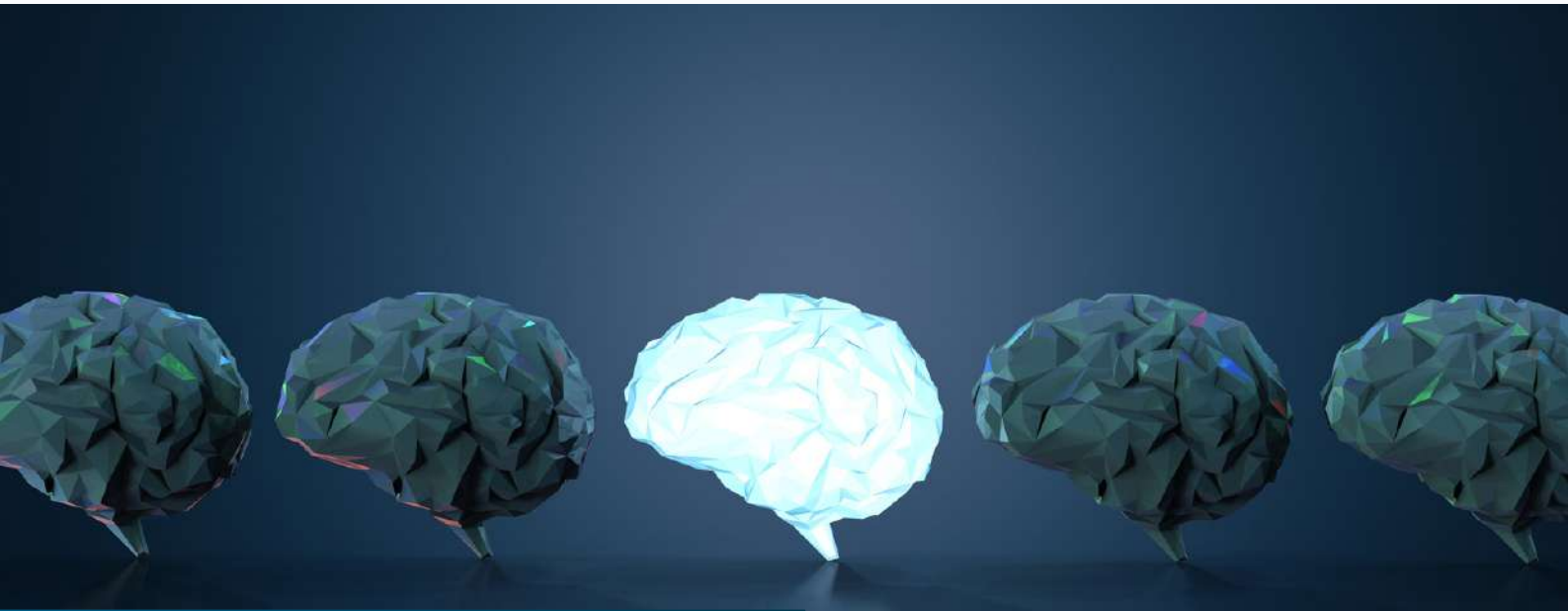




NEURADIANT 1070 & NEUROCATCH® PLATFORM CASE STUDY REPORT





OVERVIEW OF STUDY AND RESULTS

The case study involved the use of a photobiomodulation (PBM) protocol with the **Neuradiant 1070 device** on a healthy individual. The PBM protocol used was set at 70 Hz for 12 minutes at 75% intensity. The individual's brain activity was then recorded using the **NeuroCatch® Platform device**. The NeuroCatch® Platform reports focus on 2 characteristics of brain waves: amplitude (cortical response size) and latency (response speed).

In the context of brain waves, the amplitude refers to the size or height of the waves.

It provides an indication of the strength or intensity of the electrical activity occurring in the brain. Higher amplitudes suggest stronger or more pronounced brain activity. In EEG studies, brainwave amplitude can be related to different states of consciousness. For instance, deep sleep is associated with high-amplitude, slow-frequency waves, while wakefulness is associated with low-amplitude, fast-frequency waves.

OVERVIEW OF STUDY AND RESULTS

Latency refers to the time that elapses between a specific event and the brain's response to that event, as measured by the brain waves. In ERP research, for example, latency might refer to the time between the presentation of a stimulus (like a sound or a light) and the corresponding peak in brain activity.



