.2–2.5 for offset (Hill 2023; McSweeney, 2023). Channel-wise analysis showed that most values for the offset were well-aligned with these normative ranges, except T3 channel, which had a value slightly lower than the normative range. As for the exponent frontal F4, F8 and temporal T3, T4 channels displayed lower than the normative range. A lower aperiodic exponent (flatter 1/f slope) reflects a shift in the excitation-inhibition (E/I) balance toward increased excitation or reduced inhibition in cortical circuits.







The plot above shows that the aperiodic slopes for T3 and F4 are flatter compared to O1 and C4. A flatter slope (lower exponent) indicates relatively less suppression of higher-frequency activity, which may reflect differences in underlying neural dynamics such as reduced inhibitory tone or altered excitation-inhibition balance in temporal and frontal regions. In contrast, the steeper decay in O1 and C4 is consistent with more typical spectral scaling with balanced excitatory and inhibitory networks.

Temporal T3 and T4 electrodes overlay cortical regions involved in auditory processing and language functions, including phonological decoding, semantic integration, and verbal expression. The reduced exponent at T3/T4 may reflect a relative imbalance in excitation-inhibition dynamics, potentially manifesting as increased neural noise or less efficient signal processing in language-relevant networks.

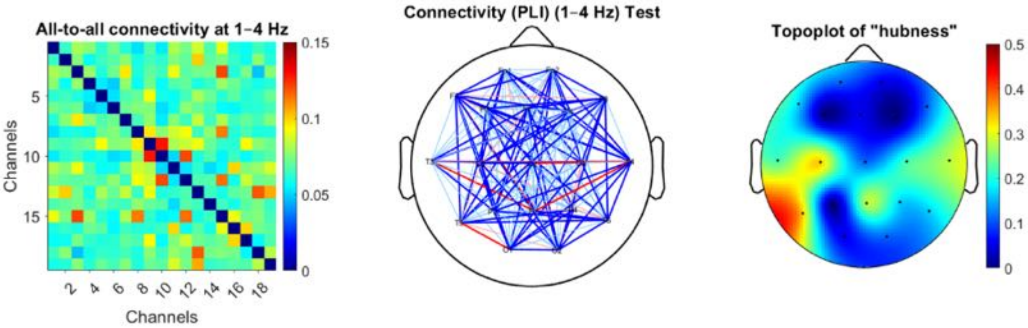
This pattern is consistent with emerging evidence linking flatter 1/f slopes to developmental language and cognitive difficulties. For example, a recent study by examined EEG activity in children aged 3–11 years with Specific Language Impairment (SLI) compared to typically developing peers. The findings revealed that children with SLI exhibited increased aperiodic activity and lower exponent over a broad frequency range (13–45 Hz), suggesting an atypical E/I balance with a bias for excitatory activity (Angulo-Ruiz et al., 2025).

Lower aperiodic exponent values observed over frontal regions may reflect flattening of the EEG power spectrum — a pattern associated with increased neural noise (possibly reflecting less efficient cortical processing) and reduced excitation-inhibition balance. While not uniquely lateralized, such frontal spectral flattening has been linked to sleep problems (cortical hyperarousal), attentional dysregulation, impulsivity, language impairments and cognitive fatigue in children (Bai et al., 2025; Karalunas et al., 2022; Donoghue et al., 2020; Wilkinson et al., 2024).

All to All Connectivity Patterns

The plots below show connectivity patterns across four canonical frequency bands (1–4 Hz, 4–8 Hz, 8–14 Hz, and 14–30 Hz) from the subject’s eyes open recording. For each band, left panel indicates all-to-all phase lag index (PLI -a algorithm used to calculate the connectivity strength) connectivity matrix, middle panel shows a circular graph representation of network structure, and the right panel shows a scalp topography reflecting nodal “hubness” as determined using “graph theory”.

Delta Band Connectivity:


All-to-all connectivity at 1-4 Hz

Connectivity (PLI) (1-4 Hz) Test

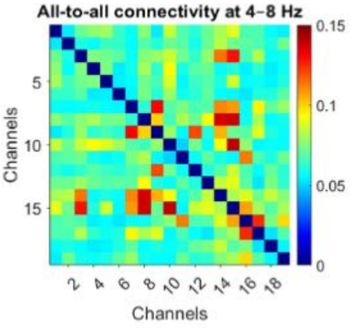
Topoplot of "hubness"

