

Differential associations of early threat and deprivation with brain structure.

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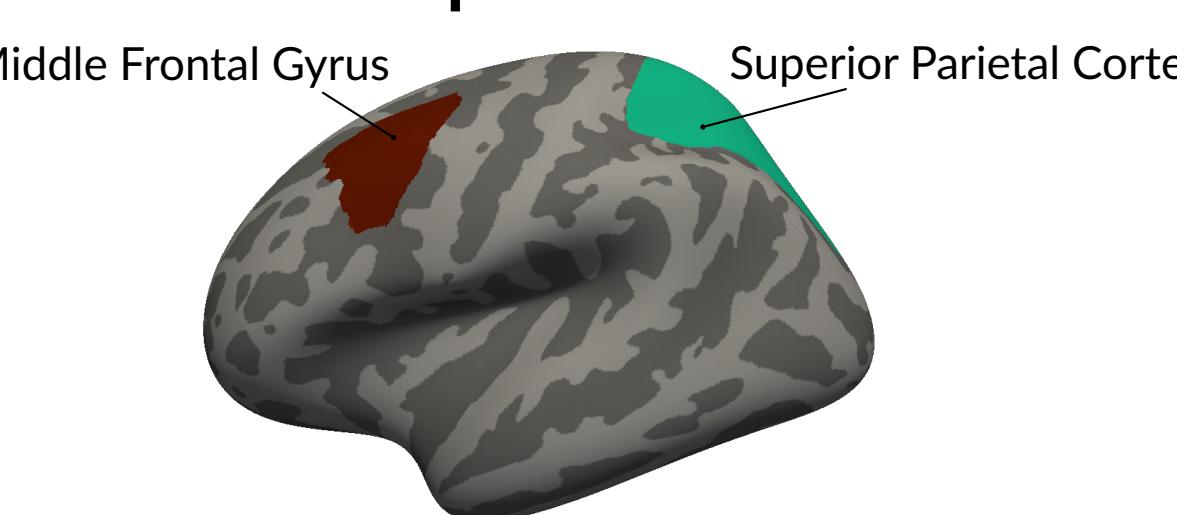
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Introduction

Different dimensions of childhood adversity may have specific and discriminable consequences for children.

Deprivation, experiences involving an absence of expected inputs from the environment, has been tied to lower executive functioning and academic performance. These effects may be mediated by altered development of the fronto-parietal control network.



Threat, experiences involving harm or threat of harm, has been tied to heightened emotional reactivity, altered fear learning, and information processing biases. These effects may be mediated by altered development of brain networks related to salience and safety signaling.



Methods

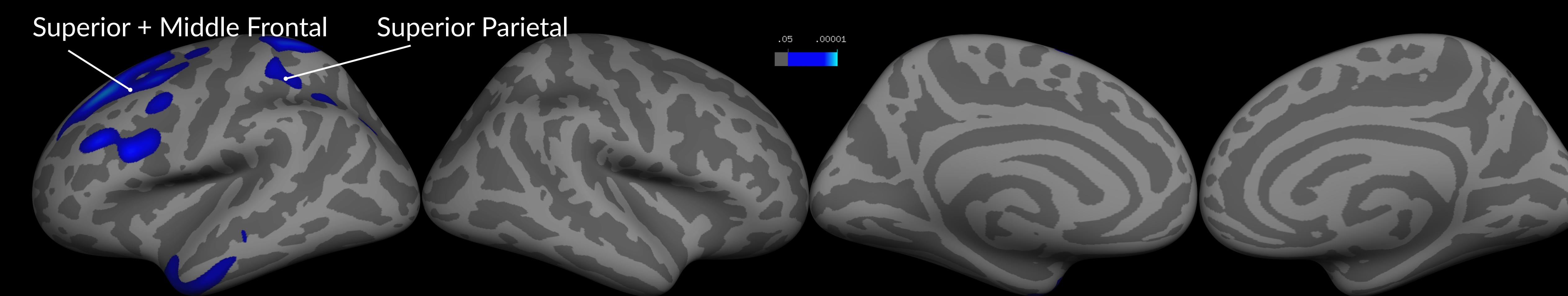
We measured cortical thickness and subcortical volume in structural MRI images from:

- 161 youth aged 8-17 ($M=12.8$)
- 76 threat exposed.
- 79 deprivation exposed.