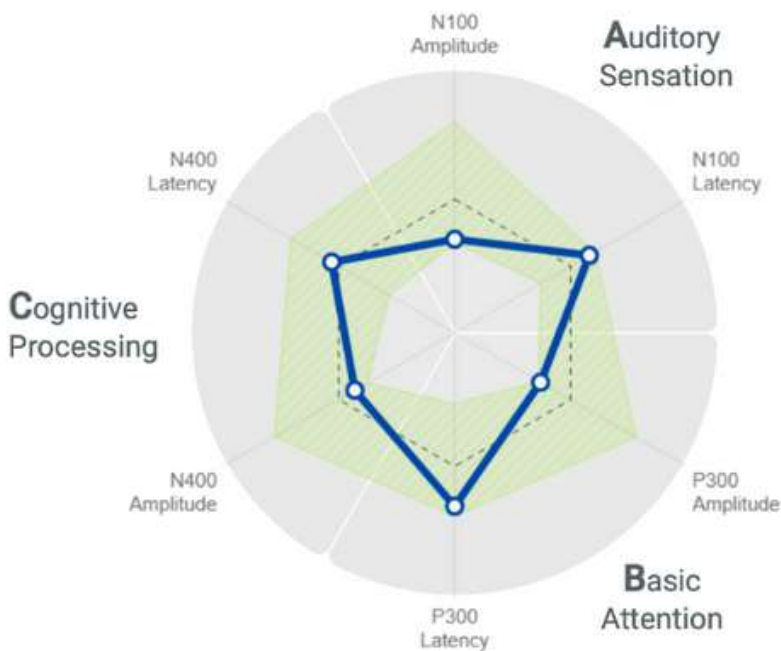
Shorter latencies indicate quicker brain responses, which might suggest more efficient processing. Longer latencies might indicate slower processing or reflect the complexity of the task the brain is performing.

At baseline, smaller amplitudes and slower latencies were observed in the individual's N100 (Auditory Sensation) and P300 (Basic Attention) responses. The N100 response had a smaller amplitude of 2.2 μV and larger latency of 298.00 ms, while the P300 response had a smaller amplitude of 3.9 μV and a larger latency of 320.00 ms. The Cognitive Processing (N400) showed a smaller amplitude of 1.3 μV and an average latency of 440.00 ms. These baseline measurements fell within the reference range, which represents scan results from a general population sample.



Client Name: Balraj Neuronic Project
 Client ID: Balraj-Neuronic
 Scan 1 (Intake)
 12/Jun/2023 9:24AM
 Single Scan Report
 Not for Diagnostic Use

Brain Vital Signs



The radar plot

Brain Vital Signs are presented in a radar plot with multiple data points and variation between them plotted on the same scale, respective to a reference database.

Reading the data points

Data points towards the outside of the radar represent larger amplitudes and faster latencies.



Data points towards the inside of the radar represent smaller amplitudes and slower latencies.

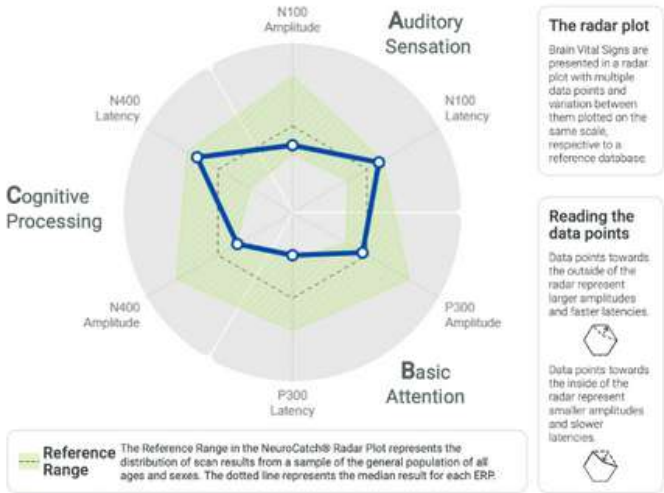


Reference Range The Reference Range in the NeuroCatch® Radar Plot represents the distribution of scan results from a sample of the general population of all ages and sexes. The dotted line represents the median result for each ERP.



Client Name: Balraj Neuronic Project
 Client ID: Balraj-Neuronic
 Scan 3 (Mid Treatment)
 12/Jan/2023 11:25AM
 Single Scan Report
 Not for Diagnostic Use

Brain Vital Signs



Factors Affecting Outcomes



Answer Indicators: ✓ 4.4 Yes
 These icons indicate the answer provided by the client during the pre-scan survey.

