

Survival benefits of statin therapy in primary care: landmark analyses

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Context

Statins have been widely prescribed for cardiovascular disease prevention since clinical trials demonstrated the survival benefits. However, the threshold of cardiac risk at which to prescribe statins is still controversial, especially at older ages where everyone would be eligible solely due to their age. Furthermore, these drugs are life-long prescriptions, yet little is known about the effect of long-term prescription in the general population.

Objective

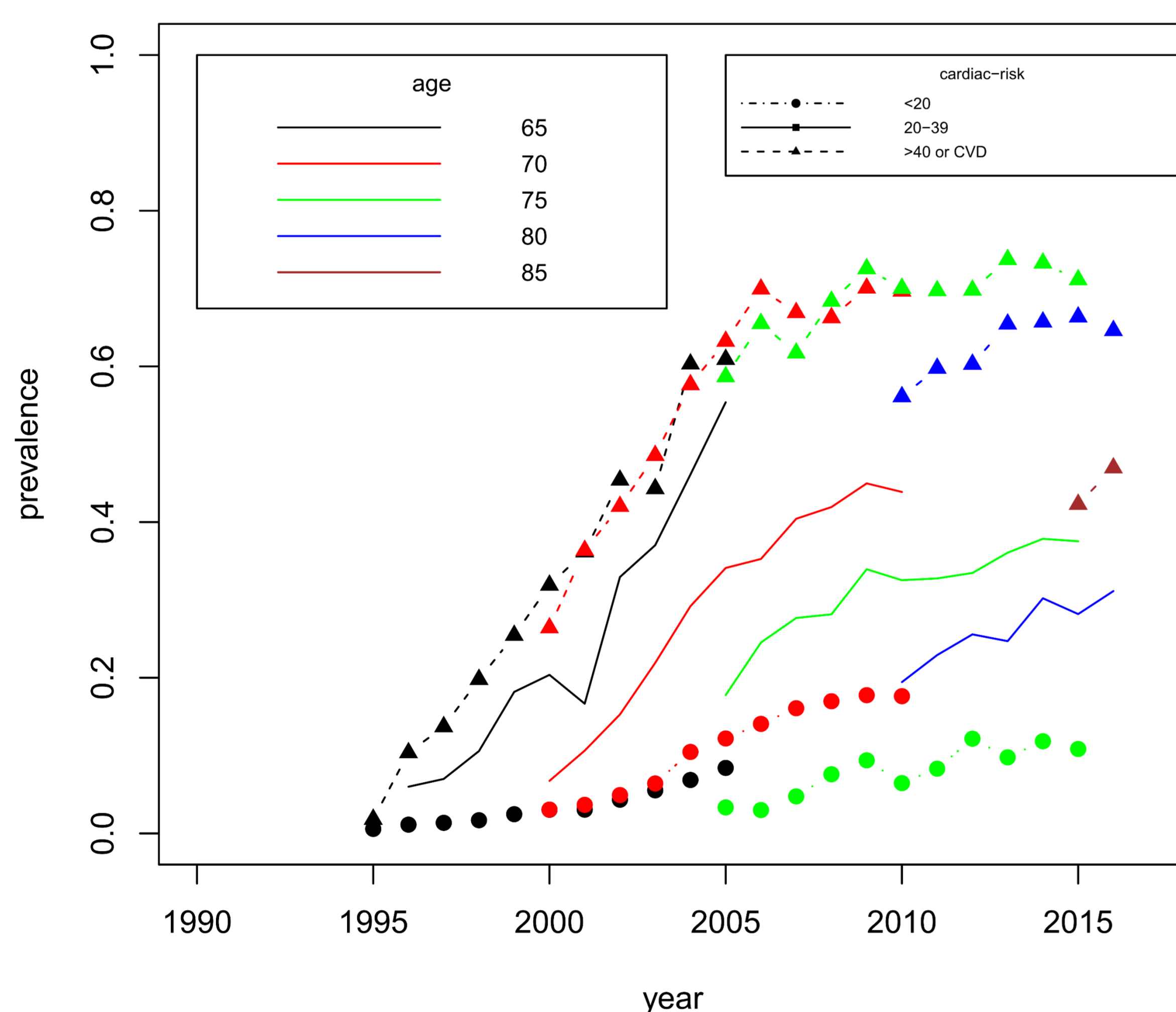
Dynamically predict the survival benefits associated with statin therapy over the course of 25 years in patients aged 60 residential in England or Wales.

Methods

- **Design** Population-based retrospective cohort study using medical records of the UK THIN primary care database for the years 1990-2017. Medical history observed at baseline age and updated every half a year (landmark) until end of follow-up.
- **Participants** Cohort including 110,000 patients who turned 60 in 1990-2000 and were neither diagnosed with cardiovascular disease nor prescribed statins.
- **Modelling** Hazard of all-cause mortality associated with current statin prescription estimated by Cox proportional hazards regression fitted at each landmark age. Adjusted landmark model included sex, year of birth, deprivation, cardiac risk, high cholesterol, and other related medical history.

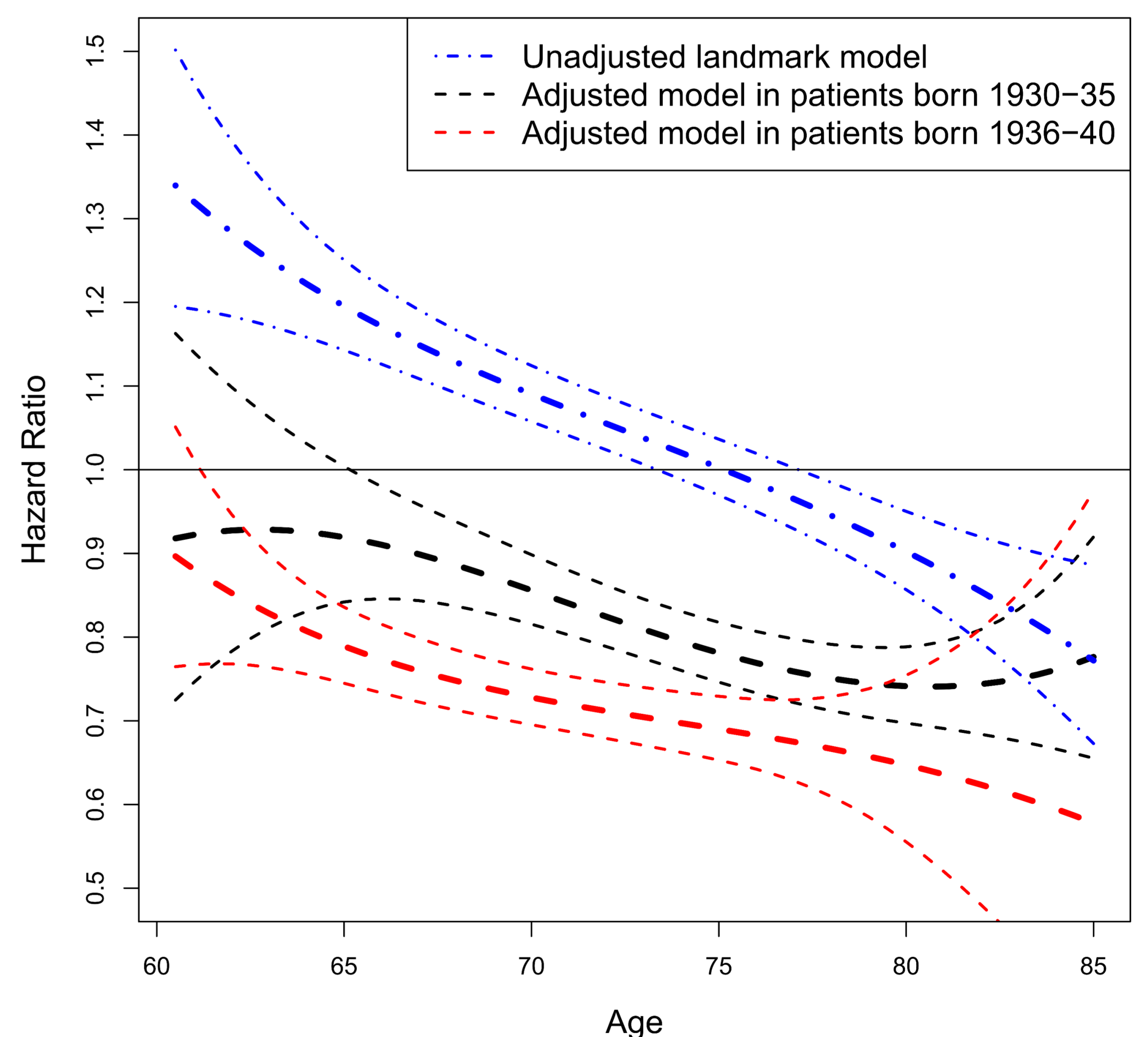
Results

statin prescription in female patients



- Prevalence of statin prescription differed by calendar year, age, sex and cardiac risk group. However, the survival benefits of statins only differed by age and birth cohort.

Hazard of all-cause mortality associated with statin prescription



Discussion and conclusion

- This study found that statin therapy was beneficial for survival, especially at older ages and in people born at later years. The survival benefit, however, did not differ by sex and cardiac risk group.
- This study used statin prescription as a proxy for statin intake. Lower intake than prescription would result in more conservative findings and thus imply that statins could be even more beneficial.
- This study adjusted for cardiac risk groups defined by the changing clinical guidelines on the eligibility of statin prescription. The study, however, did not distinguish between recommended types and doses of statins. This might explain why statin prescription was associated with greater survival benefits in patients born in later years.