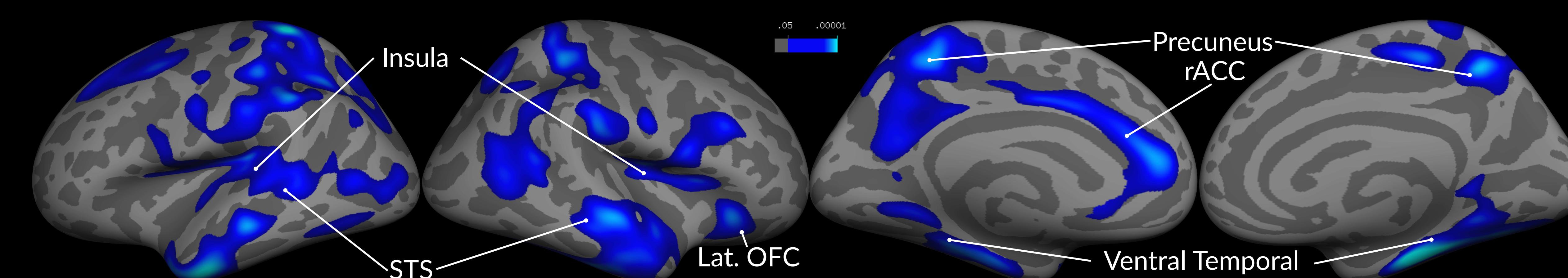
Threat exposed youth endorsed exposure to any of: Physical Abuse, Sexual Abuse, Community Violence, Domestic Violence.

Deprivation exposed youth endorsed exposure to any of: Physical Neglect, Emotional Neglect, Low Cognitive Stimulation.

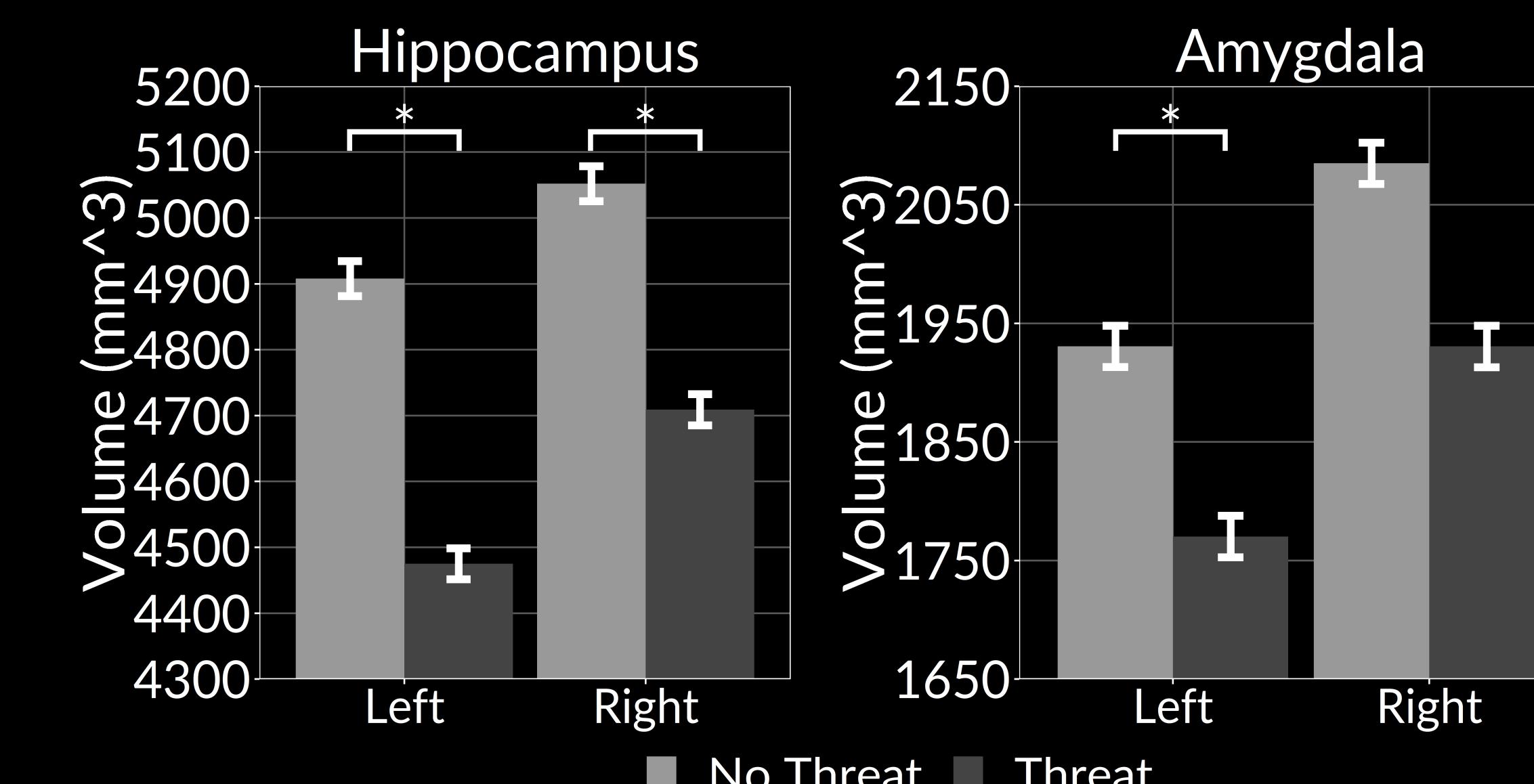
In 161 youth, childhood experiences of Deprivation were associated with thinner cortex in the fronto-parietal control network.



