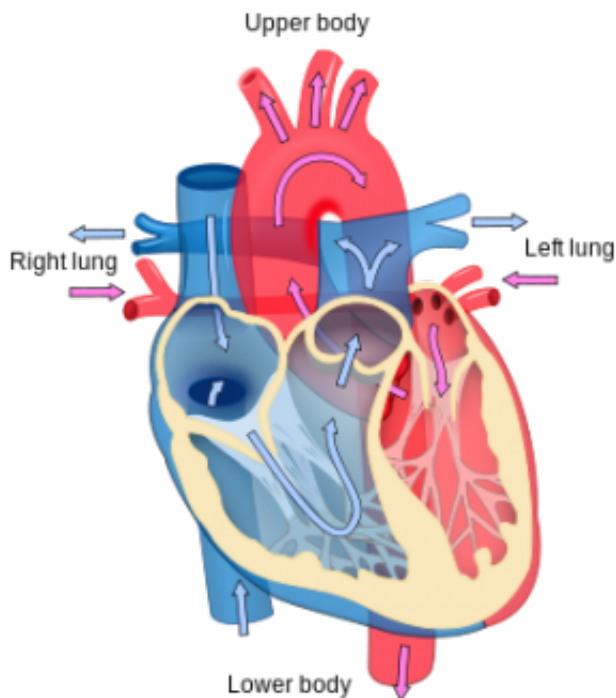


# Visualizing calcified coronary arteries may be wake-up call to change lifestyle

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Heart diagram. Credit: Wikipedia

Looking at images of their own calcified coronary arteries may be a wake-up call for patients with newly diagnosed coronary artery disease to change their lifestyles, reveals new research. The study was presented today at EuroHeartCare 2015 by Rikke Elmose Mols, a nurse and Ph.D. student in the Department of Cardiology at Aarhus University Hospital-Skejby in Denmark.

"It is my coronary artery and my coronary artery calcification and I am facing a real risk and challenge," said one patient.

EuroHeartCare is the official annual meeting of the Council on Cardiovascular Nursing and Allied Professions (CCNAP) of the European Society of Cardiology (ESC). The 2015 meeting is held 14 to 15 June in Dubrovnik, Croatia, in collaboration with the Croatian Association of Cardiology Nurses.

Ms Mols said: "Patients with non-obstructive [coronary artery disease](#) and hyperlipidaemia (high blood lipids) urgently need to improve their lifestyles and take lipid-lowering therapy to reduce their risk of future cardiovascular adverse events. Some patients call us after coronary computed tomography angiography (CTA)<sup>1</sup> if the result is non-obstructive coronary artery disease. They are afraid of a heart attack and have questions about the prescribed lipid-lowering drugs and how to manage their increased risk."

She added: "When patients receive a new diagnosis of non-obstructive coronary artery disease it might be a good time to motivate them to take their lipid-lowering therapy and adopt a healthy lifestyle. But until now there has not been a study on the impact of showing consecutive patients with atypical angina images of their calcified coronary arteries as a way to stimulate change."

The aim of the current prospective, randomised controlled study was to assess the influence of visualisation of [coronary artery calcification](#) in addition to standard information about risk and lifestyle modification on plasma cholesterol concentrations and other [risk factors](#) in patients with hyperlipidaemia and a new diagnosis of non-obstructive coronary artery disease.

The study included 189 patients with hyperlipidaemia who had

undergone a CTA of their coronary arteries and been diagnosed with non-obstructive coronary artery disease. Patients were prospectively randomised in a 1:1 fashion to the intervention or to standard follow up in general practice which consisted of information about risk and lifestyle modification. Risk factors were measured at baseline and 6 months.

The intervention was a 25 minute consultation with a nurse. The first 15 minutes focused on communication of risk. Patients were shown a CT image of their calcified coronary arteries. The nurse explained the association between coronary artery calcification and the increased risk of future adverse cardiovascular events. The nurse also described the relationship between [cardiovascular risk factors](#) and the development of coronary artery calcification. Ten minutes were then devoted to giving advice about statins, aspirin, blood pressure, healthy diet, physical activity and smoking cessation based on ESC prevention guidelines.<sup>2,3</sup>

After excluding patients who discontinued statin therapy due to side effects (20 in the control group, 22 in the [intervention group](#)) the researchers found a significantly greater reduction in plasma total cholesterol concentrations in the intervention group compared to controls (1.71 mmol/L vs. 1.44 mmol/L,  $p = 0.027$ ).

More patients in the control group continued smoking (22% vs. 9%,  $p = 0.014$ ) and eating an unhealthy diet (64% vs. 44%,  $p = 0.005$ ). The intervention group lost 1.5 kg on average while the control group gained an average of 0.5 kg ( $p = 0.001$ ). There was a tendency towards a higher degree of adherence to statin therapy in the intervention group ( $p = 0.056$ ).

Ms Mols said: "Seeing their calcified coronary arteries on the CT image was clearly an eye-opener for patients. We received comments such as, 'It is my coronary artery and my coronary [artery calcification](#) and

I am facing a real risk and challenge'. This may be the wake-up call patients need to take their medication and modify their behaviours to reduce their risk of having a [coronary artery](#) event."

She added: "We found that patients who looked at images of their calcified coronary arteries were more likely to stop smoking, lose weight, eat a healthy diet, take recommended statins and reduce their plasma cholesterol levels. The results of our study suggest that visualising their health threat motivates [patients](#) to make changes to reduce their risk. A large scale study is needed to confirm the findings and to determine the cost-effectiveness of implementing this intervention in clinical practice."

Provided by European Society of Cardiology

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