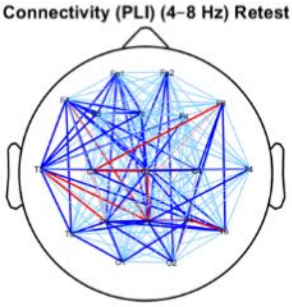
Fields	labels
1	'Fp1'
2	'Fp2'
3	'F7'
4	'F3'
5	'Fz'
6	'F4'
7	'F8'
8	'T3'
9	'C3'
10	'Cz'
11	'C4'
12	'T4'
13	'T5'
14	'P3'
15	'Pz'
16	'P4'
17	'T6'
18	'O1'
19	'O2'

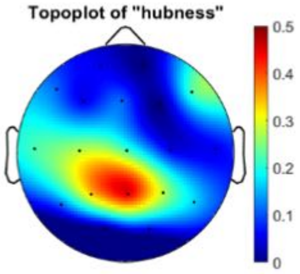
There are weak connections widely distributed across frontal and occipital regions, pointing to reduced long-range coherence, especially fronto-posterior coupling. But there is a simultaneous increased connectivity in central channels (between C3, Cz, C4). Consistent with prior EEG and fMRI work in hyperkinetic conditions such as restless-legs syndrome and ADHD, the delta-band hyperconnectivity observed over central (sensorimotor) electrodes likely indexes an over-synchronised motor network, which may potentially be linked to clinical motor symptoms ranging from periodic limb movements during sleep to daytime fidgeting and restlessness (Park et al., 2022; Choi et al., 2017).

In addition, while there is no universally defined normative range for delta-band connectivity in children, the relatively low fronto-parietal (channel 2 and 16) connectivity observed here may reflect atypical synchronization patterns. More specifically, frontal lobes are central to top-down attentional control, and long-range frontal–posterior connections are implicated in selective and sustained attention, important for inhibiting irrelevant stimuli and coordinating sensory processing with cognitive goals (Tabiee et al., 2023; Barry et al., 2002).

Theta Band Connectivity:





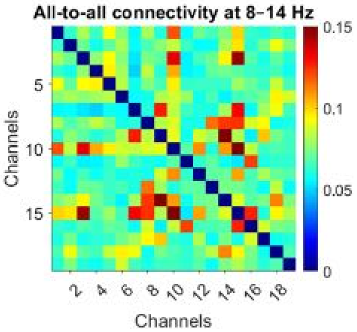


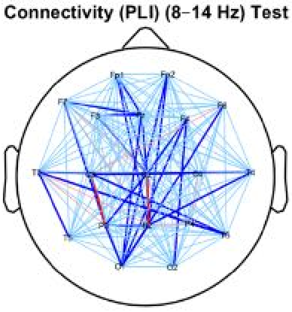
Fields	labels
1	'Fp1'
2	'Fp2'
3	'F7'
4	'F3'
5	'Fz'
6	'F4'
7	'F8'
8	'T3'
9	'C3'
10	'Cz'
11	'C4'
12	'T4'
13	'T5'
14	'P3'
15	'Pz'
16	'P4'
17	'T6'
18	'O1'
19	'O2'

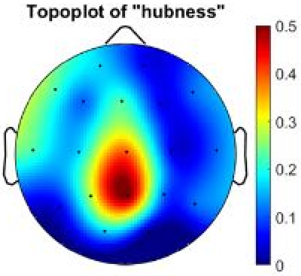
While there is an overall reduced global connectivity in the theta band, several distinct channel pairs showed elevated connectivity values. These increases were localized to temporo-parietal and central midline regions, suggesting focal compensatory connectivity in the context of overall reduced network integration. EEG work in humans shows that mid-frontal theta coupling with fronto-temporo-parietal nodes intensifies when participants prioritise internally held information (turn their focus inward, mind-wandering), encode items in working memory (registering new information into the short-term memory) or manipulate verbal content (Kam et al., 2019; Leicht et al., 2025; Sato et al., 2014). Therefore, the observed enhanced local connectivity in this recording can be interpreted as a compensatory up-recruitment of the networks that support internal attention and language processing.

