

Research reveals connection between tauopathies and disruption in protein synthesis

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Assistant Professor Joe Abisambra, researcher at the University of Kentucky Sanders-Brown Center on Aging, has demonstrated for the first time that tau impairs protein synthesis—a key component in memory loss.

"Though the exact mechanisms leading to memory loss in tauopathies are not yet known, the [scientific community](#) has acknowledged for years that in Alzheimer's disease brains, tau associates with ribosomes, the hub of [protein](#) production. " said Abisambra.

Ribosomes are our cellular "factories," tasked with making the proteins essential to proper cellular function. Using both in vivo and in vitro models, Abisambra and his lab were able to demonstrate that tau directly reduces the ribosome's ability to function, which interferes with the process that makes those proteins.

"Since [protein synthesis](#) is crucial for neuronal function and memory, our discovery highlights an underlying mechanism leading to tauopathies," explained Abisambra. "This might explain why [memory loss](#) is a common and early manifestation of virtually all tauopathies."

The Abisambra lab's work was published in the current issue of the *Journal of Neuroscience*.

Linda Van Eldik, Ph.D., director of the Sanders-Brown Center on Aging, stressed the importance of Abisambra's findings.

"Abnormal tau in the brain is associated with 18 known neurodegenerative diseases, and the most common of those—Alzheimer's disease—affects 36 million people worldwide, she said. "Since there is no cure for these diseases, it's critically important that we find ways to correct the cellular dysfunction that causes AD and other tauopathies. Joe's work is a positive step in that direction."

Provided by University of Kentucky

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