

How Depressive Symptomology Affects Emotional Regulation Across the Lifespan

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Introduction

Emerging evidence suggests older adults spontaneously downregulate emotional affect, not only in response to, but also during anticipation of negative events¹.

Depression is associated with mood-congruent processing biases, with depressed individuals exhibiting preferential processing of negative over positive material².

As chronic stressors have been shown to decrease older adults' use of regulation strategies³, it is feasible that depressive symptoms later in life may similarly inhibit these strategies.

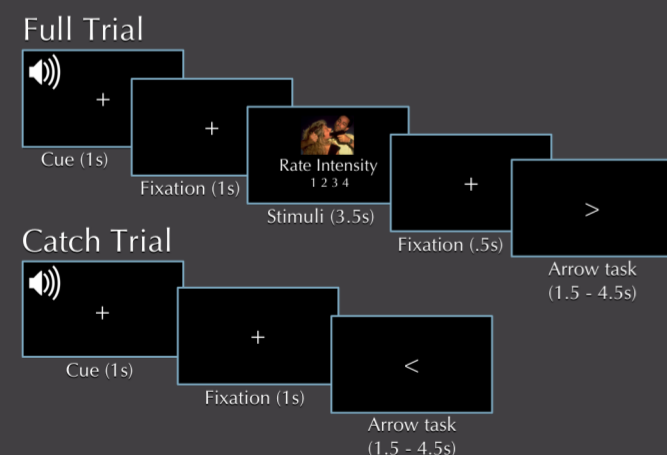
It is currently unknown how depressive symptomology, even in the absence of a clinical diagnosis, affects anticipatory emotional processing and how this relationship may change with age.

Method

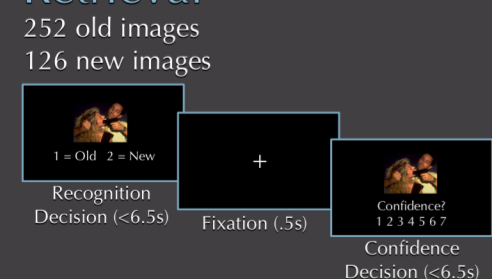
Participants: 45 adults (23 females)
- age range: 18-76; mean age: 42.2
- CES-D range: 0-48
Sample was mean split by age for analyses
Encoding task scanned in Siemens Prisma-Fit 3T MRI system

Encoding

3 auditory cues (1 for each valence)
252 full trials (84 for each valence)
84 catch trials (28 for each valence)



Retrieval

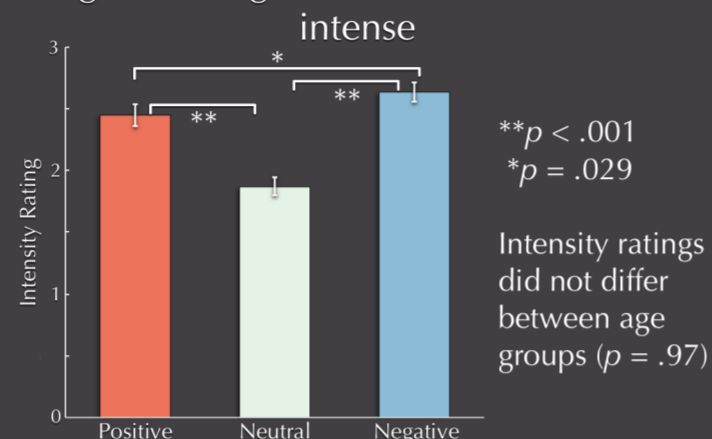


References

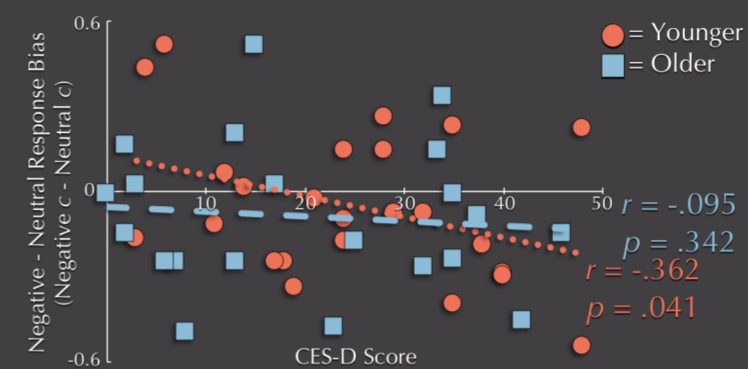
- (1) Corbett, B., Rajah, M. N., & Duarte, A. (2020). Preparing for the worst: Evidence that older adults proactively downregulate negative affect. *Cerebral Cortex*, 30(3), 1291-1306.
- (2) Barber, S. J., Opitz, P. C., Martins, B., Sakaki, M., & Mather, M. (2016). Thinking about a limited future enhances positivity of younger and older adult's recall: Support for socioemotional selectivity theory. *Memory & Cognition*, 44, 869-882.
- (3) Knight, B. G. & Durbin, K. (2015). Aging and the effects of emotion on cognition: Implications for psychological interventions for depression and anxiety. *PsyCh Journal*, 4, 11-19.