Alpha Band Connectivity:

In the alpha band, the EEG showed a reduced interhemispheric frontal coherence together with an increased central-to-parietal synchronization. Specifically, connectivity strength was lowest between F8–F3 (channel 4 and channel 8) and F8–F7 (channel 3 and channel 7), indicating weakened alpha-band connectivity across bilateral frontal regions, which are implicated in top-down attentional control, verbal fluency, internal speech processes and executive function (Misselhorn et al., 2019; Tabiee et al., 2023; Schmitt et al., 2022). Conversely, stronger α connectivity along central–parietal axes may signal a sensorimotor–parietal compensatory loop that stabilises limb representations and dampens restlessness, a pattern seen in restless-legs syndrome and in fidgeting phenotypes (Kim et al., 2020; McAuliffe et al., 2020)

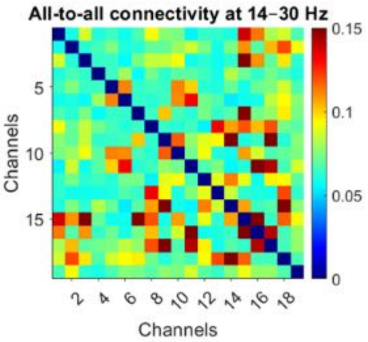


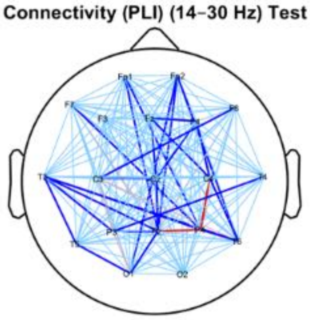


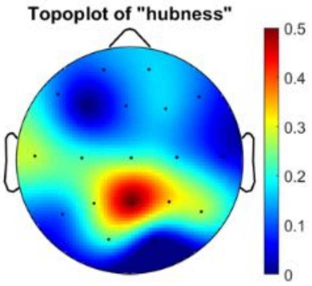


Fields	labels
1	'Fp1'
2	'Fp2'
3	'F7'
4	'F3'
5	'Fz'
6	'F4'
7	'F8'
8	'T3'
9	'C3'
10	'Cz'
11	'C4'
12	'T4'
13	'T5'
14	'P3'
15	'Pz'
16	'P4'
17	'T6'
18	'O1'
19	'O2'

Beta Band Connectivity:





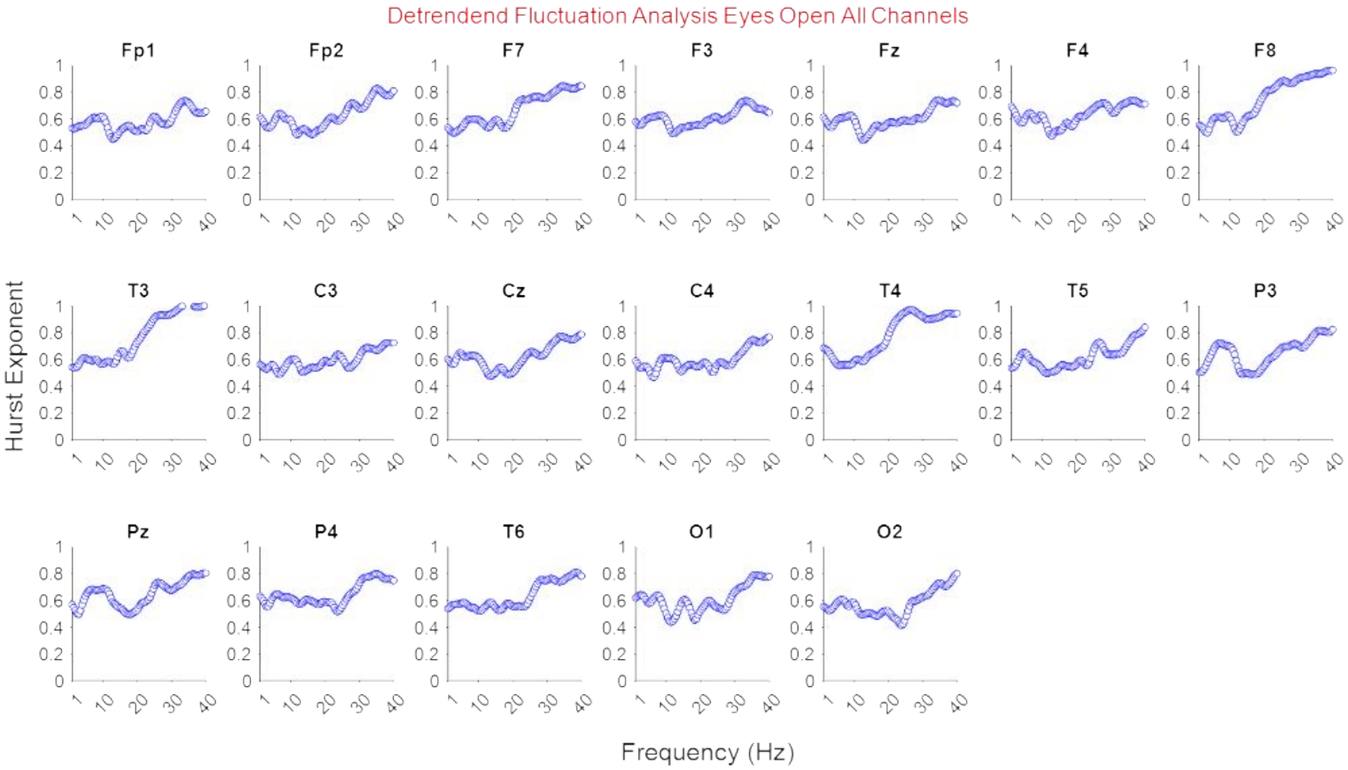


Fields	labels
1	'Fp1'
2	'Fp2'
3	'F7'
4	'F3'
5	'Fz'
6	'F4'
7	'F8'
8	'T3'
9	'C3'
10	'Cz'
11	'C4'
12	'T4'
13	'T5'
14	'P3'
15	'Pz'
16	'P4'
17	'T6'
18	'O1'
19	'O2'

In the beta band (14–30 Hz), the EEG showed a reduced fronto-parietal and interhemispheric frontal synchronization, alongside elevated connectivity within posterior and sensorimotor-parietal regions. Reduced β-band synchrony within frontal and fronto-parietal networks has been documented across several cohorts – dyslexic readers, autistic youth with heightened anxiety/sensory hyper-responsivity, and medication-naïve children with ADHD (Xue et al., 2020; Sarmukadam et al., 2023; Hu et al., 2025) – underscoring the link between attenuated frontal β coupling, executive-language control, and dysregulated arousal. Conversely, increased connectivity between parietal and central regions, that point to posterior hyperconnectivity within sensorimotor-parietal circuits, may reflect a compensatory upregulation of sensorimotor networks, potentially in relation with dysregulated arousal states, heightened internal monitoring, motor overactivation and sleep-onset difficulties (Chung et al., 2017; McAuliffe et al., 2020).

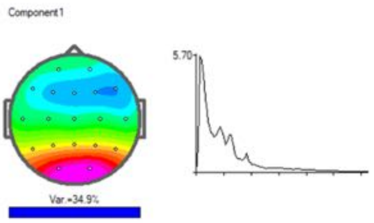
Detrended Fluctuation Analysis

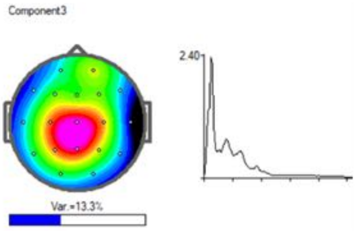
This analysis measures the temporal structure of brain activity over time, specifically looking at how predictable or persistent the signal is. It does so using the Hurst exponent, a value that reflects the presence of long-range temporal correlations (LRTC) in the EEG signal. A Hurst exponent of 0.5 indicates a completely uncorrelated signal, like white noise — where each moment is independent of the last. A Hurst exponent greater than 0.5 reflects persistence in the signal: large fluctuations tend to be followed by large ones, and small by small, suggesting a more stable or predictable pattern over time. Conversely, a Hurst exponent below 0.5 suggests anti-persistent or erratic activity, where large fluctuations are followed by small ones and vice versa, indicating less predictable, more chaotic brain dynamics. In sum, elevated Hurst exponents indicate overstability or rigidity in cortical activity, while lower values may reflect instability or reduced regulatory control in the neural system.

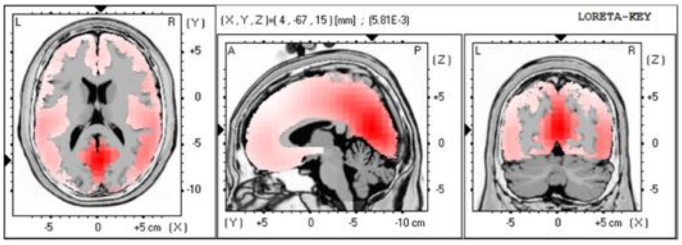


In this analysis, several frontotemporal regions—including F8, F3, T3, and T4—exhibited a notably elevated Hurst exponent in the beta band (13–30 Hz), indicating long-range temporal correlations and persistent oscillatory activity in these frequencies. Beta range LRTC may be interpreted as a marker of cortical over-stability and heightened arousal and these beta LRTC normally decrease with brain maturation and higher cognitive efficiency; abnormally high values therefore imply delayed inhibitory development and reduced executive flexibility (Linkenkaer-Hansen, K., et al 2001; Smit et al., 2011). Elevated beta-Hurst observed in these regions has been linked to hyperarousal, motor rigidity, and resting-state neural persistence, potentially reflecting difficulty disengaging from internally driven activity, hence likely reflects a chronically heightened arousal set-point and over-engagement of sensorimotor-limbic loops involved in movement planning, vigilance and emotion regulation (Colombo et al., 2016; Irrmischer et al., 2018).

