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A more generalized fear response after a daytime nap

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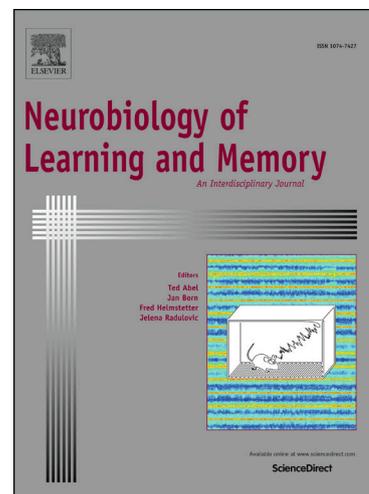
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Title: A more generalized fear response after a daytime nap

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Abstract

The aim of this study was to examine how a daytime nap affected the consolidation of fear learning. Participants first underwent fear conditioning during which they were exposed to a large and a small circle. One of these was repeatedly paired with an electric shock (making it the CS+), whereas the other circle was never paired with the shock (the CS-). After a delay interval containing either a nap or wake, participants again viewed the CS+ and the CS- intermixed with eight novel circles that varied in size between the two stimuli seen before, as well as a blue triangle that served as a novel stimulus without prior fear relevance. We examined both fear retention (the difference between the CS+ and the CS-) as well as fear generalization (responses to the novel stimuli based on their similarity to the original CS+). Contrary to previous studies, results from the participants who acquired a differentiated fear response during the acquisition phase revealed that the wake group showed significantly larger skin conductance responses to the CS+ compared to the CS-, whereas no such difference was present in the sleep group. These results were not driven by differences in explicit memory or by differences in general reactivity. Analyzing responses to the novel stimuli revealed a tendency towards a more generalized response in the sleep group, with no differences between the CS+ and any other stimulus, whereas the wake group showed increased responses to the stimuli depending on their similarity to the original CS+. This effect was however only present when controlling for baseline differences in worry.

Keywords: Sleep; Fear Conditioning; Fear Generalization; Emotional Memory; Skin Conductance Responses

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