# Research Initiative to Evaluate the Effect of the SafeZone-EM™ on Cognitive Function as Measured by the NeuroCatch®

***Introduction:***
The purpose of this ongoing study is to evaluate the influence of the SafeZone-EM™ device on brain function, using the NeuroCatch® electroencephalography (EEG) platform.

The NeuroCatch® Platform is based on the research of **Ryan D'Arcy, Ph.D.,** a Canadian neuroscientist, and full tenured professor with appointments at both Simon Fraser University and the University of British Columbia. It is an industry-leading medical device that offers an objective evaluation of brain activity, acquired using **event-related potentials (ERPs)**, for objective evaluation of cognitive function.

***Method:***
The method used in this study involves measuring brain activity of test subjects, using NeuroCatch, in the presence or absence of the normalizing electromagnetic field produced by the SafeZone-EM, using a *back-to-back* protocol.

***Results:***
Prior experience with *back-to-back* testing using NeuroCatch has typically shown a *decline* in performance, likely attributable to fatigue.

In contrast, preliminary back-to-back results with the SafeZone turned ON, following a scan with the SafeZone OFF, demonstrate a measurable *improvement* in cognitive function:

1. Reduced 'LATENCY' (increased *speed* of processing) was observed in most cases.
2. Reduced 'AMPLITUDE' was similarly demonstrated in many cases, especially for subjects with a history of traumatic brain injury or ADD/ADHD, indicating a moderating effect on the overstimulated, so-called *'noisy brain'*.

Typical results can be reviewed on the **NeuroCatch Example Reports** tab. These illustrate responses that were observed in a majority of cases. Note that the second test (Scan 2, SafeZone ON, **GREEN LINE**), demonstrates a lower *'Latency'* value (faster processing speed), while the '*Brain Vital Signs'* graphics on page 2, show improved patterns, according the 'Reference Range' (**GREEN SHADED AREA**) as compared to Scan 1 with the SafeZone OFF (**BLUE LINE**).

*Not for Diagnostic Use*

# Multi-Scan Report

## Client Information

YOB: **1977 (46 y/old)**
Sex: **Female**
Language(s): **English**
Handedness: **Right**
Occupation: **[redacted]**
Education: **College Or University**
Chronic Neurological Conditions:
**Concussion**

## Scan Information

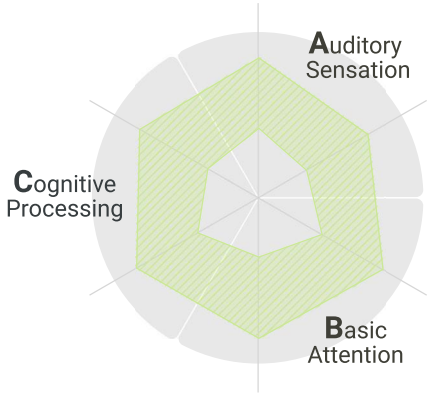
**Scan 1:** 01/Aug/2023 11:41AM (Other)
**Scan 2:** 01/Aug/2023 11:59AM (Other)

## Scan Results

| | | SafeZone OFF Scan 1 | SafeZone ON Scan 2 |
|---|---|---|---|
| **A**uditory Sensation | N100 Amplitude | 7.91 µV ✓ | 5.68 µV ✓ |
| | N100 Latency | 106.00 ms ✓ | 96.00 ms ✓ |
| **B**asic Attention | P300 Amplitude | 16.85 µV * | 8.18 µV ✓ |
| | P300 Latency | 278.00 ms ✓ | 248.00 ms ✓ |
| **C**ognitive Processing | N400 Amplitude | 3.94 µV * | 2.85 µV ✓ |
| | N400 Latency | 454.00 ms ✓ | 402.00 ms ✓ |

✓ Within reference range  * Outside reference range

### The ABCs of the NeuroCatch® Platform: Understanding Brain Vital Signs




**Auditory Sensation (N100)** is measured by recording the timing and size of the brain response to the tones heard during the test.

**Basic Attention (P300)** is measured by recording the timing and size of the brain response to unexpected tones heard during the test.

