

## DO STATINS CAUSE COGNITIVE IMPAIRMENT? NO

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Statins are among the most widely used drugs and the efficacy for reducing myocardial infarction and ischemic stroke are well proven. Unfortunately, similarly to other drugs, statins can exert potential side effects (liver and muscle injury, increased risk of type-2 diabetes). Some publications raised also the concerns of cognitive impairment. The question of whether statins can adversely influence cognition was initially raised in case reports, case series, and some randomized trials.

A patient with 10 mg/day rosuvastatin (Galatti et al 2006) and others with simvastatin had transient problems with cognition (Orsi et al 2001, Padala et al 2006)

IN a study with 18 pts. the statin discontinuation and re-challenge in individuals with Alzheimer's dementia, The 12-week treatment was associated with improvement in cognition with discontinuation of statins and worsening with re-challenge (Padala et al 2012) .

Wagstaff et al (2003) analyzed 60 case reports and found that of the 60 patients with memory loss associated with statins, 36 received simvastatin, 23 atorvastatin, and 1 pravastatin. About 50% of the patients noted cognitive adverse effects within 2 months of therapy. Fourteen (56%) of 25 patients noted improvement when the statin was discontinued. Memory loss recurred in four patients who were re-challenged with the drug.

Muldoon et al (2000) observed that treatment of hypercholesterolemia with 20 mg lovastatin did result in small performance decrements on neuropsychological tests of attention and psychomotor speed.

Later, the same authors (Muldoon et al 2004) performed a study with a randomized double-blind design (283 subjects): placebo, 10 mg or 40 mg of simvastatin was given for 6 months. Compared with placebo, detrimental effects of simvastatin treatment were found on tests previously observed to be sensitive to statins.

Finally, a survey suggested, that cognitive problems associated with statin therapy have variable onset and recovery courses, a clear relation to statin potency, and significant negative impact on quality-of-life (Evan and Golomb 2009).

IN 2012 the FDA released a statement about the possible negative effect of statins on cognition: "notable, but ill-defined memory loss or impairment that was reversible upon discontinuation of statin therapy." Given the wide use of statins, even a low incidence of associated cognitive impairment may influence treatment decisions.

Fortunately, the recent surveys and meta-analysis do not support the serious concerns. Parale et al (2006) found a significant beneficial effect of atorvastatin in a dose of 10 mg/day for a period of 6 months on higher functions.

A large Mayo survey investigated the results of cognition studies including 23,443 patients with a mean exposure duration of 3 to 24.9 years. Three studies found no association between statin use and incident dementia and 5 found a favorable effect. Pooled results revealed a 29% reduction in incident dementia in statin-treated patients. They concluded, that in patients without baseline cognitive dysfunction, short-term data are most compatible with no adverse effect of statins on cognition, and long-term data may support a beneficial role for statins in the prevention of dementia. (Swiger et al 2013).

Similarly a systematic review of Richardson et al (2013) confirmed that the Published data do not suggest an adverse effect of statins on cognition. They also admit, the strength of available evidence is limited, particularly with regard to high-dose statins.

Finally, we agree with the statements of Statin Cognitive Safety Task Force (Rojas-Fernandez et al. 2012, 2014): "As a class, statins have important health benefits in patients at risk of cardiovascular events that far outweigh risks of cognitive dysfunction as a side effect. Although cognitive side effects of statins may occur in rare individuals, the medical evidence supporting a causal effect is weak or nonexistent".

Do statins cause cognitive impairment? Our answer: no

### Literature

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