Behavioral Results

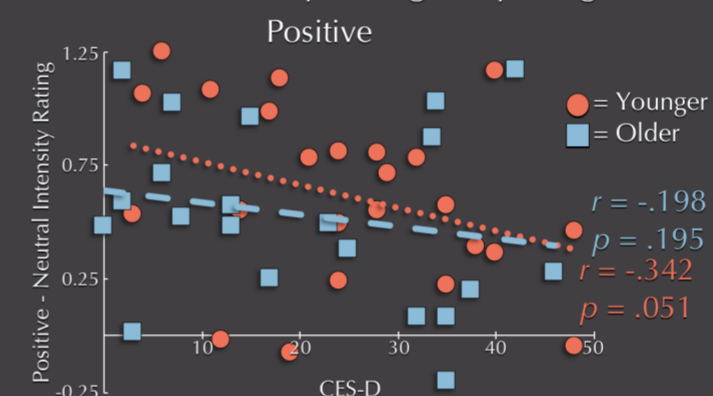
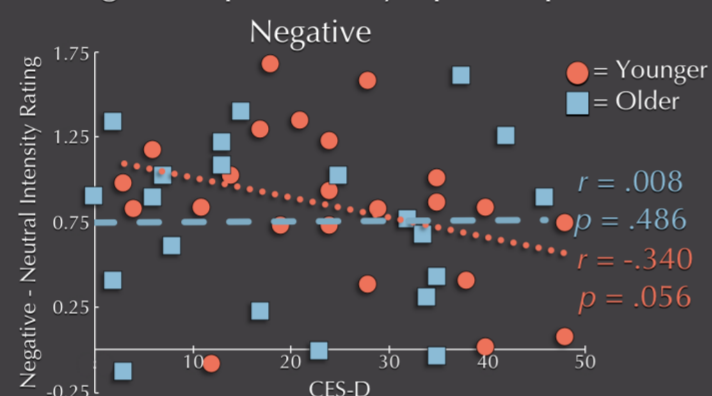
Negative images were rated as the most intense



Younger adults with higher depressive symptoms showed liberal response bias for negative images



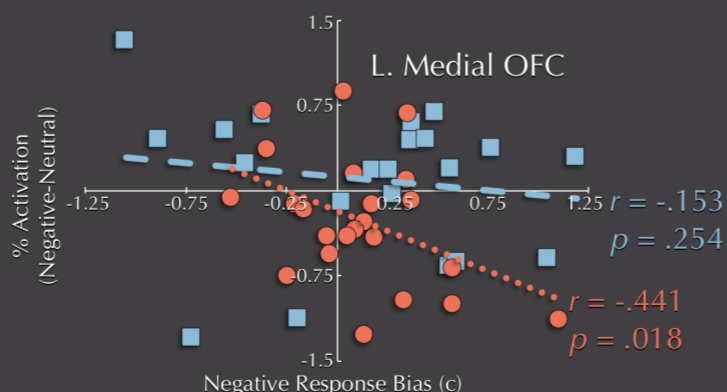
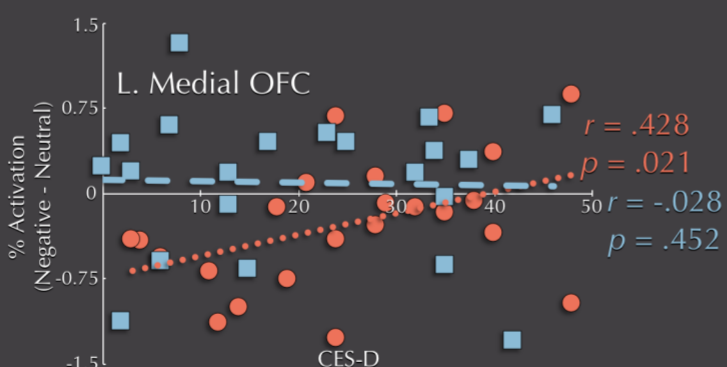
Higher depressive symptoms predicted lower emotional intensity ratings in younger adults



