

Findings suggest lipid assessment in vascular disease can be simplified, without the need to fast

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Lipid assessment in vascular disease can be simplified by measuring either total and HDL cholesterol levels or apolipoproteins, without the need to fast and without regard to triglyceride levels, according to a study in the November 11 issue of *JAMA*.

Reliable assessment of the associations of major blood lipids and apolipoproteins with the risk of vascular disease is important for the development of screening and therapeutic strategies, according to background information in the article. "Expert opinion is divided about whether assessment of apolipoprotein AI (apo AI) and apolipoprotein B (apo B) should replace assessment of high-density lipoprotein cholesterol (HDL-C) and total cholesterol levels in assessment of vascular risk. Although there is agreement about the value of reducing low-density lipoprotein cholesterol (LDL-C or, approximately analogously, non-high-density lipoprotein cholesterol [non-HDL-C]), uncertainty persists about the merits of modification or measurement of triglycerides or HDL-C," the authors write.

John Danesh, F.R.C.P., of the Emerging Risk Factors Collaboration Coordinating Centre, University of Cambridge, United Kingdom, and colleagues conducted a study to estimate of the associations of major lipids and apolipoproteins in relation to [coronary heart disease](#) (CHD) and [ischemic stroke](#). The study included data on 302,430 individuals without initial vascular disease from 68 long-term prospective studies,

mostly in Europe and North America. During the follow-up periods, there were 8,857 nonfatal myocardial infarctions (heart attacks), 3,928 CHD deaths, 2,534 ischemic strokes, 513 hemorrhagic strokes and 2,536 unclassified strokes.

The researchers write that the analysis indicated several findings. "First, hazard ratios (HRs) with non-HDL-C and HDL-C were nearly identical to those seen with apo B and apo AI. This finding suggests that current discussions about whether to measure cholesterol levels or apolipoproteins in vascular risk assessment should hinge more on practical considerations (e.g., cost, availability, and standardization of assays) than on major differences in strength of epidemiological associations."

"Second, HRs for vascular disease with lipid levels were at least as strong in participants who did not fast as in those who fasted. Third, HRs were similar with non-HDL-C as with directly measured LDL-C. Finally, in contrast with previous findings based on much less data, triglyceride concentration was not independently related with CHD risk after controlling for HDL-C, non-HDL-C, and other standard risk factors, including null findings in women and under nonfasting conditions. Hence, for population-wide assessment of vascular risk, triglyceride measurement provides no additional information about vascular risk given knowledge of HDL-C and total cholesterol levels, although there may be separate reasons to measure triglyceride concentration (e.g., prevention of pancreatitis)."

"The current analysis of more than 300,000 people has demonstrated that lipid assessment in vascular disease can be simplified by measurement of either cholesterol levels or apolipoproteins without the need to fast and without regard to triglyceride," the authors conclude.

More information: *JAMA*. 2009;302[18]:1993-2000.

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