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Given consumer concern that statins may be associated with memory or cognitive decline, a new study published today in the *Journal of the American College of Cardiology* may offer reassurance, as no difference was found in the rate of memory or cognitive decline of elderly statin-users compared to never-users.

"Not only are statins one of the most prescribed medications in the world, there is strong evidence that they reduce mortality in our patients with heart disease, stroke, diabetes, renal disease and other lipid disorders. Most importantly, statins aren't associated with a risk for major adverse health events," said Katherine Samaras, MBBS, Ph.D., an endocrinologist at St. Vincent's Hospital in Australia and the study's lead author. "These findings will hopefully go a long way toward reducing consumers' concerns about [memory](#) and cognition from statins, so they don't stop taking these lifesaving medications."

The researchers examined changes in the memory and global cognition regarding [statin](#)-use over a six-year observation period and two years of brain volume studies using the Sydney Memory and Ageing Study, a longitudinal observation study of cognition of community-dwelling, non-demented elderly participants conducted at the Centre for Healthy Brain Ageing (CHeBA), University of New South Wales, Sydney, Australia. Data were collected every two years on four occasions over the six-year period by psychologists and nurses. Clinicians diagnosed the presence of heart disease, cerebrovascular disease, hypertension and Type 2 diabetes.

Participants' medications and duration of use were categorized as statin ever-use versus never-use; continuous statin-use during observation versus never-use; specific statins (simvastatin, pravastatin and atorvastatin) versus never-use; and statin initiation during observation period versus never-use.

The 1,037 participants were aged 70 to 90 years and were 98%

Caucasian and Australian- (67%) or European- (18%) born. There were 395 statin never-users and 642 statin ever-users, which included ever-users at baseline and those who commenced taking statins during the study period. On average, participants had been on statins for nine years.

To measure their primary endpoints—memory and global cognition—a comprehensive assessment of global cognition and memory was developed. Five memory tests were employed by the researchers to assess new learning and short and long-term recall using verbal and visual memory tasks. Global cognition evaluated memory plus processing speed, language, visuospatial ability and executive function.

All participants were offered brain magnetic resonance imaging (MRI) at baseline, with 529 patients accepting and 408 undergoing a repeat MRI two years later. Statin ever-users and never-users were found to have similar total brain volume, hippocampal and parahippocampal brain volumes at baseline with no significant differences two years later.

Statin ever-users and never-users were similar at baseline for both memory and global cognition, the researchers found no significant difference in rate of decline in either memory or global cognition. Participants who took statins continuously over the study period had significantly higher baseline performance in memory and global cognition compared to never-users; the rate of decline in memory and global cognition for this subgroup was similar over the six-year observation period. When researchers compared the 99 participants who started statins during the study period, they found statin initiation was associated with a lessening in the rate of decline of memory. Overall, no associations between statin use and cognition were found between baseline and the six years of observation.

The researchers did find a protective interaction between statin ever-use, heart disease and the six-year change in the total learning memory test

score. Among patients with heart disease, statin ever-users displayed a slower rate of decline on this test compared to never-users. However, in patients without [heart disease](#), there was a comparable rate of decline between statin ever-users and never-users. The study also found a protective interaction between statin ever-use and the rate of decline in long-delayed recall performance for patients carrying the APOE-4 genotype. Carriers of this genotype are at high risk of Alzheimer's disease. In secondary analyses, male statin users did display a significantly faster logical memory decline compared to male never-users, but there was no significant difference between female statin users and never-users.

"We must acknowledge some limitations of the study, in particular the observational design and potential for selection and survivor bias," said Perminder Sachdev, MBBS, Ph.D., senior author who, along with Henry Brodaty, MBBS, MD, leads the Sydney Memory and Ageing Study. "Additionally, as participants with more advanced cognitive impairment were excluded from the study, no conclusions can be made for statin benefits in that group."

In an accompanying editorial, Costantino Iadecola, MD, and Neal S. Parikh, MD, MS, from Weill Cornell Medicine in New York City said, "These data support the view that worries about cognitive impairment should not limit statin use and raise the possibility that statins may favorably alter [cognitive](#) trajectories in a group of elders at high risk of Alzheimer's disease."

More information: *Journal of the American College of Cardiology* (2019). [DOI: 10.1016/j.jacc.2019.09.041](https://doi.org/10.1016/j.jacc.2019.09.041)

Provided by American College of Cardiology

Citation: Statins not associated with memory or cognition decline in elderly, may be protective in some patients (2019, November 18) retrieved 13 March 2024 from <https://medicalxpress.com/news/2019-11-statins-memory-cognition-decline-elderly.html>

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