

Study strengthens links between red meat and heart disease

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An observational study in nearly 20,000 individuals has found that greater intake of red and processed meat is associated with worse heart function. The research is presented at ESC Preventive Cardiology 2021,

an online scientific congress of the European Society of Cardiology (ESC).

"Previous studies have shown links between greater red [meat](#) consumption and increased risk of [heart](#) attacks or dying from [heart disease](#)," said study author Dr. Zahra Raisi-Estabragh of Queen Mary University of London, UK. "For the first time, we examined the relationships between meat consumption and imaging measures of heart health. This may help us to understand the mechanisms underlying the previously observed connections with [cardiovascular disease](#)."

The study included 19,408 participants of the UK Biobank. The researchers examined associations of self-reported intake of red and processed meat with heart anatomy and function.

Three types of heart measures were analysed. First, [cardiovascular magnetic resonance](#) (CMR) assessments of heart function used in clinical practice such as volume of the ventricles and measures of the pumping function of the ventricles. Second, novel CMR radiomics used in research to extract detailed information from heart images such as shape and texture (which indicates health of the heart muscle). Third, elasticity of the blood vessels (stretchy arteries are healthier).

The analysis was adjusted for other factors that might influence the relationship including age, sex, deprivation, education, smoking, alcohol, exercise, high blood pressure, high cholesterol, diabetes, and body mass index (BMI) as a measure of obesity.

The researchers found that greater intake of red and processed meat was associated with worse imaging measures of heart health, across all measures studied. Specifically, individuals with higher meat intake had smaller ventricles, poorer heart function, and stiffer arteries—all markers of worse cardiovascular health.

As a comparison, the researchers also tested the relationships between heart imaging measures and intake of oily fish, which has previously been linked with better heart health. They found that as the amount of oily fish consumption rose, heart function improved, and arteries were stretchier.

Dr. Raisi-Estabragh said: "The findings support prior observations linking red and processed [meat consumption](#) with heart disease and provide unique insights into links with heart and vascular structure and function."

The associations between imaging measures of heart health and meat intake were only partially explained by [high blood pressure](#), high cholesterol, diabetes, and obesity.

"It has been suggested that these factors could be the reason for the observed relationship between meat and heart disease," said Dr. Raisi-Estabragh. "For example, it is possible that greater red meat intake leads to raised blood cholesterol and this in turn causes heart disease. Our study suggests that these four factors do play a role in the links between meat intake and heart health, but they are not the full story."

She noted that the study did not look into alternative mechanisms. But she said: "There is some evidence that red meat alters the gut microbiome, leading to higher levels of certain metabolites in the blood, which have in turn been linked to greater risk of heart disease."

Dr. Raisi-Estabragh said: "This was an [observational study](#) and causation cannot be assumed. But in general, it seems sensible to limit intake of red and processed meat for heart health reasons."

More information: Abstract title: Higher consumption of red and processed meat is associated with adverse cardiovascular magnetic

resonance morpho-functional phenotypes: A study of 19,408 UK Biobank participants.

Provided by European Society of Cardiology

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