

## Statins Given for 5 Years for Heart Disease Prevention (With Known Heart Disease)

83 for mortality



### Benefits in NNT

83	1 in 83 were helped (life saved)
39	1 in 39 were helped (preventing non-fatal heart attack)
125	1 in 125 were helped (preventing stroke)



### Harms in NNT

50	1 in 50 were harmed (develop diabetes: The development of diabetes is one such unanticipated harm found in a recent large study and it seems likely therefore that this applies to the data above, although this is a best guess.)
10	1 in 10 were harmed (muscle damage)

## Source

[Thavendiranathan P. Primary prevention of cardiovascular disease with statin therapy. Arch Int Med. 2006; 166: 2307-13.](#)

[CTT Collaborators. Efficacy and safety of cholesterol-lowering treatment: prospective meta-analysis of data from 90 056 participants in 14 randomised trials of statins. Lancet. 2005; 366: 1267-1278.](#)

[Ridker et al. Rosuvastatin to prevent vascular events in men and women with elevated c-reactive protein. NEJM. 2008; 359\(21\): 2195-2207.](#)

<http://www.ncbi.nlm.nih.gov/pubmed/20167359>

## Efficacy Endpoints

Death, heart attacks, strokes

## Harm Endpoints

Rhabdomyolysis (muscle breakdown), cancer, diabetes

## Narrative

Statin medications are aimed at an enzyme in the cholesterol production pathway, and are therefore intended to reduce cholesterol. In some patients elevated cholesterol plays a role in the development of coronary artery disease and heart attacks, so the drugs are intended to reduce the chance of death by reducing heart attacks and strokes.

These data examine the effect of statins for people who have known heart disease or a history of stroke. The effectiveness of the statins is fairly consistent across studies in this group—they lower cholesterol in most people who took them. A few people will also avoid a heart attack or stroke by virtue of this change. After 5 years of daily statin therapy study subjects achieved a 1.2% lower chance of death, a 2.6% lower chance of heart attack, and a 0.8% lower chance of stroke. As a public health measure, this suggests that statins may have an identifiable effect, because while the chances of any one individual being affected are small (19 out of 20 people who took the drugs for five years saw no effect), when one million people take them roughly 45,000 people saw some benefit, while another 6,000 may see a harm.

## Caveats

Virtually all of the major statin studies were paid for and conducted by their respective pharmaceutical company. A long history of misrepresentation of data and occasionally fraudulent reporting of data suggests that these results are often much more optimistic than subsequent data produced by researchers and parties that do not have a financial stake in the results. These additional studies may however take years. Also, harm from these drugs is difficult to predict, partly because harms are often difficult to anticipate and are often poorly tracked. Such findings often come up years after new drugs have been on the market.

For our calculation of the risk of diabetes the answer likely lies between 0.4% and 4%, and we have chosen what we believe to be a conservative estimate of 2% as a midway point in this credible interval.

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