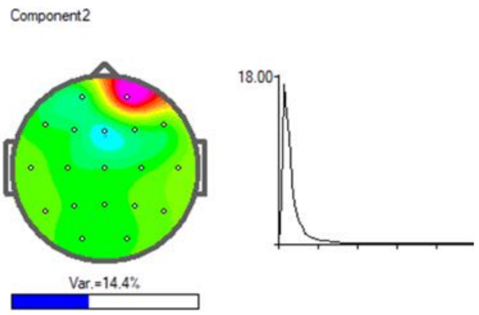
Brain Mapping, ICA (Independent Component Analysis) and LORETA (Low Resolution Brain Electromagnetic Tomography)

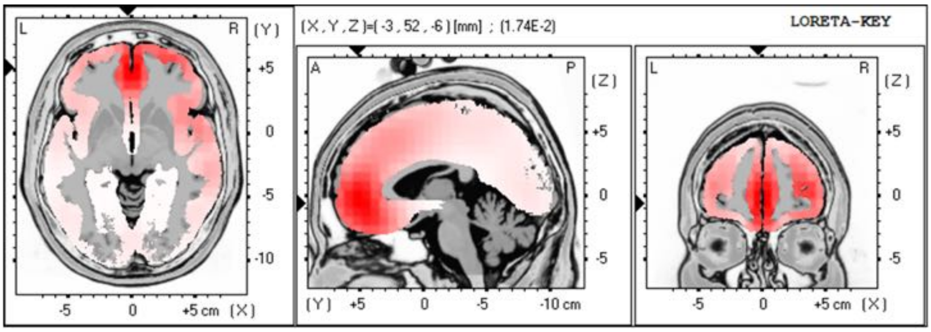




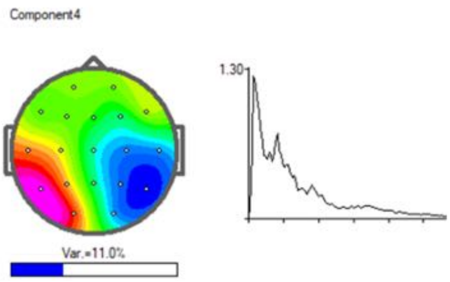


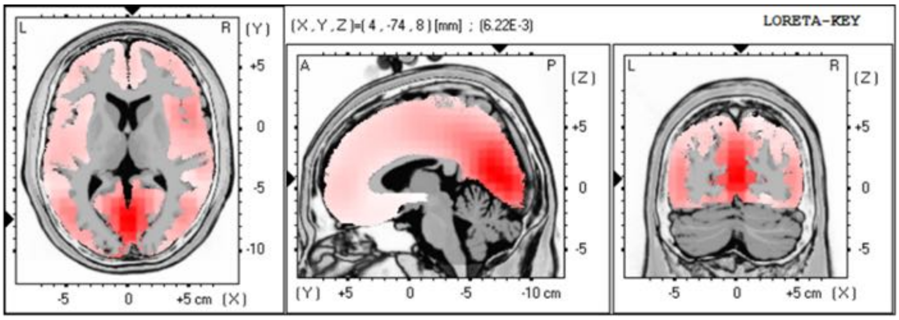
Component 1 and Component 3 together explain 60% of the total signal variance, indicating they capture the majority of the dominant EEG dynamics in this recording. Their distribution is centro-occipital and spans theta/alpha frequency ranges. These two dominant components both project to Brodmann Area 31 located in the posterior cingulate cortex (PCC) and adjacent precuneus. This area is a part of the posterior default mode network (DMN) and involved in internally directed attention, self-referential thinking, emotion–cognition integration. The convergence of both components in BA 31 suggests strong internal mentation or DMN dominance, possibly indicating a state of internally focused attention, reduced external engagement, or mind-wandering. This pattern may be associated with reduced task focus or underarousal, excessive introspection or disengagement.





