INTRODUCTION

Key words: P300, extracranial, closed head injury, intracranial pressure

Introduction: The P300 is a well-known component of the event-related potential (ERP) response, which is elicited by rare and infrequent stimuli. The P300 amplitude is known to be modulated by a variety of factors, including cognitive load, attention, and stimulus predictability. The P300 has been extensively used in clinical settings to assess the integrity of the brain's cognitive and sensory processing systems.

The aim of this study was to investigate the relationship between P300 amplitude and extracranial strain in concussion patients.

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Study overview: This study was conducted in 127 patients with a history of concussion.

In the Visual Oddball Paradigm

P300 and Extraversion

Stigma Psychology, 2, 2010, 1
Apparatus and Procedure

An example of a recorded P300-wave (above) and a superimposed P3-wave (below) in the visual oddball paradigm with contralateral electrical stimuli. 

Results

The Group OAE-S for the E3/FA

Questionnaires

Scores (1 to 10) 26% N = 27

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Apparatus and Procedure

At the between-element and within-element, each

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Apparatus and Procedure

At the between-element and within-element, each
### Table 1: Mean and Standard Deviation of P300-Wave Amplitudes and latencies

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean ± SD</th>
<th>Waveform</th>
<th>P300 Latency</th>
<th>P300 Amplitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4.9 ± 1.2</td>
<td>Frontal</td>
<td>200 ± 30</td>
<td>6.5 ± 0.8</td>
</tr>
<tr>
<td>Experimental</td>
<td>5.4 ± 1.8</td>
<td>Occipital</td>
<td>220 ± 40</td>
<td>7.2 ± 1.1</td>
</tr>
</tbody>
</table>

*Note: *The table above shows the mean and standard deviation of P300-wave amplitudes and latencies for different groups. The P300 wave is a component of the event-related potential (ERP) that occurs in response to unexpected stimuli. It is typically measured as a positive waveform and is associated with the processes of attention, memory, and decision making.*

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### Figure 1: Schematic of Experiment Design

- **Participants:** 50 subjects were divided into two groups: control and experimental.
- **Stimuli:** Auditory stimuli were presented at random intervals, and the participants were asked to respond to a specific stimulus.
- **Recording:** EEG signals were recorded using scalp electrodes placed over the occipital, frontal, and parietal regions.
- **Analysis:** ERP analysis was performed using EEG signal processing techniques.

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### ERP Results

The results indicated significant differences in P300-wave amplitude and latency between the control and experimental groups. The experimental group showed a significant increase in P300-wave amplitude and latency compared to the control group, suggesting enhanced cognitive processing in the experimental condition. These findings are consistent with previous studies on the effects of attention and memory on P300 waves.
The relationship between P300 and cognitive load was expected to be a complex one, involving interactions between various factors. The authors report that the P300 amplitude was higher in the condition of high cognitive load compared to the low load condition. This finding is consistent with previous research showing that cognitive load increases the P300 amplitude.

The authors also discuss the implications of their findings for understanding the neural mechanisms underlying cognitive processes. They suggest that the P300 component may be a useful biomarker for assessing cognitive load and its impact on brain function.

In conclusion, the study contributes to the growing body of research on the relationship between cognitive load and brain activity, providing new insights into the neural correlates of cognitive processing under different load conditions. Further research is needed to understand the underlying mechanisms and to explore the clinical and practical implications of these findings.


Familiarity and novelty are two fundamental dimensions of visual experience that have been shown to influence a wide range of visual processes, such as attention, memory, and perception. However, the specific mechanisms underlying these effects are still not fully understood.

In this study, we investigated the role of familiarity and novelty in the perception and processing of visual stimuli using a novel psychophysical framework. We found that high familiarity and low novelty were associated with faster and more accurate responses, suggesting that these factors can influence the processing of visual information.

These findings have implications for the study of visual attention and memory, as they suggest that familiarity and novelty play a critical role in shaping visual processing. Further research is needed to elucidate the specific mechanisms underlying these effects and to understand how they interact with other factors, such as context and cognitive load.