

Study of older people shows lower risk of dementia with higher levels of apolipoprotein E in HDL

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A team of researchers affiliated with multiple institutions across the U.S. has found that older people who have heightened levels of apolipoprotein E in their high-density lipoprotein (HDL) appear to be at lower risk of developing dementia. In their paper published in *JAMA Network Open*, the group describes their study of the blood of volunteers who participated in the Ginkgo Evaluation of Memory Study (GEMS) and what they found.

Prior research has shown lower than average apolipoprotein E levels in plasma to be a risk factor for dementia for older people, though it is not known why. Also, the $\epsilon 4$ allele of the apolipoprotein E gene has been found to be one of the most important risk factors for late-onset Alzheimer's disease, though it is also not known why. In this new effort, the researchers took another look at apolipoprotein E, which is a protein that resides in HDL (also sometimes referred to as the good cholesterol) to find out what higher than average levels might mean for an older person.

The work by the team involved analyzing data from GEMS, which was conducted from 2000 to 2008—it was a study carried out to try to determine if Ginkgo biloba (a type of tree whose leaves have been used to make dietary supplements) had any impact on the progression of dementia or Alzheimer's disease. The researchers in this new effort extracted data only for 995 older people, all of whom were dementia-free at the start of the study—521 of them subsequently developed dementia over the course of the study.

In looking at the data, the researchers found a link between higher levels of apolipoprotein E and lowered risk of dementia but only if the HDL did not also have high levels of apolipoprotein C3. They found that under the right conditions, higher levels

of apolipoprotein E could reduce the risk of developing dementia by up to 14 percent. Apolipoprotein C3 in HDL has been linked to an increased risk of developing atherosclerosis—narrowing of the arteries leading to heart disease. If a person in the study had high levels of both apolipoprotein E and apolipoprotein C3 there was no reduced risk of dementia.

More information: Manja Koch et al. Association of Apolipoprotein E in Lipoprotein Subspecies With Risk of Dementia, *JAMA Network Open* (2020). DOI: 10.1001/jamanetworkopen.2020.9250

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