In the absence of heart disease, smaller benefits from statins

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**Clinical Question**

Do patients without cardiovascular diseases benefit from statin therapy to lower their cholesterol?

**Bottom Line**

In patients without pre-existing heart disease, statin treatment of elevated low-density lipoprotein (LDL) cholesterol will decrease their risk of a first major coronary event and, to a lesser extent, a first cerebrovascular event. Overall mortality and mortality related to heart disease will not be affected by treatment.

**Level of evidence**

1a: Systematic review (with homogeneity) of randomized controlled trials

- **Study design**: Meta-analysis (randomized controlled trials)
- **Funding**: Unknown/not stated
- **Setting**: Various (meta-analysis)
- **Synopsis**: For patients without cardiovascular disease, the effect of cholesterol lowering on the outcomes that matter is much less than for patients with cardiovascular disease. This meta-analysis combined the results of 7 studies involving almost 43,000 patients.

To find these studies, the authors searched 4 databases, focusing only on randomized studies of statins compared with a control drug for patients without known heart disease. The studies had to be of at least 1 year in duration and report at least 100 cardiovascular outcomes during the study. Two investigators independently extracted the data.

Patients in the studies were between 55 and 74 years of age; the majority were male. The mean LDL cholesterol level was 147 mg/dL (3.82 mmol/L) and it was reduced an average of 26% during the study. The likelihood of a major coronary event significantly decreased with statin therapy over an average 4.3 years of treatment (number needed to treat=73; 95% confidence interval [CI], 56–104). Major cerebrovascular events also decreased, with 1 fewer event for every 281 patients treated (95% CI, 157–1309).

Overall mortality and mortality related to heart disease were not affected by treatment. This is not likely to be a result of small numbers of deaths, since an average 6.6% of people in the control group died, which is similar to the incidence of major coronary events.