

# Family history of Alzheimer's affects functional connectivity

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(HealthDay) -- Cognitively normal individuals with a family history of late-onset Alzheimer's disease (AD) may display lower resting state functional connectivity in the default mode network (DMN) of the brain, and this effect is detectable even in those who do not carry the apolipoprotein E (APOE)  $\epsilon$ 4 allele, according to a study published online May 9 in the *Annals of Neurology*.

Liang Wang, M.D., of Washington University in St. Louis, and colleagues conducted a cohort study of 348 cognitively normal participants with or without a family history of late-onset AD to examine the effect of family history on the integrity of the DMN, and whether this effect is detectable in APOE  $\epsilon$ 4 noncarriers. Resting state functional connectivity magnetic resonance imaging was used to assess the integrity of the DMN.

The researchers found that patients with a family history of late-onset AD displayed reduced [functional connectivity](#) between nodes of the DMN, specifically the posterior cingulate cortex and medial temporal cortex. This was not attributable to structural atrophy in the medial temporal lobe. This effect was also seen in noncarriers of the APOE  $\epsilon$ 4 allele.

"Unknown genetic factors, embodied in a [family history](#) of late-onset AD, may affect DMN integrity prior to cognitive impairment," the authors conclude.

Several authors disclosed financial ties to the pharmaceutical industry related to the study of dementia treatments.

**More information:** [Abstract](#)  
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