

# IMPAIRMENT OF AVERSIVE EPISODIC MEMORIES DURING COVID-19 PANDEMIC: THE IMPACT OF EMOTIONAL CONTEXT ON MEMORY PROCESSES

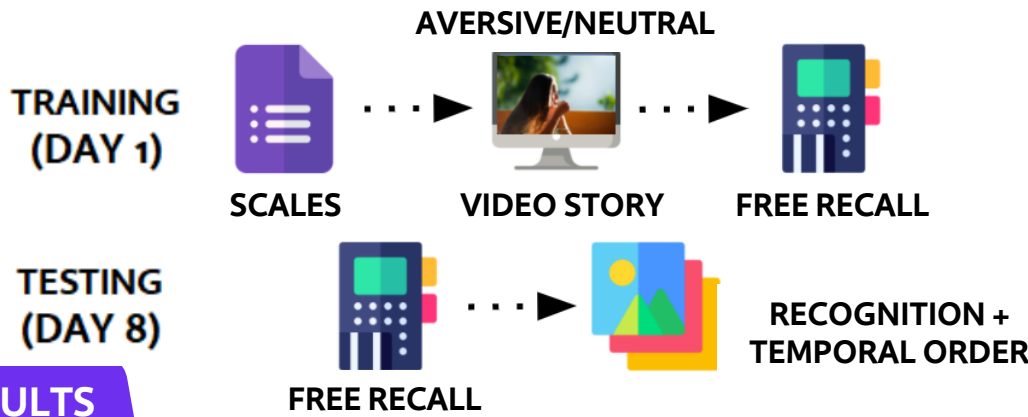
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## INTRODUCTION

Episodic memory is the ability to recall about what, where and when the event happened<sup>1</sup>. Furthermore, there is a consensus that pleasant or aversive events are better remembered than neutral events<sup>2</sup> and that episodic memory processes are modulated by anxiety and depression<sup>3,4</sup>. People's mental health has deteriorated due to the COVID-19 pandemic, showing a growth in anxiety and depressive symptoms<sup>5</sup>. Here, we hypothesize that the increase in negative symptoms modifies the ability to encode and consolidate memories. To study this, we evaluated the effects of emotional context on encoding and consolidation of aversive and neutral episodic memories.

## METHODS

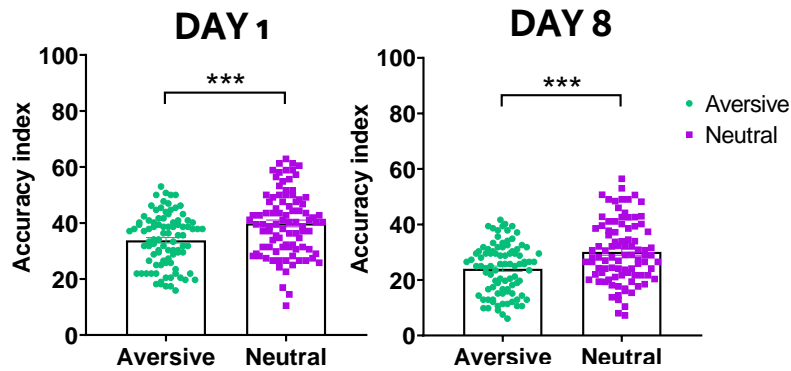


**N = 91 (62 FEMALES, 29 MALES)**  
**AGE = 18-40**

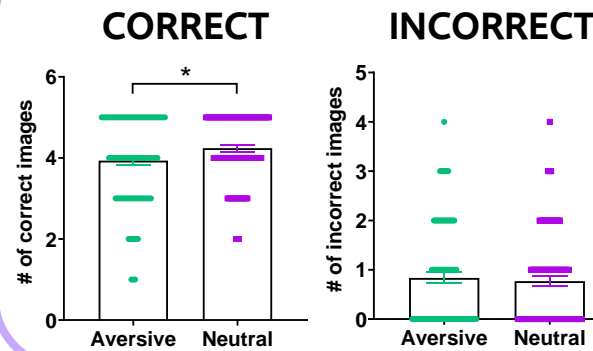
Data collection was repeated in a second round (6 months later), but participants received a story with a different valence (aversive/neutral - neutral/aversive). There were no significant differences for psychological variables between rounds, therefore the data was pooled.