Childhood experiences of Threat were associated with thinner cortex and smaller sub-cortical volumes in the salience and default-mode networks.



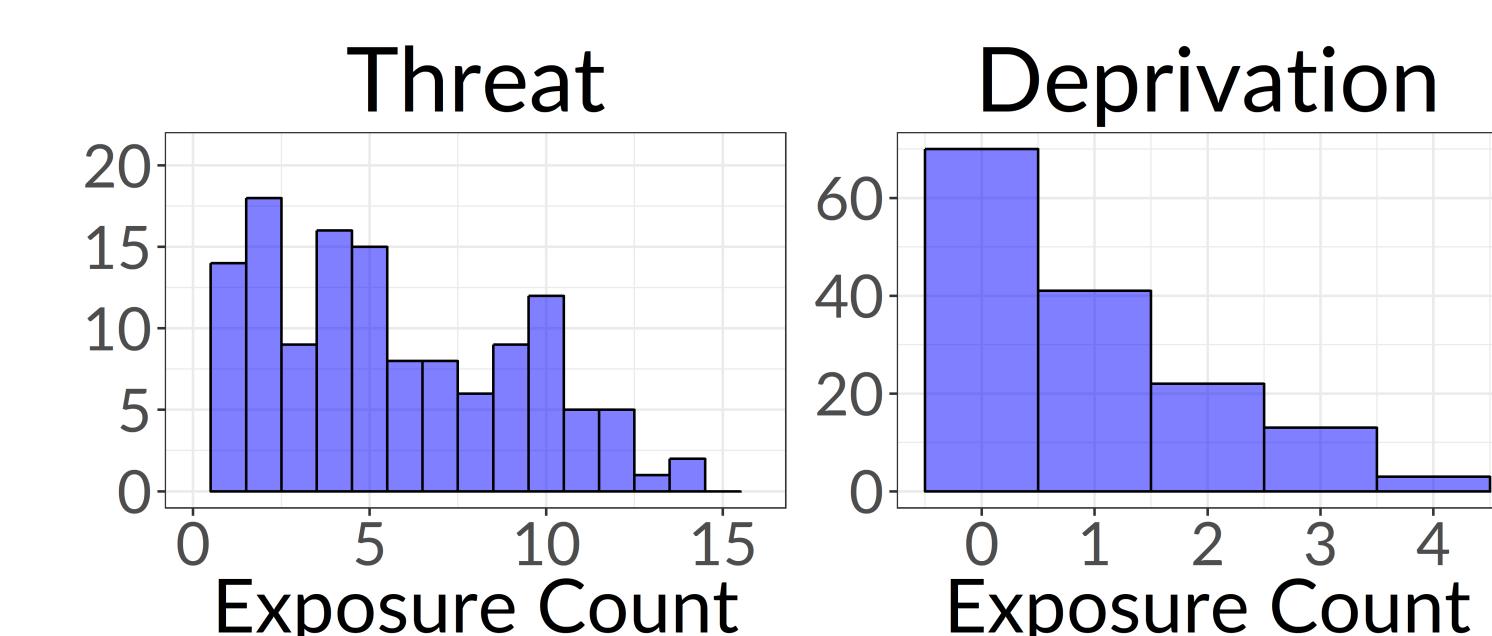
Sub-Cortical Volume with Threat



Measures

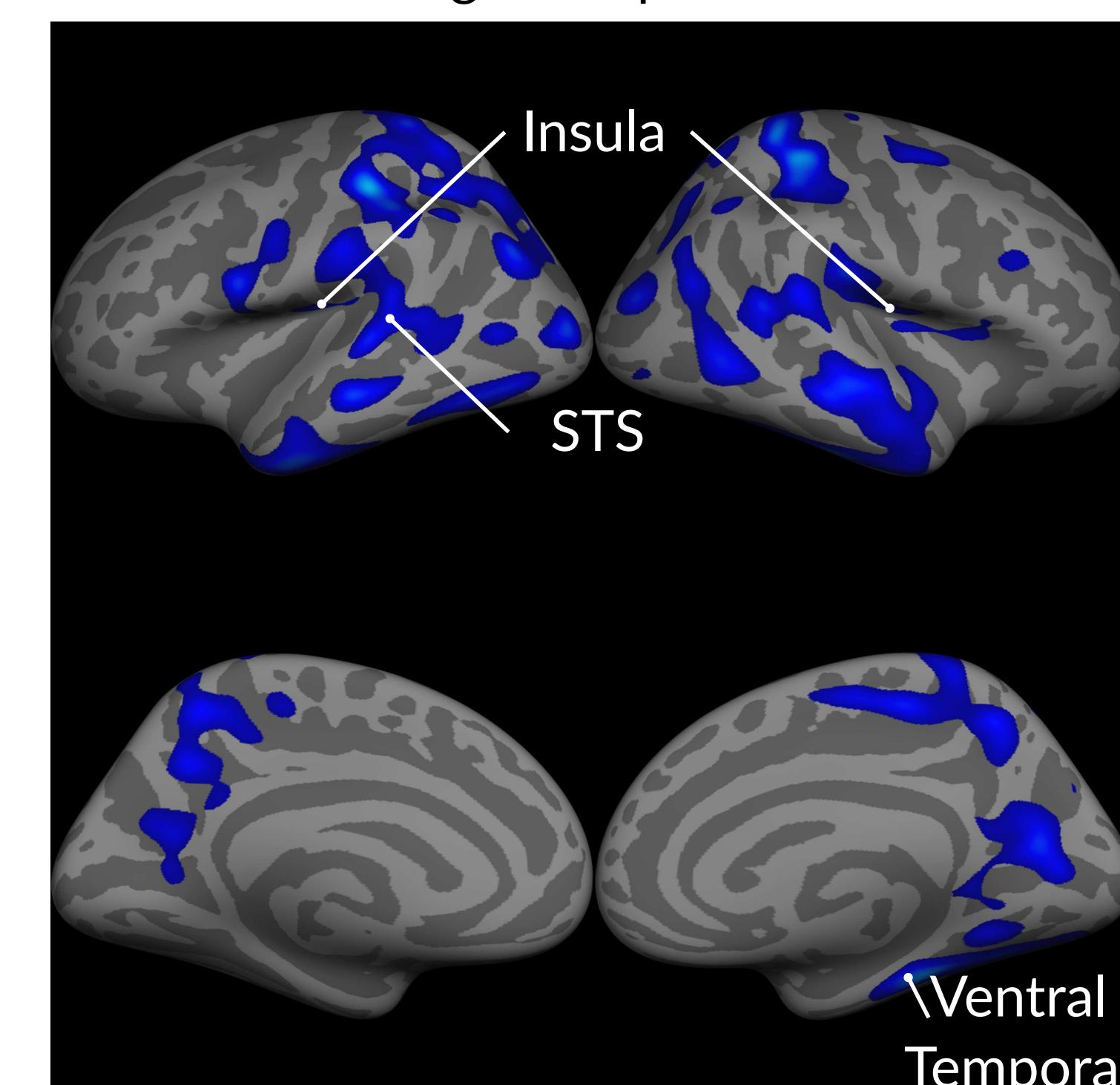
- Child Trauma Questionnaire
- Child Experiences of Care and Abuse Interview
- Screen for Adolescent Violence Exposure
- Home Observation for Measurement of the Environment

Exposure Histograms



Fully Adjusted Model

Threat controlling for deprivation:



(Deprivation results did not persist following control for threat)

References

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