

研究業績 英文表記

和文	
表題	文字と絵を用いた視覚認知の違いによる記憶パフォーマンスへの影響
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英文	
Title	Differences in Word- and Picture-Based Visual Memory Affect Memory Performance
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Abstract	<p>Background/Objectives: Word- and picture-based visual memory are negatively correlated: improving one reduces the other. Pictures are supposedly easier to remember than words because visual objects and scenes can capture attention more effectively, resulting in highly detailed memory representations. However, the mechanisms underlying this phenomenon remain unclear, and the trade-off between these two memory types is not fully understood. Therefore, this study investigated the influence of differences in visual recognition by focusing on word and picture stimuli.</p> <p>Methods: Electroencephalography (EEG) activity in 21 healthy young adults (9 women and 12 men, aged 20.1 ± 1.30 years) during memory tasks involving four conditions—pictures, hiragana, katakana, and kanji—was assessed.</p> <p>Results: The picture condition exhibited the highest EEG activity, followed by the kanji, hiragana, and katakana conditions. Further analysis revealed a tendency for significantly lower R-temporal α, R-occipital β, and R-occipital high-γ waves during picture memorization compared to the other conditions, and significantly higher central low-γ waves. However, no significant differences were observed during the recall process under any condition.</p> <p>Conclusions: EEG power levels, particularly R-temporal lower α, R-occipital lower β, and high-γ waves, served as indicators of memory performance. Picture presentation streamlined brain activity and can thus potentially enhance memory performance. Our findings may inform the development of targeted management strategies for individuals with dementia.</p>
keyword	Visual Perception, Memory, Electroencephalography, Brain Function, Neuroimaging

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