

Researcher discovers commonalities in brains of people with HD and PD

January 12 2018

A new study strongly suggests that the brains of people who have died of Huntington's disease (HD) and Parkinson's disease (PD) show a similar response to a lifetime of neurodegeneration, despite being two very distinct diseases.

The findings, which appear in the journal *Frontiers in Molecular Neuroscience*, found that most of the [genes](#) perturbed in brains from both diseases are related to the same immune response and [inflammatory pathways](#). Inflammation in the central nervous system has recently been shown to play a role in a number of different neurodegenerative diseases, including HD and PD, but this is the first direct comparison of these two distinct diseases.

Brains of individuals who died with Huntington's, Parkinson's or no neurological condition were analyzed using sequencing technology that provides a data readout of the activity of all genes in the genome. By comparing the data from the different groups, the researchers identified which genes show differences in their activity. By organizing and interpreting these genes, the researchers found an overall pattern of commonality between the two diseases. According to the researchers, the hypothesis that the brain experiences a similar response to disparate neurodegenerative diseases has exciting clinical implications. "These findings suggest that a common therapy might be developed to help mitigate the effects of different neurodegenerative diseases of the central nervous system" explained corresponding author Adam Labadorf, PhD, Director of the BU Bioinformatics Hub.

"Though no such treatment yet exists, this finding will lead to experiments to better understand the specific mechanisms of the [inflammatory response](#) in the neurodegenerating brain, which may in turn lead to new treatments."

Labadorf believes that at present, these findings are too preliminary to suggest new clinical treatments. However, as many anti-inflammatory drugs are already available, there may be a relatively short path to designing clinical trials for drugs that modulate the inflammatory [response](#) in people with neurodegenerative disease.

"While these findings are specific to HD and PD, these two diseases are sufficiently distinct to suggest that the observed pattern of differential gene activity may likely be observed in other [neurodegenerative diseases](#) of the central nervous system, including Alzheimer's [disease](#) and Chronic Traumatic Encephalopathy (CTE)."

More information: Adam Labadorf et al. Evidence for a Pan-Neurodegenerative Disease Response in Huntington's and Parkinson's Disease Expression Profiles, *Frontiers in Molecular Neuroscience* (2018). [DOI: 10.3389/fnmol.2017.00430](https://doi.org/10.3389/fnmol.2017.00430)

Provided by Boston University School of Medicine

Citation: Researcher discovers commonalities in brains of people with HD and PD (2018, January 12) retrieved 5 May 2024 from <https://medicalxpress.com/news/2018-01-commonalities-brains-people-hd-pd.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