Change Indicators: 👎 👎 👎
 These icons indicate that the client's answer was more, less, or the same as a typical day.

On Day 1, after completing the first PBM protocol, the latency of Basic Attention (P300) waveform was 318.00 ms, showing no significant changes from baseline values. The amplitude of Cognitive Processing (N400) was also out of range at 1.23 μ V, smaller than average.

Scan Results

		Result	Reference Range	In Range
Auditory Sensation	N100 Amplitude	2.75 μ V	2-8.3 μ V	✓
	N100 Latency	78.00 ms	74-118.8 ms	✓
Basic Attention	P300 Amplitude	4.25 μ V	2.2-10.3 μ V	✓
	P300 Latency	318.00 ms	188-314.4 ms	✗
Cognitive Processing	N400 Amplitude	1.23 μ V	1.3-3.9 μ V	✗
	N400 Latency	366.00 ms	327.6-596.4 ms	✓

✓ Within reference range ✗ Outside reference range

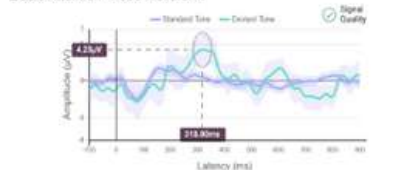


Client Name: Balraj Neuronic Project
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 Scan 3 (Mid Treatment)
 12/Jan/2023 11:25AM
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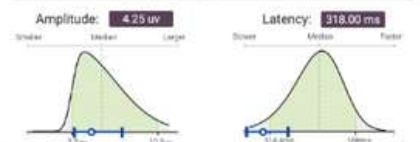


Client Name: Balraj Neuronic Project
 Client ID: Balraj-Neuronic
 Scan 3 (Mid Treatment)
 12/Jan/2023 11:25AM
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Basic Attention - P300 Waveform



How to interpret the waveform:
 The dotted shape identifies the ERP component of interest. The numbers in the boxes represent the exact amplitude and latency result from this scan, and the size of the circle indicates the estimated variability of the result. If no ERP was detected, this is either due to poor signal quality or no result could be identified.

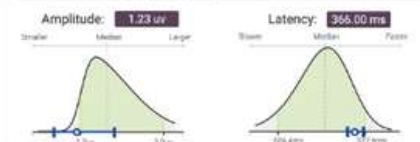


How to interpret the bell curves:
 The bell curves show the distribution of amplitude and latency values obtained from our reference database. The higher the bell curve, the more people scored within that range. The green shaded area shows where the majority of all respondents scored with this waveform. indicates the median (50th percentile) response. Results towards the left of the curve represent larger amplitudes and slower latencies, whereas results towards the right represent larger amplitudes and faster latencies. The blue circle indicates the exact result from this scan, and the "range" shows an estimate of the variability.

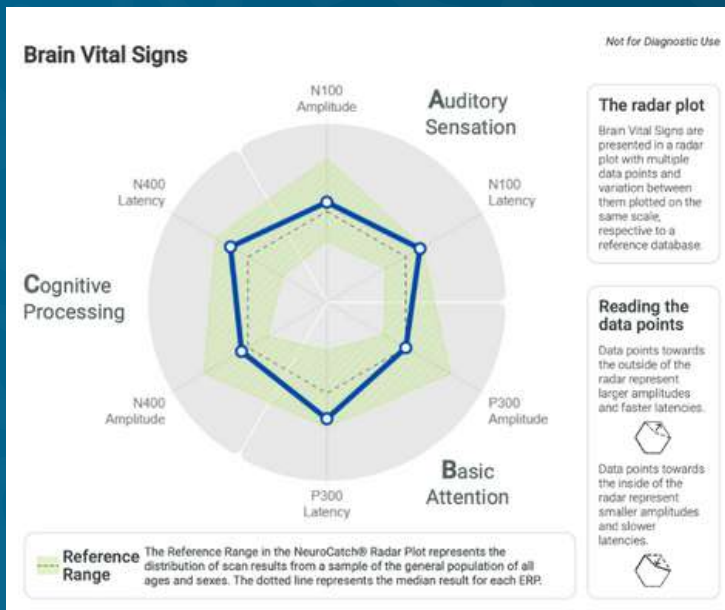
Cognitive Processing - N400 Waveform



How to interpret the waveform:
 The dotted shape identifies the ERP component of interest. The numbers in the boxes represent the exact amplitude and latency result from this scan, and the size of the circle indicates the estimated variability of the result. If no ERP was identified, this is either due to poor signal quality or a peak could not be identified.

