Adversity in childhood linked to elevated striatum dopamine function in adulthood

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Childhood adversity increases the risk of psychosis in adulthood. Theoretical and animal models suggest that this effect may be mediated by increased striatal dopamine neurotransmission. The primary objective of this study was to examine the relationship between adversity in childhood and striatal dopamine function in early adulthood. Secondary objectives were to compare exposure to childhood adversity and striatal dopamine function in young people at ultra-high risk (UHR) of psychosis and healthy volunteers. Sixty-seven young adults, comprising 47 individuals at UHR for psychosis and 20 healthy volunteers were recruited from the same geographic area and were matched for age, gender and substance use. Pre-synaptic dopamine function in the associative striatum was assessed using $^{[18]}$FDOPA positron emission tomography.

Childhood adversity was assessed using the Childhood Experience of Care and Abuse questionnaire. Within the sample as a whole, both severe physical or sexual abuse ($T_6 = 2.92; p = 0.005$), and unstable family arrangements ($T_5 = 2.80; p = 0.007$) in childhood were associated with elevated dopamine function in the associative striatum in adulthood. Comparison of the UHR and volunteer subgroups revealed similar incidence of childhood adverse experiences, and there was no significant group difference in dopamine function. This study provides evidence that childhood adversity is linked to elevated striatal dopamine function in adulthood. These findings suggest that psychosocial factors may influence the risk of psychosis through effects on neurobiological processes implicated in the pathophysiology of the disorder.

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