
RESILIENCE AND THE MINERALOCORTICOID RECEPTOR: IMPLICATIONS FOR THE EFFECTS OF CUMULATIVE STRESS ON DEPRESSIVE SYMPTOMS

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Background: Stress exposure increases the risk for the development of depression, but only in individuals combining a vulnerable genetic background with (repeated) stress exposure. However, it is currently unknown which (combination) of stressful life events is etiologically the most relevant for depressive symptoms. The mineralocorticoid receptor (MR) which is essential for optimal HPA axis functionality has been implicated in stress resilience.

Methods: To determine whether the effects of cumulative stress on subclinical depressive symptoms (Beck Depression Inventory) depend on MR haplotypes (rs5522 and rs2070951). Cumulative stress was operationalized childhood trauma, major life events, and daily hassles.

Results: All three stress domains were independently and cumulatively associated with depressive symptoms. MR haplotypes significantly modified the effects of cumulative stress on depressive symptoms.

Conclusion: Cumulative exposure to stress is related to depressive symptoms, and our data implicate the existence of a multiple hit model in which independent but cumulative stress exposure leads to increased depressive symptoms. Importantly, MR haplotypes which are closely involved in HPA axis functionality moderate the cumulative effects of stress on depressive symptoms. Together, these results provide more insight into the neurobiological background of stress resilience.