

Doctors are failing to lower heart patients' cholesterol adequately

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Only half of all patients at high risk of heart disease are given correct targets for lowering their cholesterol levels according to a study of 25,250 patients in Germany published online today in the *European Heart Journal*.

The study investigated the way primary care doctors assessed their patients' risk factors and other health problems when deciding on cholesterol-lowering targets, and although the research focused on German doctors and their patients, the authors believe that it reflects a similar picture in the rest of Europe. They say that approximately 50-80 fewer heart attacks, strokes and heart disease-related deaths per 1000 patients over a 10-year period could be avoided if all doctors followed the example of the best doctors who adhered to the guidelines on cholesterol-lowering targets.

[Cholesterol](#) is a fatty substance known as a lipid and it is carried in the blood on proteins called low-density lipoproteins (LDL). Having high cholesterol levels (hyperlipidaemia) is a major risk factor for the development of blocked arteries (atherosclerosis) and heart disease, and, therefore, lowering cholesterol via drugs, diet and other lifestyle measures, is an important preventative measure.

The researchers found that in a survey of 907 doctors, involving 25,250 patients, just over half of male patients (55%) and less than half (49%) of female patients were assigned correct LDL targets. Patients were more likely to be given correct targets if they had a history of heart

attacks, coronary artery disease, with or without [bypass surgery](#), and diabetes. However, doctors were more likely to underestimate women's risk and assign them incorrect targets. For instance, despite an identical history with a recent [heart attack](#), nearly 68% of men and only 60% of women were given correct treatment targets for LDL lowering.

Professor Heribert Schunkert, who led the research, said that if more doctors followed existing guidelines on cholesterol-lowering targets they could prevent a greater number of heart disease-related incidents such as heart attacks, strokes and deaths.

"We know already that statin therapy can reduce the 10-year incidence of major coronary events by about 30-40 percent per 40 mg/dl [milligrams per decilitre] reduction in LDL cholesterol. In our study we observed an average difference in LDL target levels of just over 17 mg/dl between physicians with the least and best guideline knowledge, and this difference will certainly lead to a sizeable difference in major heart-related problems. In the high risk patients in our study, such a difference in LDL cholesterol translates into approximately 13-17 percent fewer events, or, in a rough calculation, about 50 to 80 fewer heart attacks, strokes and cardiovascular deaths per 1000 patients in 10 years in the group of patients treated by the best physicians who are adhering to the guidelines on cholesterol-lowering targets. While this may be a rough estimate, the numbers highlight the enormous health implications reflected in our findings," said Prof Schunkert, who is a clinical cardiologist and head of the Medizinische Klinik II (medical clinic II) at the Universitätsklinik Schleswig Holstein, Lübeck, Germany.

The average level of cholesterol in the German adult population is approximately 140 mg/dl. For patients with heart disease, 140 mg/dl is already higher than it should be, and they require treatment, for instance with statins, to bring cholesterol levels down. The higher the patient's risk of heart disease, the lower the LDL cholesterol targets should be.

LDL targets are supposed to be less than 100 mg/dl for patients with a history of heart attacks, [coronary artery disease](#), coronary artery bypass grafting, peripheral artery disease, stroke, diabetes, transient ischaemic attacks or a greater than 20% 10-year risk of a heart disease-related event. LDL targets of less than 130 mg/dl apply to patients with two or more vascular risk factors such as diabetes, stroke or peripheral artery disease; and LDL targets of less than 160 mg/dl apply to patients with no, or only one, vascular risk factor and a 10-year risk of heart disease of less than 10%.

Prof Schunkert and his colleagues found that the highest percentage of patients with correctly assigned cholesterol-lowering targets were to be found in the group with LDL targets of less than 100 mg/dl (57.4% correct out of a total of 17,227 patients). Men who had previously suffered heart attacks were the most likely to be assigned a correct target of less than 100 mg/dl (77.1%). For patients assigned a target of less than 130 mg/dl or less than 160 mg/dl, only 41.7% were correct out of a total of 5,551 and 2,472 patients respectively.

Prof Schunkert said: "Our study focused on cholesterol treatment of patients in Germany, and, more specifically, the awareness of primary care physicians for how patients' characteristics affect LDL target values. Even though confined to one nation, the study may highlight similar scenarios in other European countries and those around the world. In fact, similar data were reported from Italy. The core question involves the perception of patient risk: for example, women are often perceived as having a lower cardiovascular risk compared to their real risk, and this may lead to insufficient treatment. This aspect has also been reported in other regions of the world.

"We hope that the data from our study will remind physicians of the need to observe relevant guidelines to calculate individually every patient's target value, so that they can deliver the best possible care to all

their patients."

He said there might be a number of reasons why doctors failed to follow guidelines correctly. "I am afraid to say that women are simply overlooked by their physicians, when it comes to cardiovascular risk. Moreover, not all physicians believe in the concept of risk reduction by LDL modification, although the evidence is overwhelming. Their reasons may be multifactorial: some might be confused by different, changing and frequently updated guidelines and some may simply lack time to spend on their patients in primary care. Physicians may need more assistance in determining the risk of their patients, for instance with nurse practitioners or computer programs calculating the risk from the patients' electronic file notes.

"We believe efforts should be made to make guidelines simpler and easier to understand and follow; instruments to identify high-risk patients more easily should be developed; and special attention should be paid to women and patients without known cardiovascular disease, but with an accumulation of risk factors, since both groups appear frequently to escape the notice of doctors for aggressive cholesterol-lowering treatment."

Speaking on behalf of the European Society of Cardiology, Professor Ian Graham, consultant cardiologist at the Adelaide and Meath Hospital, Dublin, Ireland, who was unconnected with the study, said: "Cholesterol in the blood is a risk factor for heart attack. This interesting study suggests that about one half of German primary care physicians have difficulty in assigning appropriate therapeutic target values for LDL cholesterol in subjects with raised blood cholesterol levels. If the target is not clear, less adequate therapy is likely. The study used American target levels for LDL and the situation may be worse than this because European target values for LDL cholesterol are slightly more stringent than American ones.

"These finding will be of value to the ESC's Prevention Implementation Committee in its efforts to promote guideline knowledge and usage throughout Europe, as well as to all involved in medical education at undergraduate and postgraduate level. In some countries, physician reimbursement is dependent upon achieving risk factor targets which may also be an incentive."

More information: "Physicians' perception of guideline-recommended low-density lipoprotein target values: characteristics of misclassified patients." European Heart Journal.
[doi:10.1093/eurheartj/ehq026](https://doi.org/10.1093/eurheartj/ehq026)

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