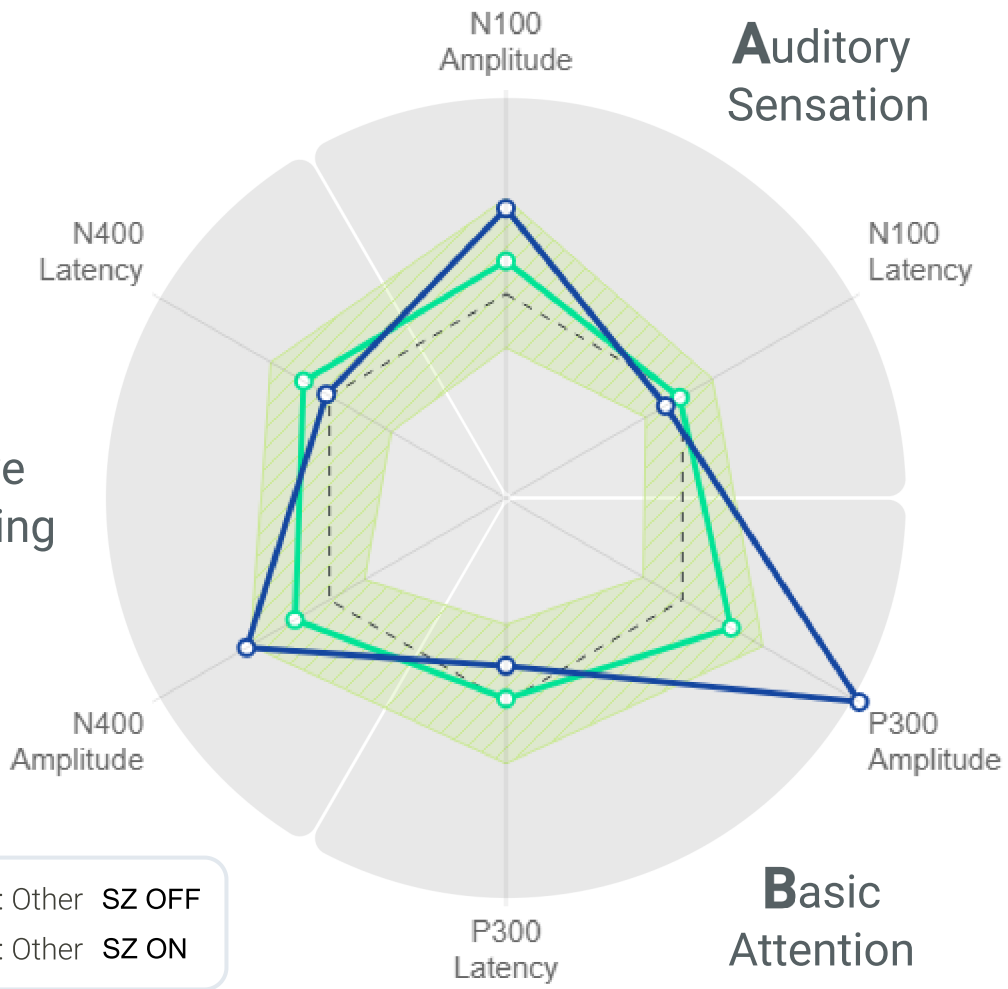
**Cognitive Processing (N400)** is measured by recording the timing and size of the brain response to matching and mismatching word pairs.

NEUROCATCH® PLATFORM

Client Name: [redacted]
Client ID: 062
Multi-Scan Comparison: 01-Aug-2023

*Not for Diagnostic Use*

# Brain Vital Signs




Scan 1: Other SZ OFF
Scan 2: Other SZ ON

**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.

## 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.

## Factors Affecting Outcomes

| | Mood | Sleep | Caffeine | Alcohol | Nicotine | Psycho-actives | Medication |
|---|---|---|---|---|---|---|---|
| **Scan 1** | Good | 6-8 | None | None | No | No | No |
| **Scan 2** | Good | 6-8 | None | None | No | No | No |
| - | - | - | - | - | - | - | - |

## Factors over time

These factors are known to affect cognitive performance. Take them into consideration as you compare results over time.

Medications:

NEUROCATCH® PLATFORM

Client Name: [redacted]
Client ID: 048
Multi-Scan Comparison: 15-Apr-2023

*Not for Diagnostic Use*

# Multi-Scan Report

## Client Information

YOB: **1957 (66 y/old)**
Sex: **Female**
Language(s): **English**
Handedness: **Both**
Occupation: **Retired**
Education: **College Or University**
Chronic Neurological Conditions: **Concussion**

## Scan Information

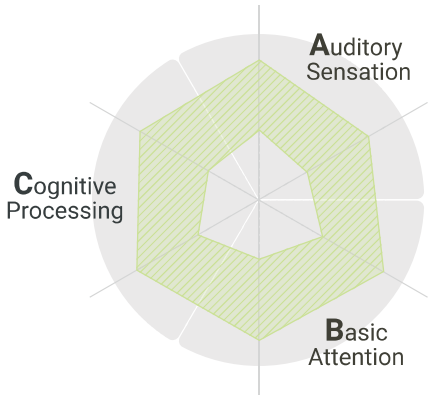
**Scan 1:** 15/Apr/2023 11:56AM (Other)
**Scan 2:** 15/Apr/2023 12:18PM (Other)

