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Glucocorticoid receptor gene methylation moderates the association of childhood trauma and cortisol stress reactivity

Abbreviated Title: Glucocorticoid receptor methylation, trauma and cortisol reactivity

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Highlights

- DNA methylation (DNA_M) in the glucocorticoid receptor gene (*NR3C1-1F)* moderates the specific direction of HPA-axis dysregulation in childhood trauma survivors.
- Trauma survivors with increased *NR3C1-1F* DNA_M displayed, on average, 10.4 nmol/l (62.3 %) higher peak cortisol levels during a laboratory stressor compared to those with low DNA_M.
- In contrast, individuals who were unexposed or only moderately exposed to CT displayed a moderately sized cortisol stress response irrespective of *NR3C1-1F* methylation.
- Contrary to some studies work, our data provides no evidence for a direct association of childhood trauma and *NR3C1-1F* DNA_M status.

Abstract

Exposure to childhood trauma (CT) has been linked to sustained dysregulations of major stress response systems, including findings of both exaggerated and attenuated hypothalamus–pituitary–adrenal (HPA) axis activity. Likewise, CT constitutes a common risk factor for a broad range of