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BRAIN SCANS FURTHER LINK ALZHEIMER'S DISEASE TO TAU PROTEINS

BY JESSICA FIRGER ON 5/11/16 AT 5:22 PM

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ALZHEIMER'S DISEASE

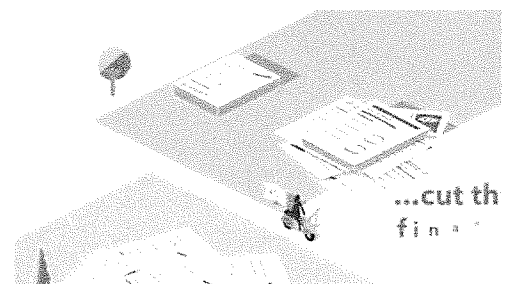
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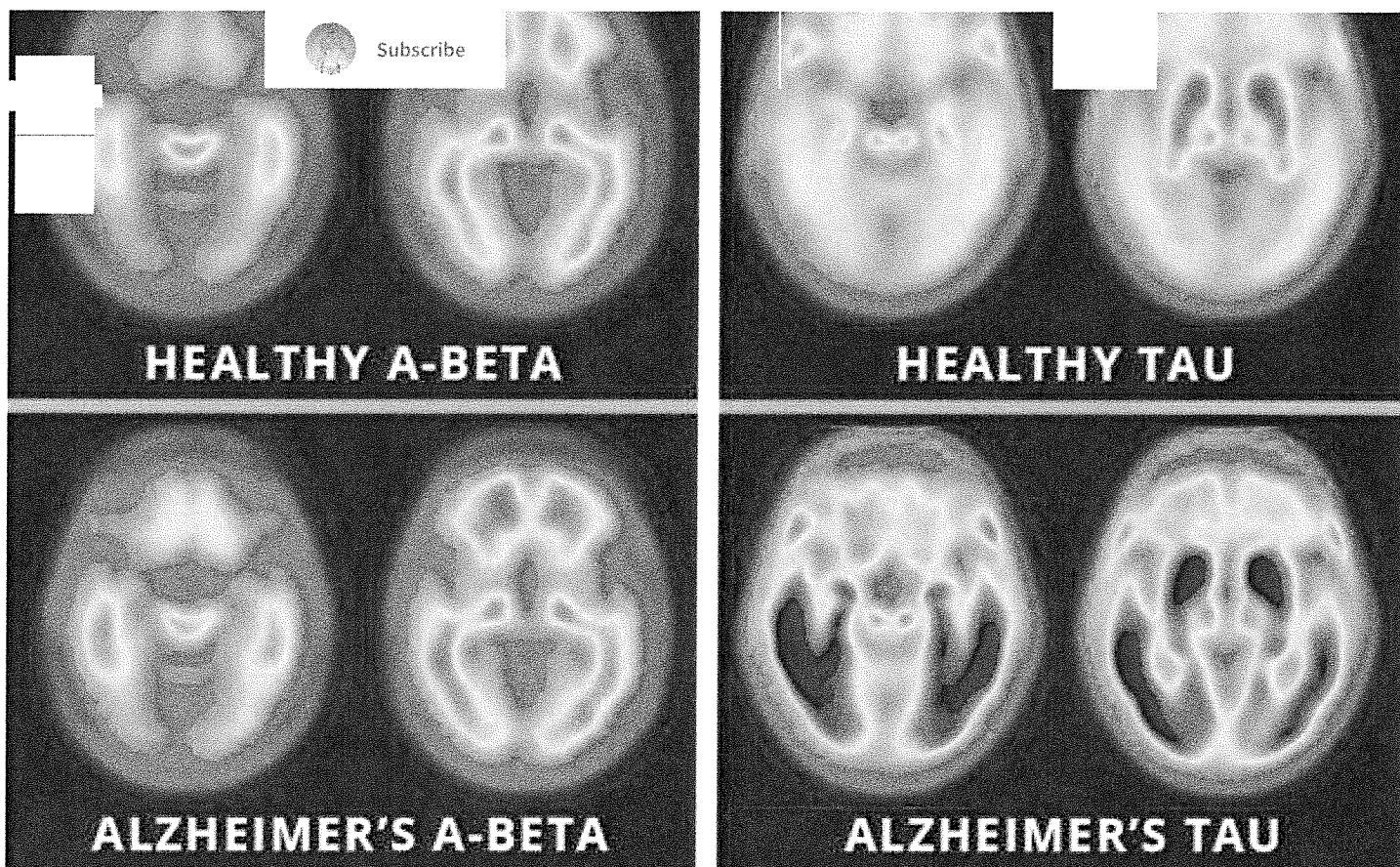
HEALTH AND MEDICINE

It's well-established that the accumulation of two types of naturally occurring proteins in the brain—amyloid beta and tau—are central factors that contribute to the progression of Alzheimer's disease.

