

No evidence higher doses of cholesterol-lowering drug increase risk of acute kidney damage

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Credit: University of Otago

New Zealanders taking a higher dose of simvastatin, one of the cholesterol-lowering statin drugs used to prevent heart attacks and strokes, do not appear to have a higher risk of acute kidney damage than those taking a lower dose, according to University of Otago researchers from the Pharmacoepidemiology Research Network.

In the nationwide study just published online in the journal *PLOS ONE*, the researchers found no relationship between simvastatin dose and the risk of [acute kidney injury](#) (also known as [acute renal failure](#) or [acute kidney failure](#)) in the absence of concurrent statin-related serious [muscle damage](#).

Lead author, Dr Lianne Parkin of the Department of Preventive and Social Medicine, says it was important to undertake this research because previous studies had suggested the risk of acute [kidney](#) injury might increase with increasing statin doses.

"But the findings were inconsistent and none of the studies had looked to see whether the acute kidney injury was the result of rhabdomyolysis (a rare adverse effect of statins in which the breakdown of muscle tissue can lead to kidney failure)."

Dr Parkin and colleagues had previously undertaken a national study which found that people taking a higher dose of simvastatin have a greater risk of rhabdomyolysis than people taking a lower dose.

In the latest study, the researchers excluded people whose acute kidney injury was associated with serious muscle damage and then examined the risk of acute kidney injury according to simvastatin dose in two groups of people – those without a history of kidney disease and those with [chronic kidney disease](#) who were not on dialysis.

They found no relationship between simvastatin dose and acute kidney injury in either group.

"This is reassuring", says Dr Parkin, "because statins play an important role in the prevention of major cardiovascular events and they are widely used."

The study was based on anonymised national pharmaceutical dispensing and health data for 340,147 people who started taking simvastatin between January 2006 and December 2013.

More information: Lianne Parkin et al. Simvastatin dose and acute kidney injury without concurrent serious muscle injury: A nationwide

nested case-control study, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0182066](https://doi.org/10.1371/journal.pone.0182066)

Provided by University of Otago

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