

Lay Summary

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Pilot study: Expression of Bim in Huntington's Disease

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Bim is a BH3-only pro-death protein that is essential for apoptosis (a form of cell death) when cells are induced by death stimuli, and it is crucial in neuronal cell death in pathological conditions. Recently we found that Bim inhibits autophagy, a self-eating process in cells. Therefore, Bim is a key molecule with dual roles in regulating autophagy and apoptosis. This suggests that Bim is a potential target to tackle neuronal cell death and neurodegeneration, since autophagy has neuroprotective roles and apoptosis is a major mechanism for neuronal death. Therefore, it is attractive to investigate if Bim levels are increased in neurodegenerative diseases such as Huntington's Disease (HD). We aim to test if Bim levels alter in the pathological conditions in HD versus control brains. The levels of Bim mRNA from HD brain subjects (striatum and cortex) and age-matched healthy brain tissues will be examined using quantitative RT-PCR (qPCR) assays. Bim protein levels are also to be tested in the settings using immunohistochemistry and immunoblot to complement the qPCR data. This study will potentially reveal a new therapeutic target for the disease.