

Review finds statin use not linked to a decline in cognitive function

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Based on the largest comprehensive systematic review to date, researchers at the Perelman School of Medicine at the University of Pennsylvania concluded that available evidence does not support an association between statins and memory loss or dementia. The new study, a collaborative effort between faculty in Penn Medicine's Preventive Cardiovascular Program, the Penn Memory Center, and the Penn Center for Evidence-Based Practice, will be published in *Annals of Internal Medicine*.

"Statins are prescribed to approximately 30 million people in the United States," said senior study author Emil deGoma, MD, assistant professor of Medicine and medical director of the Preventive Cardiovascular Program at Penn. "A wealth of data supports a benefit of these cholesterol-lowering medications among individuals at risk for <u>cardiovascular disease</u> in terms of a reduction in the risk of heart attack and stroke; however, potential side effects of statins are less well understood. In February 2012, largely based on anecdotal reports, the U.S. Food and Drug Administration (FDA) issued a safety statement warning patients of possible adverse cognitive effects associated with statin use. Many concerned patients have asked if there is a relationship between statins and memory problems. Their concerns, along with the FDA statement, prompted us to pursue a rigorous analysis of all available evidence to better answer the question – are statins associated with changes in cognition?"

The research team conducted a systematic review of the published



literature and identified 57 statin studies reporting measures of cognitive function. Dr. deGoma and colleagues found no evidence of an increased risk of dementia with statin therapy. In fact, in cohort studies, statin users had a 13 percent lower risk of dementia, a 21 percent lower risk of Alzheimer's disease, and a 34 percent lower risk of <u>mild cognitive</u> <u>impairment</u> compared to people who did not take statins.

Most importantly, cognitive test scores were not adversely affected by statin treatment in randomized controlled trials. In these trials, roughly half of the study participants received statins and the other half received placebo. All study participants underwent formal testing of memory and other cognitive domains through tests such as the ability to recall a set of numbers. The analysis of 155 cognitive tests spanning eight categories of cognitive function, including 26 tests of memory, revealed no differences between study participants treated with statins and those provided placebo.

The research team additionally performed an analysis of the FDA postmarketing surveillance databases and found no difference in the frequency of cognitive adverse event reports between statins and two commonly prescribed cardiovascular medications that have not been associated with cognitive impairment, namely, clopidogrel and losartan.

"Overall, these findings are quite reassuring. I wouldn't let concerns about adverse effects on cognition influence the decision to start a statin in patients suffering from atherosclerotic disease or at risk for cardiovascular disease. I also wouldn't jump to the conclusion that statins are the culprit when an individual who is taking a statin describes forgetfulness. We may be doing more harm than good if we withhold or stop statins – medications proven to reduce the risk of heart attack and stroke – due to fears that statins might possibly cause memory loss," said Dr. deGoma.



The team acknowledges that while their analysis is reassuring, large, highquality randomized controlled trials are needed to confirm their findings.

"For many of the cognitive outcomes that we examined, the identified studies were small, were at risk for bias, used varying diagnostic tests to assess cognitive domains, and did not include patients on high-dose statins, which is important given the increasing use of high-dose statins for secondary prevention," noted study co-author Craig Umscheid, MD, MSCE, assistant professor of Medicine and Epidemiology and director of the Penn Center for Evidence-based Practice. "Thus, additional trials addressing these limitations would strengthen our conclusions. Despite this, the totality of the evidence does reassure us that there's unlikely to be a significant link between statins and cognitive impairment."

Provided by University of Pennsylvania School of Medicine

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