

Childhood trauma affects brain pathways linked to adult anhedonia

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Experiencing trauma in childhood can lead to a lack of motivation and less pleasure from rewards-or anhedonia-later in life. In humans, childhood trauma is linked to changes in the activity of reward-related brain pathways stemming from an area called the hippocampus.

Preclinical work in animals suggests that hippocampal changes may contribute to anhedonia. But do hippocampal changes linked to childhood trauma make people more vulnerable to developing anhedonia?

New in *JNeurosci*, a research team led by Kathleen O'Brien at Temple University and Vishnu Murty at the University of Oregon in USA, sought to answer this question.

A large cohort of human participants took questionnaires probing childhood trauma and the ability to experience pleasure.

The researchers then used fMRI to examine hippocampus interactions with motivation-related brain areas. Individuals with childhood trauma and disrupted hippocampus pathways experienced more anhedonia than those with childhood trauma and no disruption to hippocampus pathways.

According to the researchers, this work suggests that childhood trauma interacts with disrupted motivation-related pathways in the brain to contribute to the onset of anhedonia.

Murty emphasizes that this work is among the first to link the hippocampus, a brain region typically associated with memory, to apathetic behavior in humans. The research team hopes to identify a target in the hippocampus that can increase pleasure in people with childhood trauma and to continue exploring the relationship between memory and anhedonia.

Source:

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O'Brien, K. J., *et al.* (2026) Functional integrity of mesolimbic-hippocampal circuits is associated with anhedonia in individuals with early life stress. *JNeurosci*.

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