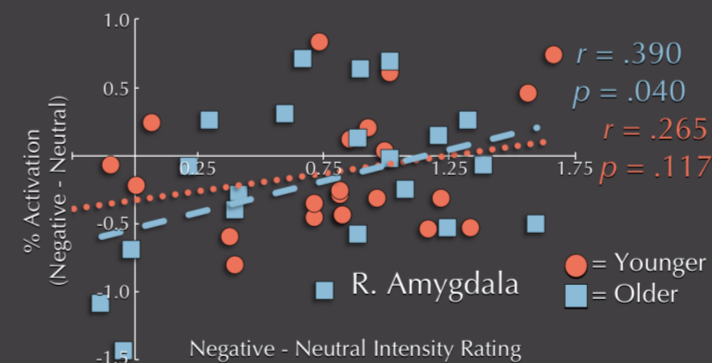
fMRI Results

Structural ROIs: Bilateral Medial OFC, Amygdala, and Hippocampus

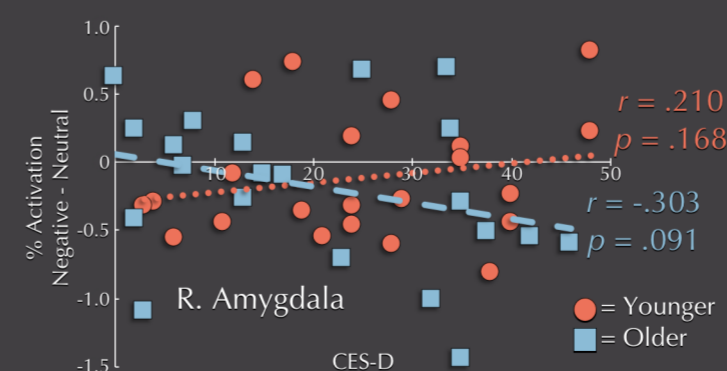
Greater negative cue-related activity was associated with higher depressive symptoms and liberal response bias only in young adults



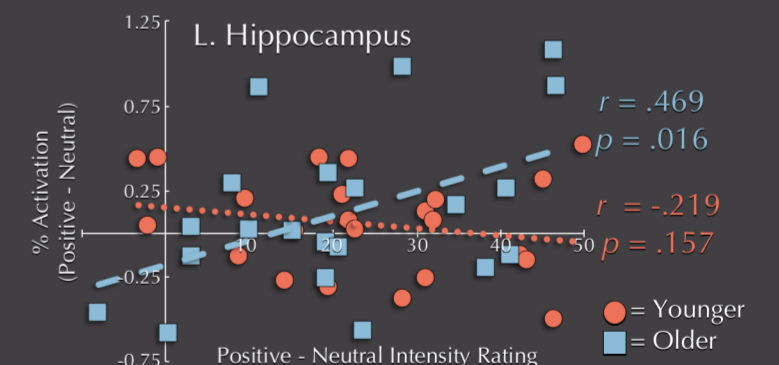
Negative cue-related activity predicted higher intensity ratings



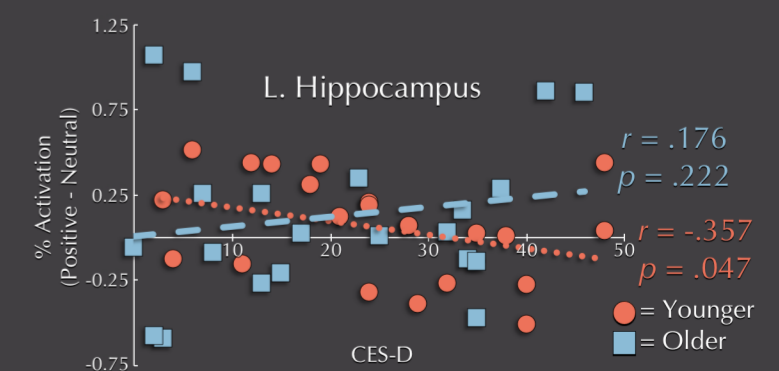
Depressive symptoms in older adults predicted less negative cue activity



Positive cue-related activity predicted higher intensity ratings in older adults



Depressive symptoms in young adults predicted less positive cue activity



Conclusions

Across age, increased amygdala activity during anticipation of negative events appears to reflect preparatory processes that correlate with increased emotional responses. In older adults, these processes are blunted by the effects of depressive symptoms.

During positive anticipation, the disruptive effects of depressive symptoms on hippocampal preparatory processes in young adults could contribute to the mood-congruent biases often observed in depression, such as reduced memory performance for positive material.

Behavioral and neural data suggest depressive symptoms in young adults may result in negative events being encoded more generally, thus resulting in a heightened tendency to judge new negative images as old at retrieval.

Together these results suggest depressive symptoms impact emotional anticipation differently across the lifespan. Our next step will be to use multivariate analyses to investigate how depression and age alter the pattern of activity associated with cue and stimulus processing and how this relates to subsequent memory performance.

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