

NAME OF PRESENTING AUTHOR: Jackson Thorp

EMAIL ADDRESS OF PRESENTING AUTHOR: Jackson.Thorp@qimrberghofer.edu.au

## Dissecting the association between trauma, polygenic risk and depression: specific types of trauma and individual symptoms

Jackson G. Thorp<sup>1,2</sup>, Zachary F. Gerring<sup>1</sup>, Lucia Colodro Conde<sup>3</sup>, Enda M. Byrne<sup>4,5</sup>, Sarah E. Medland<sup>3</sup>, Christel M. Middeldorp<sup>5,6</sup> Eske M. Derks<sup>1</sup>

<sup>1</sup> Translational Neurogenomics, QIMR Berghofer Medical Research Institute, Brisbane, Australia

<sup>2</sup> Faculty of Medicine, University of Queensland, Brisbane, Australia

<sup>3</sup> Psychiatric Genetics, QIMR Berghofer Medical Research Institute, Brisbane, Australia

<sup>4</sup> Institute for Molecular Bioscience, University of Queensland, Brisbane, Australia

<sup>5</sup> Child Health Research Centre, University of Queensland, Brisbane, Australia

<sup>6</sup> Child and Youth Mental Health Service, Children's Health Queensland Hospital and Health Service, Brisbane, Australia

### KEYWORDS:

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### ABSTRACT:

Experiencing trauma in either childhood or adulthood is associated with an increased risk for major depression. The effect of different types of traumatic experiences and their interaction with polygenic risk has not been extensively investigated. Here, we investigate the unique effects of ten different types of trauma, including childhood abuse, domestic / intimate partner abuse, and traumatic events, plus their interaction with depression polygenic risk scores (PRS) on overall depression and individual depressive symptoms. We use data from 128,906 individuals in the population-based UK Biobank cohort. Nine out of the ten traumas were uniquely associated with depression. Emotional traumas had the strongest association, and effects were different between sexes: intimate partner emotional abuse had a larger effect on depression in males, while childhood emotional neglect had a larger effect in females. A positive, additive PRS-by-*childhood emotional neglect* interaction effect on depression was observed, but no other PRS-by-trauma interactions were observed for the other types of trauma. Additionally, our results suggest that trauma is associated with specific patterns of depression symptoms. Broadly, trauma was associated with experiencing atypical neurovegetative symptoms of depression. Overall, our results suggest a complex relationship between trauma, genetic risk and depression, with particular traumatic experiences interacting with genetic risk and leading to different symptomatology.