



CharitéCentrum für Neurologie, Neurochirurgie und Psychiatrie

Charité | Campus Mitte | 10117 Berlin

Department of Psychiatry and Psychotherapy
Head of Department: Prof. Dr. Dr. Andreas Heinz

To

Editor-in-chief of *Psychoneuroendocrinology*

Robert Dantzer, DVM, PhD, Houston, Texas

Lara Wieland, M. Sc.
E-Mail: lara.wieland@charite.de
Tel. +49-30-450 517399
Homepage: www.charite.de/psychiatrie

20 April, 2022

Dear Dr. Dantzer,

We herewith submit our manuscript entitled **Acute stress alters probabilistic reversal learning in healthy participants**, which we would kindly ask you to consider for publication in *Psychoneuroendocrinology*.

We used functional MRI (fMRI) informed by computational modeling in a within-subjects design of $n = 28$ healthy male human volunteers to investigate the effect of acute psychosocial stress on flexible behavioral adaptation. In our probabilistic reversal learning paradigm we found a slight increase of correct response rates in our participants under acute psychosocial stress, reflected in altered choice stochasticity and a whole-brain-correctable neural effect of stress in win trials.

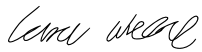
Previous studies found that acute stress can have beneficial as well as detrimental effects on decision-making, depending on type of stressor, paradigm and study sample. For the first time, our study design allows for a fine-grained computational analysis of intra- and interindividual differences in reversal learning under stress and its neural correlates. Understanding the effects of stress on decision-making is crucial to improve our mechanistic understanding of healthy behavioral adaptation and lays the foundation to investigate how maladaptive behavior in psychiatric illness is developed and maintained.

We are confident that the current study significantly contributes to the understanding of learning under acute stress. We believe that the results are of great interest for readers of *Psychoneuroendocrinology*.

No work resembling the enclosed article has been published or is being submitted for publication elsewhere. We have each made a substantial contribution to qualify for authorship. We have disclosed all financial support for our work and declare that there are no conflicts of interest for any of the authors.

We hope that you will find the manuscript suitable for publication in *Psychoneuroendocrinology*.

Sincerely on behalf of all authors,

A handwritten signature in black ink, appearing to read 'Lara Wieland', written in a cursive style.

Lara Wieland