



## Statins Improve Heart Structure and Function



According to research presented at EuroCMR 2017, statins improve heart structure and function. The benefits of the drugs are thus above and beyond cholesterol management.

Lead author Dr Nay Aung, a cardiologist and Wellcome Trust research fellow, William Harvey Research Institute, Queen Mary University of London, UK explains that while statins are primarily used to lower cholesterol, they also have other beneficial, non-cholesterol lowering effects which include improving the function of blood vessels, reducing inflammation, and stabilising fatty plaques in the blood vessels. Studies in mice and small studies in humans also show that statins reduce the thickness of heart muscle but this finding still needs to be confirmed in a larger study.

This particular study included 4,622 people who had no cardiovascular disease. The objective was to investigate the association between statins and heart function and structure. Researchers used cardiac magnetic resonance imaging to measure left and right ventricular volumes and left ventricular mass. Data on statin use was obtained from both medical records and a self-reporting questionnaire. Researchers then assessed the relationship between statins and heart structure and function by using multiple regression and adjusting for potential confounders such as ethnicity, gender, age and BMI.

17% of the study participants were taking statins. Patients on statins were older and had higher BMI and blood pressure. They were also more likely to suffer from both diabetes and hypertension.

Findings showed that people who were on statins had a 2.4% lower left ventricular mass and lower left and right ventricular volumes. They were also less likely to have left ventricular hypertrophy and less likely to have a large heart chamber. Both these factors are a strong predictor of future heart attack, heart failure or stroke. The use of statins thus appeared to reverse the negative changes in the heart thus lowering the likelihood of adverse outcomes.

Dr. Aung also points out that study participants on statins were still at a higher risk of heart problems as compared to those not using statins. However, they had positive remodelling compared to the healthier control group. He also explains that previous studies have demonstrated that statins reduce oxidative stress and reduce the production of growth factors which stimulate cell growth. This could contribute to the beneficial effects. In addition, statins also increase the production of nitric oxide by the cells lining the blood vessels which leads to vasodilation, improved blood flow, lower blood pressure and lower stress on the heart.

These findings raise the question as to whether statin prescriptions should be extended to anyone over the age

of 40 but Dr. Aung advises against that. He says that there are clear guidelines on who should receive statins and there is no need to follow a blanket prescription policy but instead we should identify patients who are most likely to benefit from these drugs.

Dr Aung said: "A dual approach should be considered to identify people who will benefit most from statins. That means looking at not only clinical risk factors such as smoking and high blood pressure, but also genetic (hereditary) factors which can predict individuals' response to statins. This is an area of growing interest and one that we are also investigating in our lab with our collaborators."

Source: [European Society of Cardiology](#)

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