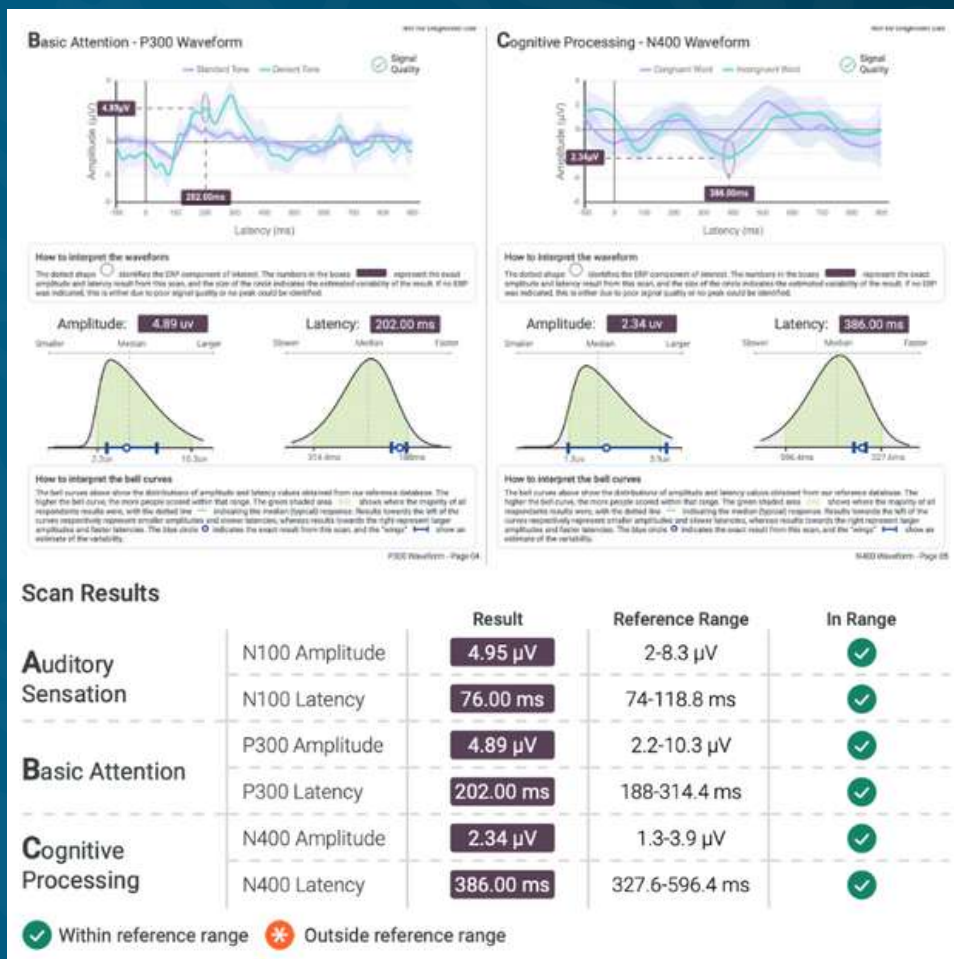


How to interpret the bell curves:
 The bell curves show the distribution of amplitude and latency values obtained from our reference database. The higher the bell curve, the more people scored within that range. The green shaded area shows where the majority of all respondents scored with this waveform. indicates the median (50th percentile) response. Results towards the left of the curve represent larger amplitudes and slower latencies, whereas results towards the right represent larger amplitudes and faster latencies. The blue circle indicates the exact result from this scan, and the "range" shows an estimate of the variability.