## Scan Results

| | | SafeZone OFF | SafeZone ON |
|---|---|---|---|
| | | Scan 1 | Scan 2 |
| **A**uditory Sensation | N100 Amplitude | 6.82 µV ✓ | 4.10 µV ✓ |
| | N100 Latency | 92.00 ms ✓ | 80.00 ms ✓ |
| **B**asic Attention | P300 Amplitude | 4.47 µV ✓ | 2.99 µV ✓ |
| | P300 Latency | 292.00 ms ✓ | 234.00 ms ✓ |
| **C**ognitive Processing | N400 Amplitude | 2.45 µV ✓ | 2.11 µV ✓ |
| | N400 Latency | 648.00 ms * | 442.00 ms ✓ |

✓ Within reference range  * Outside reference range

### The ABCs of the NeuroCatch® Platform: Understanding Brain Vital Signs

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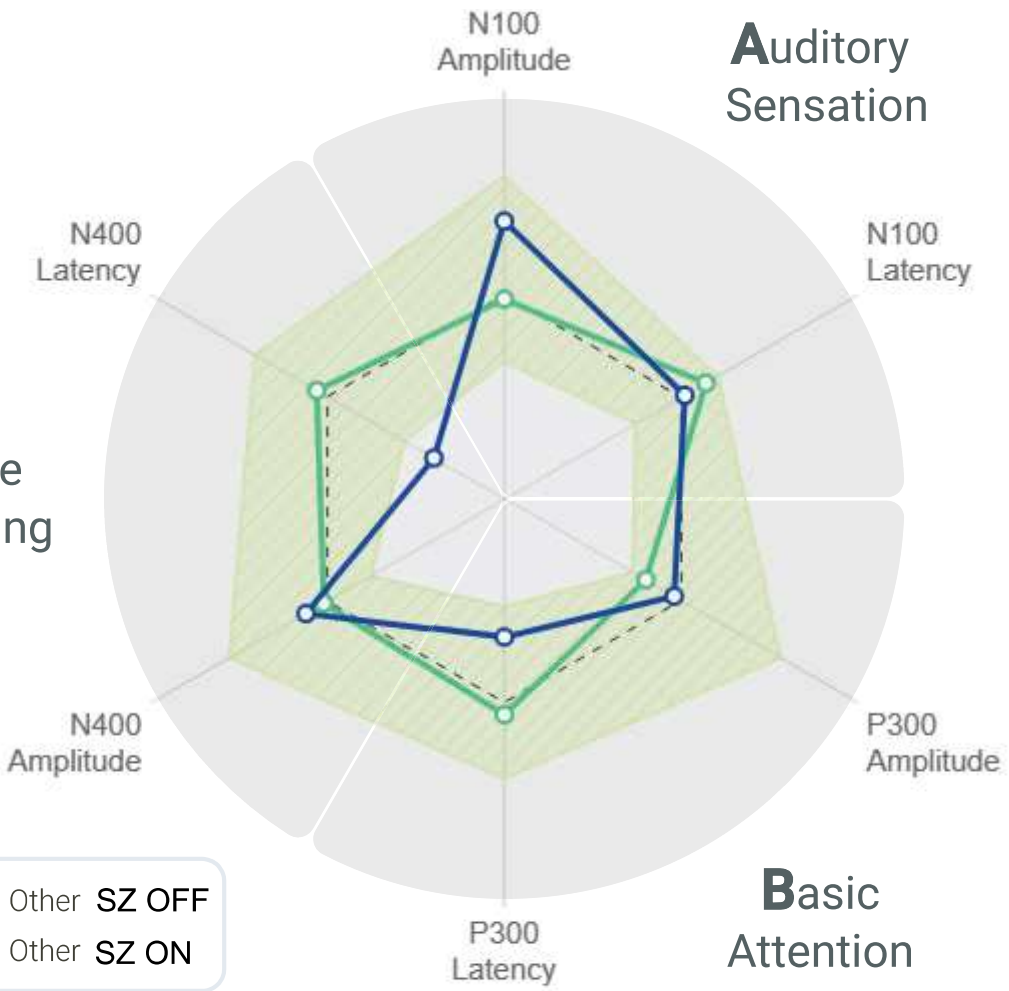
# Brain Vital Signs

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## Factors Affecting Outcomes

| | Mood | Sleep | Caffeine | Alcohol | Nicotine | Psycho-actives | Medication |
|---|---|---|---|---|---|---|---|
| **Scan 1** | Good | <4 | None | None | No | No | No |
| **Scan 2** | Good | <4 | None | None | No | No | No |
| - | - | - | - | - | - | - | - |

## Factors over time

These factors are known to affect cognitive performance. Take them into consideration as you compare results over time.

Medications: