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## New Cholesterol Guidelines Offer Greater Accuracy



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According to a study published in *JAMA*, the 2013 cholesterol guidelines for determining statin eligibility are more accurate and efficient in identifying increased risk of cardiovascular disease events and presence of subclinical coronary artery disease as compared to guidelines from 2004.

The 2013 guidelines from the American College of Cardiology and the American Heart Association (ACC/AHA) establish 4 categories for statin treatment eligibility for adults 40 to 75 years of age. These include 10-year atherosclerotic cardiovascular disease (ASCVD) risk of 7.5 percent or higher. With these new recommendations in place, it is estimated that an additional 8.2 million adults in the U.S. would be eligible for statin treatment. The expansion has been controversial and some critics argue that the new guidelines overestimate the risk and may put millions of people on unnecessary statin treatment.

A study was conducted by Udo Hoffmann, M.D., M.P.H., of Massachusetts General Hospital and Harvard Medical School, Boston, and colleagues to determine whether the ACC/AHA guidelines improve identification of individuals who develop incident CVD and/or have coronary artery calcification (CAC) compared with the National Cholesterol Education Program's Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (ATP III) guidelines. 2,435 participants, not taking lipid-lowering therapy were included in the study. All underwent multi-detector computed tomography for CAC between 2002 and 2005 and were followed up for a median of 9 years for new CVD.

There were a total of 74 (3 percent) incident CVD events (40 nonfatal heart attacks, 31 nonfatal strokes, and 3 with fatal coronary heart disease [CHD]) and 43 (2 percent) incident CHD events (40 nonfatal heart attacks and 3 with fatal CHD).

The researchers found that 39 percent of patients were eligible for statin treatment under the 2013 ACC/AHA guidelines as compared to 14 percent under the 2004 guidelines. 7 percent of those eligible for statin treatment by the ATP III guidelines developed incident CVD as compared to 2 percent among the non-eligible participants. 6 percent of the eligible participants developed incident CVD as compared to 1 percent among those not eligible. Hazard-ratio of having incident CVD was higher among statin-eligible participants as compared to noneligible participants when applying the ACC/AHA guidelines as compared to the ATP III guidelines.

The authors explain that if these findings were extrapolated to approximately 10 million U.S. adults who are newly eligible for statins, an estimated 41,000 to 63,000 incident CVD events could be prevented over a 10-year period if the new guidelines were adopted. They also note that the absolute cardiovascular event risk of statin-noneligible adults is not much lower with the ACC/AHA guidelines (1 percent) compared with the ATP III guidelines (2.4 percent). Finally, the ACC/AHA guidelines identify many more statin-eligible participants with a similarly high event rate as the ATP III guidelines (6.3 percent vs 6.9 percent).

A microsimulation model-based analyses also suggests that the health benefits associated with the 10-year atherosclerotic cardiovascular disease risk threshold of 7.5 percent or higher used in the 2013 ACC-AHA cholesterol guidelines are worth the additional costs.

In a cost-effectiveness analysis conducted by Ankur Pandya, Ph.D., of the Harvard T.H. Chan School of Public Health, Boston, and colleagues, a microsimulation model was used where hypothetical individuals from a representative U.S. population 40 to 75 years of age received statin treatment, experienced ASCVD events, and died from ASCVD-related or non-ASCVD-related causes based on ASCVD natural history and statin treatment parameters. Data sources for model parameters included National Health and Nutrition Examination Surveys, large clinical trials and meta-analyses for statin benefits and treatment, and other published sources.

The analysis showed that the current ASCVD threshold of 7.5 percent or higher, had an incremental cost-effectiveness ratio (ICER) of \$37,000/quality-adjusted life-year (QALY) compared with a 10 percent or higher threshold while the previous thresholds of 4.0 percent or higher (61 percent of adults treated) and 3.0 percent or higher (67 percent of adults treated) had ICERs of \$81,000/QALY and \$140,000/QALY, respectively. In other words, under the new threshold, approximately 125,000 to 160,000 CVD events could be averted.

According to Philip Greenland, M.D., of the Northwestern University Feinberg School of Medicine, Chicago, and Senior Editor, *JAMA*, and Michael S. Lauer, M.D., of the National Heart, Lung, and Blood Institute, Bethesda, Md., the evidence clearly indicates that statins are both effective and cost-effective for the primary prevention of CVD among low-risk individuals. While lifestyle interventions should be employed as well, a statin drug may also be required to minimise the risk in some people.

Source: [JAMA](#)

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