Component 2 accounted for 14.4% of the EEG signal variance, with a right frontopolar distribution and spectral peak in the low-frequency range (~2–4 Hz). Source localization pointed to Brodmann Area 10 (frontopolar cortex), a region involved in high-level executive function, internal monitoring, and prospective cognition. Elevated low-frequency activity in this area may reflect reduced cortical arousal, internalized attention, slowed top-down processing and cognitive disengagement.





Component 4 accounted for 11.0% of the EEG signal variance, with a posterior midline scalp distribution and spectral power concentrated in the delta–theta range. Source localization identified Brodmann Area 23, part of the PCC, which plays a key role in internally directed attention, memory integration, and resting-state processing. The presence of low-frequency oscillations in this region may reflect a dominance of internally focused cognition and reduced external attentional engagement, consistent with typical default mode network activity during non-task states.

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Appendix A: Cognitive Assessment

The Cognitive Assessment on the following pages is based upon Cambridge Brain Sciences (CBS) Health.

Cambridge Brain Sciences is a leading provider of web-based brain health assessment software for healthcare practitioners (CBS Health) and researchers (CBS Research).

Their proprietary assessments of brain function and brain health have been developed over the past 25 years, taken over 8 million times and used in over 300 studies published in leading peer-reviewed academic journals.

As a result, they maintain and possess one of the world's largest normative databases of cognitive function. The tasks are highly engaging, require no expert technical support to administer and are based on the pioneering work of CBS Chief Scientific Officer, renowned neuroscientist, Dr. Adrian Owen (owenlab.org).

CBS Health is an online brain health assessment service that accurately measures core elements of your cognitive function, including memory, attention, reasoning and verbal abilities.

These measures are important to baseline your cognitive performance and measure progress in these areas through your neurofeedback programme. It should be noted that they are measures of progress, not direct inputs into your neurofeedback plan.

These tests do not diagnose disorders. However, results significantly different from the norm in some tests have been noticed in people with certain disorders. These are identified in the attached table with green ticks ✓.

Note: The table below is meant to be an indicative guide. Cambridge Brain Sciences does not guarantee that any of the tasks within each row will be appropriate for your specific needs.

✓ Green checkmarks indicate that an academic study was published showing that the cognitive function assessed by the task was significantly different in people with that disorder.

✔ Blue checkmarks indicate additional tasks recommended by Cambridge Brain Sciences to assess individuals with the disorders outlined below based on the characteristics and historical use of these tasks.

CORE COGNITIVE AREA	**MEMORY**				**REASONING**				**VERBAL ABILITY**		**CONCENTRATION**	
OUTCOME MEASURE	Visuospatial Working Memory	Spatial Short-Term Memory	Working Memory	Episodic Memory	Mental Rotation	Visuospatial Processing	Deductive Reasoning	Planning	Verbal Reasoning	Verbal Short-Term Memory	Attention	Response Inhibition
TASK	Monkey Ladder	Spatial Span	Token Search	Paired Associates	Rotations	Polygons	Odd One Out	Spatial Planning	Grammatical Reasoning	Digit Span	Feature Match	Double Trouble
Disorder												
Autism			✓		✓		✓	✓	✔			✔
Early Alzheimer’s	✔	✔		✓		✓				✔	✓	✓
Asperger Syndrome			✔		✔		✓	✔	✔		✔	
Non-Alzheimer’s Dementia	✔	✔		✔		✓		✓		✔	✓	
Epilepsy							✓		✔			✓
Parkinson’s		✓	✓	✓		✔		✓	✔		✓	✔
Age-Related Decline	✔	✔		✓		✔	✔		✓	✔		✓
ADHD	✓		✓						✔	✓	✔	✔
PTSD			✔				✔		✔	✓		✔
Schizophrenia		✓	✓				✓	✓		✓		✔
Dyslexia							✔		✔	✓		✔
Stroke	✓		✓	✓		✓			✔			✔
Concussion	✓	✓	✓	✓			✓	✓			✔	✔
Huntington’s Disease		✓	✓					✓			✓	✓
Frontal Lobe		✓	✓	✓			✔	✓	✔			✓
Temporal Lobe			✓	✓								
Depression			✔				✔	✓	✔			✓

BrainTrainUK
Changing Lives With Neurofeedback

Cognitive Assessment Report

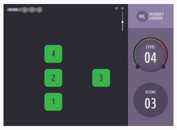
Powered By
CAMBRIDGE BRAIN SCIENCES

Assessment Details

ID:		Tasks Completed:	12
Gender:		Completion Date:	
Date of Birth:		Comparative Group:	

