

## Study indicates that the hippocampus mediates cognitive decline in Huntington's disease

September 2 2014

Huntington's disease is a neurodegenerative disorder that results in involuntary spastic movement and loss control of voluntary motor function. Patients also exhibit a decline in cognitive ability. The defects in learning and memory associated with Huntington's disease have been ascribed to pathology in the frontal lobe of the brain.

A new study in the *Journal of Clinical Investigation* suggests that alterations in the <u>hippocampus</u> contribute to memory dysfunction in Huntington's disease.

Silvia Gines and colleagues at the University of Barcelona found increased expression of a protein, p75<sup>NTR</sup>, in the hippocampus of Huntington's disease patients and mouse models of this disorder. p75<sup>NTR</sup> is known to reduce dendritic spine density, which is associated with memory and learning defects. Reduction of p75<sup>NTR</sup> in mouse models of Huntington's disease prevented the cognitive decline and maintained spine density.

Moreover, over expression of p75<sup>NTR</sup> in the hippocampus of wild type mice recapitulated memory and learning defects associated with Huntington's disease.

The results of this study recognize a potential role of the hippocampus in the development of Huntington's disease.



**More information:** Neurotrophin receptor p75NTR mediates Huntington's disease–associated synaptic and memory dysfunction, *J Clin Invest.* DOI: 10.1172/JCI74809

## Provided by Journal of Clinical Investigation

Citation: Study indicates that the hippocampus mediates cognitive decline in Huntington's disease (2014, September 2) retrieved 5 May 2024 from <a href="https://medicalxpress.com/news/2014-09-hippocampus-cognitive-decline-huntington-disease.html">https://medicalxpress.com/news/2014-09-hippocampus-cognitive-decline-huntington-disease.html</a>

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