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News & Comments

These Cells in Alzheimer's Disease Overheat and 'Fry Like an Egg'

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One of the two key proteins implicated in Alzheimer's disease, amyloid-beta, is shown to aggregate in cells and overheat, causing them to 'fry like eggs.'

For their findings, the team of scientists from the University of Cambridge took the help of tiny, sensitive sensors, that could detect the slightest temperature change, inside the cell. The study showed that firstly, amyloid-beta misfolds, which leads to its clumping, which resulted in overheating. This aggregation and overheating could further affect the healthy amyloid-beta cells and cause them to aggregate too.

The team suggested that drug compounds can be used to lower temperature and thus could be a step closer to finding a successful treatment for Alzheimer's disease. Although it is just the first step, the team is hopeful and planning to carry out extensive tests and clinical trials.

With the current findings of the study, an assay using this technology may be useful for diagnosing Alzheimer's disease, or screening potential drug candidates.

A computational model was used to describe what happens to amyloid-beta in an intracellular environment and why it might increase intracellular temperatures. Researchers hope that their study will stimulate new studies that incorporate a variety of physiological parameters.

KEYWORDS

Alzheimer's disease, neurology, neuroscience, Amyloid-beta, brain research, neurobiology, neurons, proteins, temperature, thermogenesis, university of Cambridge.