Performance Summary

Monkey Ladder	Visuospatial Working Memory	108
Spatial Span	Spatial Short-Term Memory	104
Token Search	Working Memory	109
Paired Associates	Episodic Memory	102
Rotations	Mental Rotation	108
Polygons	Visuospatial Processing	106
Odd One Out	Deductive Reasoning	105
Spatial Planning	Planning	131
Grammatical Reasoning	Verbal Reasoning	99
Digit Span	Verbal Short-Term Memory	99
Feature Match	Attention	105
Double Trouble	Response Inhibition	109

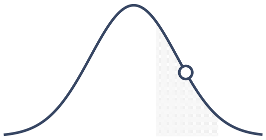


Monkey Ladder

A measure of visuospatial working memory — the ability to remember information about objects in space, and update memory based on changing circumstances.

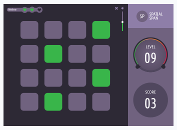
AVERAGE

108 | 70 Percentile



Result is within the AVERAGE range. Common everyday activities associated with visuospatial working memory include:

- Following step-by-step instructions to carry out a task in a few different locations.
- Viewing a route on a map, then following the route from memory.
- Understanding positioning in sports, and carrying out pre-planned plays.
- Viewing a document, then carrying out the written instructions.

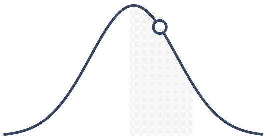


Spatial Span

Measures spatial short-term memory, involved in tasks where nonverbal information needs to be stored and recalled.

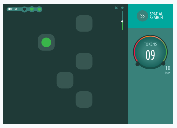
AVERAGE

104 | 60 Percentile



Result is within the AVERAGE range. Common everyday activities associated with spatial short-term memory include:

- Watching somebody perform a task step-by-step, then doing the same task yourself, such as in sports or gym classes.
- Navigating after getting directions from somebody pointing on a map.
- Implementing a strategy you have in memory, like an opening move in chess.
- Remembering positions of cars on the road while you make a difficult driving maneuver.

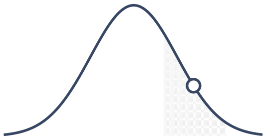


Token Search

Measures working memory — the ability to temporarily hold information in mind and manipulate or update it based on changing circumstances or demands.

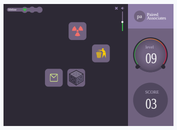
AVERAGE

109 | 73 Percentile



Result is within the AVERAGE range. Common everyday activities associated with working memory include:

- Systematically searching for a lost item in your home.
- Solving a mystery by remembering a set of clues, then rearranging them in your mind to tell a story and form a theory.
- Finding the most efficient way to complete a to-do list of tasks around your home before leaving in the morning.
- Efficiently navigating shifting priorities at work.

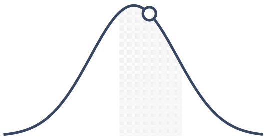


Paired Associates

A measure of episodic memory — the ability to remember specific events, paired with the context in which they occurred.

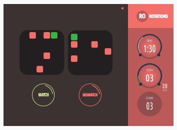
AVERAGE

102 | 56 Percentile



Result is within the AVERAGE range. Common everyday activities associated with episodic memory include:

- Remembering which cupboard you put your groceries in.
- Learning what each button does in a new app or device.
- Remembering who you talked to yesterday, and at what time.
- Following safety procedures by pairing a potentially dangerous situation with warning signs or steps needed to stay safe.

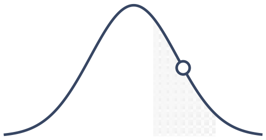


Rotations

Measures the ability to mentally rotate visual representations of objects, required to reason about what objects are, where they are, and where they belong.

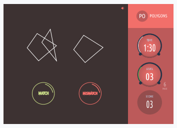
AVERAGE

108 | 69 Percentile



Result is within the AVERAGE range. Common everyday activities associated with mental rotation include:

- Navigating using a map, and knowing which direction you are facing.
- Planning a new layout for a room.
- Finding your way around a city using landmarks.
- Creating or assembling—like when building a deck, or putting together furniture based on a diagram.

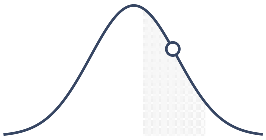


Polygons

A measure of visuospatial processing — the ability to effectively process and interpret visual information.

