

Statins' unique effectiveness in preventing heart disease

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Statins, a class of drugs that lowers the level of cholesterol in the blood by reducing the production of cholesterol by the liver, are the first line of defense in preventing and treating cardiovascular disease. Statins

appear to be more effective than other drugs targeting cholesterol at preventing death and possibly are more effective in men than women, but the reasons for any such differences are unclear.

In a study published recently in the journal *eLife*, CUNY SPH Professor Mary Schooling and team used Mendelian randomization, an observational study design that avoids confounding by taking advantage of the random allocation of genetic material at conception, to mimic the effects of statins.

Consistent with a long-standing hypothesis, the findings suggest that statins, unlike other major lipid modifiers such as PCSK9 inhibitors and ezetimibe, partially operate via testosterone in men specifically. This additional property of statins contributes to their overall superiority, because testosterone affects [cardiovascular disease](#) and to differences by sex, because testosterone levels are higher in men than women.

Apart from providing new directions for the development of much-needed new means of preventing and treating cardiovascular disease, this study also highlights the importance of investigations encompassing both men and women.

"Identifying why statins are uniquely effective provides new avenues for preventing cardiovascular disease, the leading cause of death in the United States," says Professor Schooling.

More information: CM Schooling et al. Investigating pleiotropic effects of statins on ischemic heart disease in the UK Biobank using Mendelian randomisation, *eLife* (2020). [DOI: 10.7554/elife.58567](https://doi.org/10.7554/elife.58567)

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