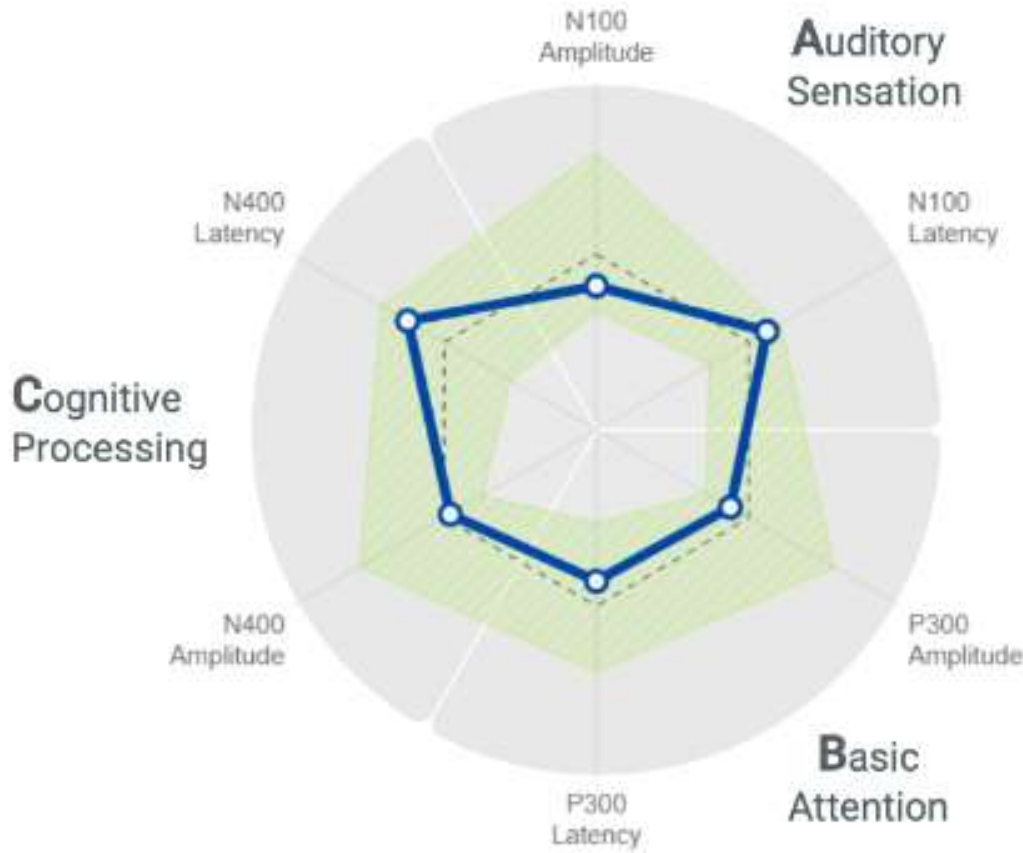
The individual proceeded to use the Neuradiant 1070 once a day, 5 days a week. After 14 days of PBM intervention, notable improvements were seen. The Basic Attention (P300) showed an amplitude of 4.89 μ V, falling within the reference range and close to average. Its latency had also improved to 202.00 ms.

The Cognitive Processing (N400) showed an amplitude of 2.34 μ V and a latency of 386.00 ms, both in the reference range. The Auditory Sensation (N100 Waveform) was also reported to be in range.



Not for Diagnostic Use

Brain Vital Signs



The radar plot

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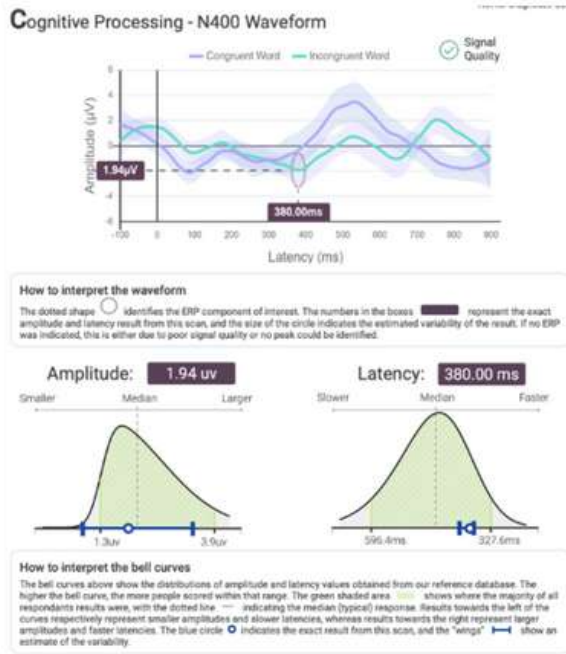
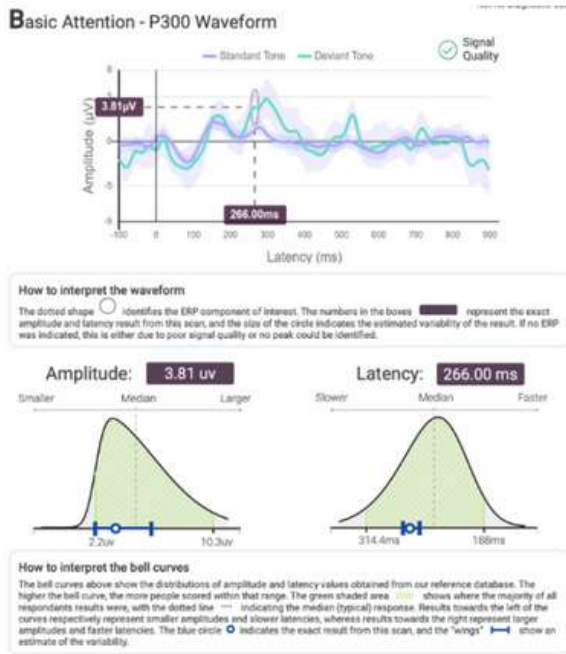
Reference Range

