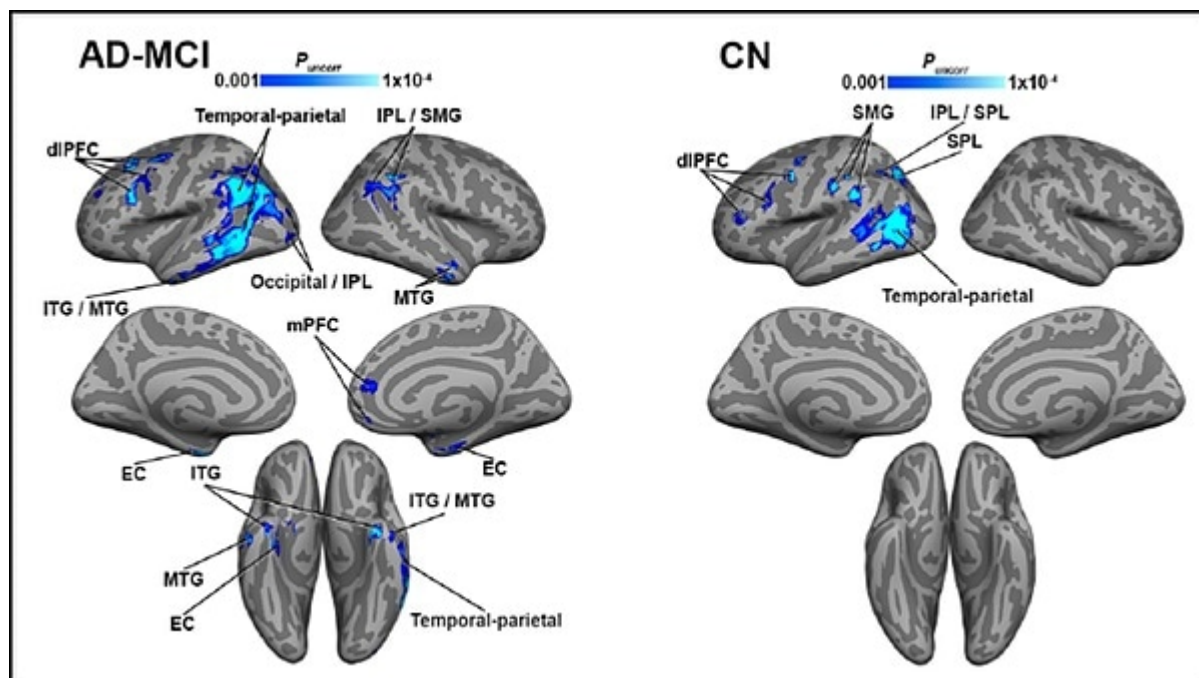


Impaired blood flow to brain regions linked with tau buildup in Alzheimer's disease

Oct 8 2020

In Alzheimer's disease, impaired blood flow to brain regions coincides with tau protein buildup. This relationship strengthens as cognition declines, according to new research published in *JNeurosci*.



Vascular function declines and amyloid- β and tau protein accumulate as Alzheimer's disease progresses, resulting in neuron death. Like the proverbial chicken and egg, it remains unclear if impaired blood flow causes or is caused by errant protein buildup, or if the two symptoms occur for unrelated reasons.

Albrecht et al. used MRI and PET to compare blood flow and tau buildup in the brains of older adults, with cognition ranging from cognitively normal to showing signs of mild cognitive impairment. Areas with increased tau levels had diminished blood flow, particularly in the inferior temporal gyrus, one of the first regions to show tau buildup in Alzheimer's disease, even before cognitive symptoms manifest. The relationship held true for a separate data pool from the Alzheimer's Disease Neuroimaging Initiative, which included people with mild cognitive impairment and Alzheimer's dementia. The correlation between tau and vascular function was stronger in people with greater cognitive impairment and higher amyloid- β levels. It also appeared in

more brain regions as the disease progressed in severity. These findings suggest targeting vascular function could be key to preventing and treating Alzheimer's dementia.

Source:

Society for Neuroscience

Journal reference:

Albrecht, D., *et al.* (2020) Associations between vascular function and tau PET are associated with global cognition and amyloid. *Journal of Neuroscience*. doi.org/10.1523/JNEUROSCI.1230-20.2020.
