

Statins linked to reduced risk of death from COVID-19 in major population study

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Statins are a recommended and common intervention for preventing cardiovascular events by reducing levels of lipoprotein cholesterol in the

blood. During the pandemic, it has been debated whether statins influence the risk of death from COVID-19. Researchers at Karolinska Institutet in Sweden have now conducted the largest population study to date in the field. The study, which is published in *PLOS Medicine*, indicates that statin treatment slightly lowers COVID-19 mortality.

Statins are used to lower the cholesterol level—the lipid count—in the blood and are a common preventative treatment in patients at high risk of cardiovascular events.

During the pandemic, the question of whether statins can reduce COVID-19 mortality via their effects on coagulation and the immune system has engaged scientists and doctors.

Earlier studies have not provided an unequivocal answer and have often suffered from the limitation that they have only included hospital inpatients. Researchers at Karolinska Institutet have now carried out the largest population study to date on the relationship between statins and COVID-19 mortality.

Using data from Swedish registers, the researchers followed 963,876 residents of Stockholm over the age of 45 between March and November 2020. The results are based on analyses of data on the participants' prescribed medication and healthcare and from the Cause of Death Register.

The information was analyzed with respect to such factors as diagnosed [medical conditions](#). The results show that [statin treatment](#) was associated with a slightly lower risk of dying from COVID-19, a correlation that did not vary significantly among risk groups.

"Our results suggest that [statin](#) treatment can have a moderate prophylactic effect on COVID-19 mortality," says co-first author Rita

Bergqvist, [medical student](#) at Karolinska Institutet.

Randomized studies will be needed to ascertain whether there is a [causal relationship](#), note the researchers.

"All in all, our findings support the continued use of statins for conditions such as cardiovascular disease and high levels of blood lipids in line with current recommendations during the COVID-19 pandemic," says co-first author Viktor Ahlqvist, doctoral student at the Department of Global Public Health, Karolinska Institutet.

One limitation of the study concerns the use of prescription data without the possibility of checking individual drug use. The researchers were also not able to control for risk factors such as smoking and high BMI, only diagnosed health status.

The researchers received no financing for the study. Co-author Johan Sundström holds shares in Eli Lilly, Boehringer, Bayer, Pfizer, AstraZeneca and others; there are no other reported conflicts of interest.

More information: Rita Bergqvist, Viktor H. Ahlqvist, Michael Lundberg, Maria-Pia Hergens, Johan Sundström, Max Bell, Cecilia Magnusson, HMG-CoA reductase inhibitors and COVID-19 mortality in Stockholm, Sweden: a registry based cohort study, *PLOS Medicine*, online October 14 2021, [DOI: 10.1371/journal.pmed.1003820](https://doi.org/10.1371/journal.pmed.1003820)

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