

Assessing long-term effectiveness and cost-effectiveness of statin therapy in the UK: a modelling study using individual participant data sets

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Plain language summary

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Plain language summary

Cardiovascular disease, such as heart attack or stroke, is a major cause of death and disability worldwide. Statins, a medication that reduces the level of cholesterol, have been reliably shown to reduce cardiovascular risk. They are available at low cost, are generally safe, and are widely recommended for people with or at increased risk of cardiovascular disease. However, it is uncertain whether the right people in the United Kingdom are recommended to receive this treatment and whether there are further categories of people who can benefit.

We set out to assess the benefits and value for money of statins across people in the United Kingdom depending on their sex, age, cholesterol level, whether they already had cardiovascular disease, and if not, their estimated risk of developing it, to resolve remaining uncertainties. We used data from large statin studies and large contemporary United Kingdom population studies to develop a model to predict future cardiovascular disease, mortality, quality of life and healthcare costs for different people with and without statin treatment.

We found that all people aged 40 years or older, whether men or women, younger or older, and independent of their level of cholesterol or cardiovascular risk, are highly likely to benefit cost-effectively from statin therapy to reduce their cardiovascular risk. We project that long-term statin treatment would increase people's length and quality of life, with people at higher cardiovascular risk or with higher levels of cholesterol benefiting most. For most categories, more potent statin regimens that achieve larger cholesterol reductions provide the best value, although standard statin regimens may be enough for men and women at lower cardiovascular risk or with lower cholesterol levels.

This study suggests that statin treatment should be strengthened among people at higher cardiovascular risk, and extending statin treatment to further categories of people aged 40 years or older should be considered.

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This article

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