

Accepted Manuscript

Reward anticipation modulates the effect of stress-related increases in cortisol on episodic memory

Jörn A. Quent, Andrew M. McCullough, Matt Sazma, Oliver T. Wolf, Andrew P. Yonelinas

PII: S1074-7427(17)30192-2
DOI: <https://doi.org/10.1016/j.nlm.2017.11.007>
Reference: YNLME 6758

To appear in: *Neurobiology of Learning and Memory*

Received Date: 4 July 2017
Accepted Date: 15 November 2017

Please cite this article as: Quent, J.A., McCullough, A.M., Sazma, M., Wolf, O.T., Yonelinas, A.P., Reward anticipation modulates the effect of stress-related increases in cortisol on episodic memory, *Neurobiology of Learning and Memory* (2017), doi: <https://doi.org/10.1016/j.nlm.2017.11.007>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Reward anticipation modulates the effect of stress-related increases in cortisol on episodic memory

*Jörn A. Quent**

Andrew M. McCullough†

Matt Sazma‡

Oliver T. Wolf§

Andrew P. Yonelinas¶

14 October 2017

Abstract

When acute stress is experienced shortly after an event is encoded into memory, this can slow the forgetting of the study event, which is thought to reflect the effect of cortisol on consolidation. In addition, when events are encoded under conditions of high reward they tend to be remembered better than those encoded under non-rewarding conditions, and these effects are thought to reflect the operation of the dopaminergic reward system. Although both modulatory systems are believed to impact the medial temporal lobe regions critical for episodic memory, the manner, and even the extent, to which these two systems interact is currently unknown. To address this question in the current study, participants encoded words under reward or non-reward conditions, then one half of the participants were stressed using the social evaluation cold pressor task and the other half completed a non-stress control task. After a two-hour delay, all participants received a free recall and recognition memory test. There were no significant effects of stress or reward on overall memory performance. However, for the non-reward items, increases in stress-related cortisol in stressed participants were related to increases in recall and increases in recollection-based recognition responses. In contrast, for the reward items, increases in stress-related cortisol were not related to increases in memory performance.

*Department of Cognitive Psychology, Ruhr-University Bochum, Universitätsstr. 150, D-44780 Bochum, Germany

†University of California, Davis, Department of Psychology, One Shields Avenue, Davis, CA 95616, USA

‡University of California, Davis, Department of Psychology, One Shields Avenue, Davis, CA 95616, USA

§Department of Cognitive Psychology, Ruhr-University Bochum, Universitätsstr. 150, D-44780 Bochum, Germany

¶University of California, Davis, Department of Psychology, One Shields Avenue, Davis, CA 95616, USA

Download English Version:

<https://daneshyari.com/en/article/7298926>

Download Persian Version:

<https://daneshyari.com/article/7298926>

[Daneshyari.com](https://daneshyari.com)