The Reference Range in the NeuroCatch® Radar Plot represents the distribution of scan results from a sample of the general population of all ages and sexes. The dotted line represents the median result for each ERP.

Scan Results

		Result	Reference Range	In Range
Auditory Sensation	N100 Amplitude	3.07 μ V	2-8.3 μ V	✓
	N100 Latency	82.00 ms	74-118.8 ms	✓
Basic Attention	P300 Amplitude	3.81 μ V	2.2-10.3 μ V	✓
	P300 Latency	266.00 ms	188-314.4 ms	✓
Cognitive Processing	N400 Amplitude	1.94 μ V	1.3-3.9 μ V	✓
	N400 Latency	380.00 ms	327.6-596.4 ms	✓

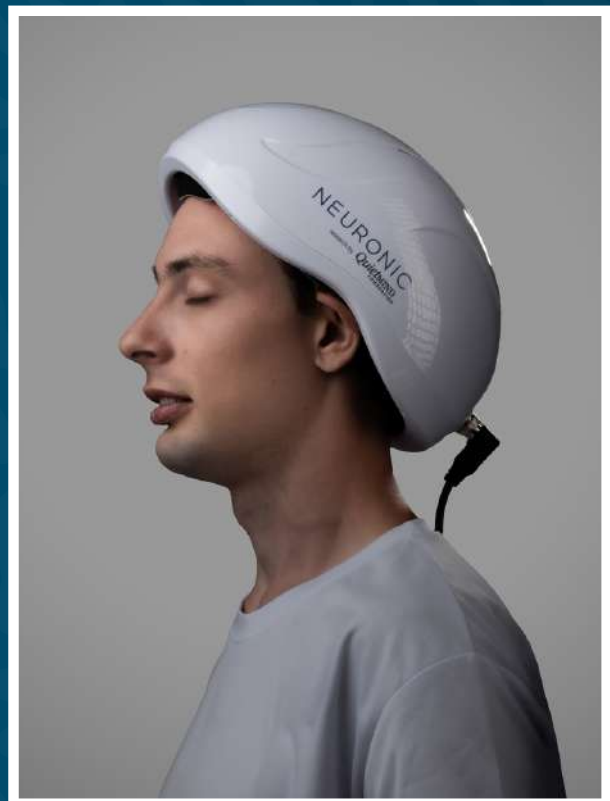
✓ Within reference range ✖ Outside reference range



By Day 21, further progress was recorded. The Basic Attention (P300) amplitude was 3.81 μ V, within the reference range and close to average, and the latency was 266.00 ms. The Cognitive Processing (N400) showed an amplitude of 1.94 μ V and a latency of 380.00 ms, both in the reference range and closer to the average. The Auditory Sensation (N100 Waveform) remained within the reference range.

Overall, the use of the Neuradiant 1070 device and the PBM protocol showed changes in brain activity over time. The changes appeared to show trends towards improved brain function, with measurements moving closer to average values over the 21-day period.

Analysis of the NeuroCatch reports shows a clear improvement in cognitive capabilities. From an initial below-average cognitive processing speed of 440 ms at baseline, there was a marked improvement after using the Neuradiant 1070 device. By Day 14, the individual achieved above-average speeds, which was maintained through Day 21. Unlike many devices that offer a brief spike in results only to revert back, the Neuradiant showed consistent benefits over four weeks.



Visit the Neuronic website by scanning the QR code



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& NEUROCATCH® PLATFORM**
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