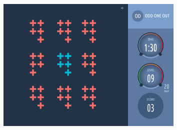
AVERAGE

106 | 65 Percentile



Result is within the AVERAGE range. Common everyday activities associated with visuospatial processing include:

- Creating art, or drawing diagrams.
- Repairing household items by spotting what is wrong with them and applying the right fix.
- Identifying a mistake in a document at work.
- Doing graphic design work or creating a web site.

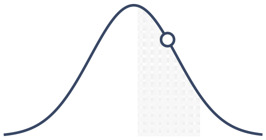


Odd One Out

Measures deductive reasoning — the ability to effectively apply rules to information and arrive at logical conclusions.

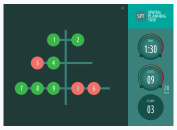
AVERAGE

105 | 63 Percentile



Result is within the AVERAGE **range.** Common everyday activities associated with deductive reasoning include:

- Evaluating a complex argument and deciding if you agree.
- Applying government rules to your finances to properly do your taxes.
- Noticing the details of a story and making inferences beyond what is directly stated—such as a character's emotions, or the story's message.
- Creating effective arguments for a position in a debate or essay.

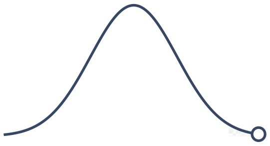


Spatial Planning

A measure of planning — the ability to act with forethought and prepare a sequence of steps to reach a goal.

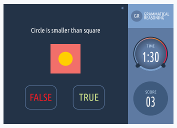
ABOVE AVERAGE

131 | 98 Percentile



Result is within the ABOVE AVERAGE **range.** Common everyday activities associated with planning include:

- Deciding the order of items to pack in a trunk or moving van.
- Organizing your schedule to effectively balance work, chores, and social life.
- Planning where to put your hands and feet when rock climbing.
- Building or assembling furniture without any instructions.

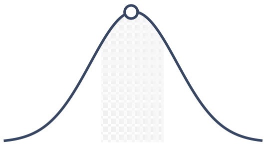


Grammatical Reasoning

Measures verbal reasoning, which is the ability to quickly understand and make valid conclusions about concepts expressed in words.

AVERAGE

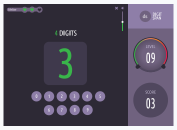
99 | 49 Percentile



Result is within the AVERAGE **range.** Common everyday activities associated with verbal reasoning include:

- Understanding complex everyday speech—e.g., "I didn't know that he wasn't going to show up."
- Giving clear verbal or written instructions to people who report to you at work.
- Reading a contract and understanding what you are agreeing to.
- Texting a clear description of an item to your partner so they can pick it up from the grocery store.

Cognitive Assessment Report

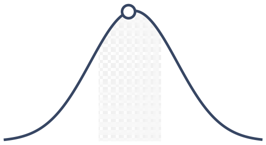


Digit Span

Measures verbal short-term memory capacity, which is needed to hold information in mind and verbally rehearse it until it is needed.

AVERAGE

99 | 48 Percentile



Result is within the AVERAGE range. Common everyday activities associated with verbal short-term memory include:

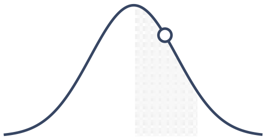
- Understanding long sentences by remembering the beginning of the sentence by the time you get to the end.
- Writing down a phone number or entering credit card information.
- Taking notes during a meeting.
- Remembering all the points you wanted to bring up on a phone call.

Feature Match

A measure of attention — the ability to focus on relevant details or differences.

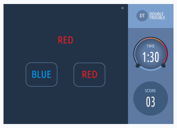
AVERAGE

105 | 62 Percentile



Result is within the AVERAGE range. Common everyday activities associated with attention include:

- Staying focused on a task when it counts, such as when driving.
- Identifying similarities and differences when comparing two things, such as two similar brands of a household product.
- Noticing small interpersonal details, like a partner's haircut, or subtle facial expressions indicating that somebody is upset or bored.

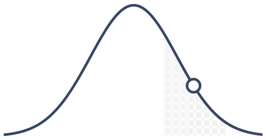


Double Trouble

A measure of response inhibition — the ability to concentrate on relevant information in order to make a correct response despite interference.

AVERAGE

109 | 73 Percentile



Result is within the AVERAGE range. Common everyday activities associated with response inhibition include:

- Keeping your eyes on the road when driving, despite passing distracting signs or people.
- Blocking out background conversations when you're on the phone.
- Inhibiting your emotional gut reaction to a social media post to formulate a more rational response.