Up until this point, scientists have mainly focused their research on amyloid beta proteins, because there is no effective way to image tau. Fortunately, research on amyloids has provided plenty of important insights and led to some treatments that slow the disease's progression.

However, a new study published May 11 in *Science Translational Medicine* suggests that scientists should pay closer attention to the role of tau proteins in Alzheimer's, especially because they may be a more accurate predictor of cognitive decline.





New research finds that medical imaging that captures tau proteins may be a more accurate predictor of Alzheimer's disease progression than scans that detect the presence of amyloid plaques.

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To conduct the study, researchers at the Washington University School of Medicine in St. Louis used a new imaging agent, known as T806, that has been found to cling to tau proteins. While T806 isn't currently used in clinical settings, it is approved for medical research.

Ten patients with mild Alzheimer's who weren't yet showing signs of cognitive decline, as well as 36 healthy control-group participants, underwent positron emission tomography scans using T806. The researchers also conducted on all study participants PET scans that are effective in detecting the presence of amyloid plaques and are regularly used on patients.


Additionally, they assessed the severity of the disease in Alzheimer's patients through the clinical dementia rating scale test. The researchers also sampled the Alzheimer's patients' cerebrospinal fluid to measure the quantity of enzymes linked to each protein. (It's been established that elevated taus are an indicator of Alzheimer's, and the diagnostic test is already a standard in clinical care for patients who need to be screened for the disease.) The patients also took a test by pen and paper to assess memory and other brain function to assess how advanced the disease was in the participants already diagnosed.

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The researchers compared  [Subscribe](#) healthy control-group members and Alzheimer's patients. They looked at the tau images from scans that detect amyloid protein. The researchers found that tau plaques were generally much more visible in scans with T806 than in scans that captured amyloid plaques.

Combining all of this data, the researchers also found an interesting pattern. The images of patients who had a more advanced early stage of the disease had a stronger presence of taus in the lateral temporal and parietal lobes, not just the hippocampal area of the brain. The researchers say these two additional regions of the brain appear to be the "tipping point" at which a patient begins to show subtle symptoms of the disease.

In addition to diagnostic testing, the study's authors say, this imaging agent may be useful to scientists working to develop new drugs for the disease. In the future, targeting the pathways associated with tau buildup may prove to be much more effective in halting Alzheimer's.

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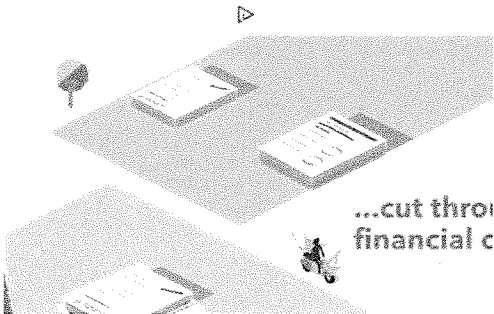
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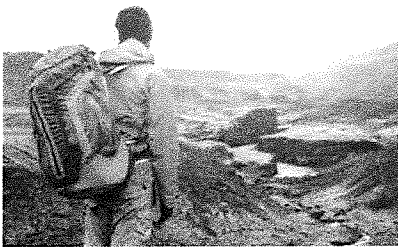
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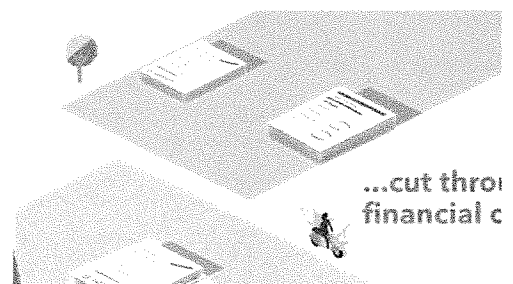
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