## RESULTS

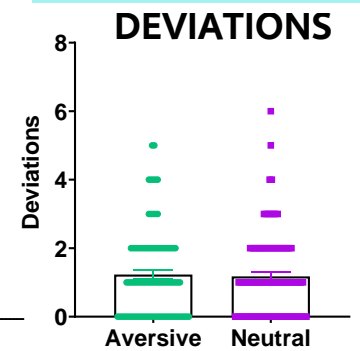
### FREE RECALL



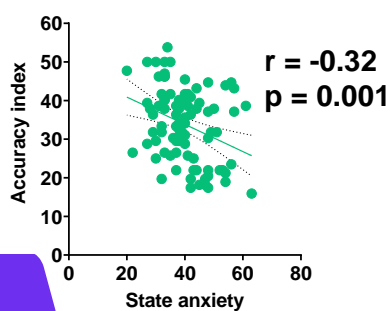
### RECOGNITION



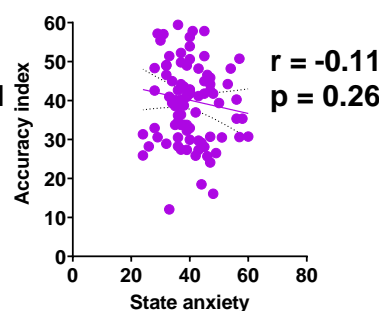
### TEMPORAL ORDER DEVIATIONS



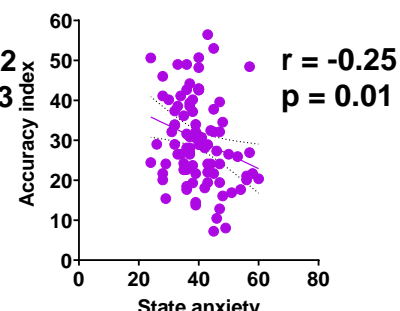
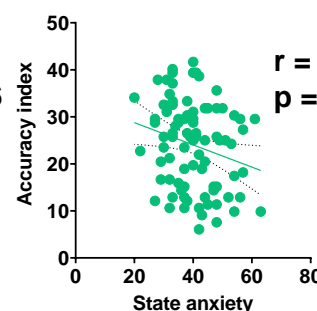
### STATE ANXIETY - DAY 1



### STATE ANXIETY - DAY 8



### STATE ANXIETY - DAY 8



## DISCUSSION

Contrary to previous results<sup>2,6</sup> we found that the pandemic situation particularly impaired the codification of aversive content. Moreover, we observed that the higher the anxiety values, the less encoding for the aversive content. There is an optimal state of anxiety for the formation of emotional memory<sup>7</sup> and people may be displaced from this optimal value due to threatening context. On the other hand, these results can be explained by the possible lack of novelty of the aversive stimulus<sup>8</sup>, since negative information was abundant during the pandemic. These results shed light on how the formation of episodic memories is affected by highly demanding environments.

## REFERENCES

[1] Tulving, E. (1993). *Curr. Dir. Psychol. Sci.* 2(3), 67-70. [2] Dolcos F, Katsumi Y, Weymar M, Moore M, Tsukiura T & Dolcos S (2017). *Front. Psychol.* 8, 1867. [3] Zlomuzica A, Dere D, Machulska A, Adolph D, Dere E & Margraf J (2014). *Front. Behav. Neurosci.* 8, 131. [4] Pauls F, Petermann F & Lepach AC (2015). *Cogn. Emot.* 29(3), 383-400. [5] Salari N, Hosseini-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S M et al., (2020). *Glob. Health.* 16(1), 1-11. [6] Groch S, Wilhelm I, Diekelmann S, Sayk F, Gais S & Born J (2011). *Psychoneuroendocrinology*, 36(9), 1342-1350 [7] Mair RG, Onos KD & Hembrook JR (2011). *Dose-response*, 9(3), dose-response. [8] Waris O, Fellman D, Jylkkä J & Laine M (2021). *Q. J. Exp. Psychol.* 74(5), 872-888.