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Study finds 'healthy' obese people more likely to develop heart failure than those of normal weight

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Adults who are obese but appear healthy (without common metabolic abnormalities such as high blood pressure, abnormal blood fats, or

diabetes) are not at greater risk of heart attack, stroke, or cardiovascular death than healthy individuals of normal weight, but they are around 33% more likely to develop heart failure and the heart rhythm condition, atrial fibrillation, according to a nationwide study from France that followed nearly 3 million hospital patients (aged 18 and older) for at least 5 years.

The findings, being presented at the Annual Meeting of the European Association for the Study of Diabetes (EASD), held online this year (27 Sept-1 Oct), also indicate that heart failure risk was especially high in metabolically unhealthy individuals, regardless of their weight.

"This new and best available evidence tells us that on a population level, the idea that large numbers of people can be obese but metabolically healthy is simply untrue", says lead author Dr. Laurent Fauchier from Centre Hospitalier Universitaire Trousseau, Tours, France. "Encouraging weight loss in people with obesity, regardless of whether or not they are metabolically healthy, will help prevent atrial fibrillation and heart failure. Our findings also highlight the importance of preventing poor metabolic health, and suggest that even normal weight individuals may benefit from early behavioural and medical management to improve their diet and increase physical activity in order to guard against stroke."

Obesity (BMI of more than 30kg/m^2) affects almost all of the cardiovascular disease risk factors, particularly those related to metabolic syndrome including high blood pressure, poor blood sugar control or diabetes, and abnormal blood fats, which double the risk of cardiovascular disease such as heart attacks and stroke. However, some people with obesity seem to be free of these metabolic abnormalities—estimates suggest as many as a third of obese people might be metabolically healthy.

Whether this so called 'metabolically health obesity' is associated with a

higher risk of cardiovascular disease has been debated for many years, and research so far has produced conflicting results. It remains unclear how weight and metabolic status affect the development of different cardiovascular events in both healthy and obese individuals, due to limitations of previous studies including: lack of analyses of different cardiovascular disease events and the lack of adjustment for confounding factors such as age, sex and history of smoking.

To investigate this further, researchers analysed medical records of all patients admitted to French hospitals between January and December 2013 with at least 5 years of complete follow-up data. Around 2.9 million adults (of whom 272, 838 [9.5%] had obesity) who had not had a major cardiovascular event (ie, heart attack, ischaemic stroke, or heart failure) and were not underweight at the start of the study were divided into groups by BMI category and metabolic health (whether they had three metabolic abnormalities—high blood pressure, unusually high levels of cholesterol and other fats in the blood, or diabetes). Participants who had none of these abnormalities were classed as having 'metabolically healthy obesity'. The researchers adjusted for several factors that could have influenced the results including age, sex, and smoking status.

During an average follow-up of 5 years, 510,439 new major cardiovascular events were recorded, including 77,924 heart attacks, 391,637 cases of heart failure, 84,042 strokes, and 100,633 cardiovascular disease deaths. In addition, 257,287 patients developed atrial fibrillation.

The analysis found that people with metabolically healthy obesity had a 22% higher risk of having a new major cardiovascular event than people of normal weight with no metabolic abnormalities. They also had a 34% increased risk of developing heart failure and 33% greater likelihood of developing atrial fibrillation—which can substantially impair quality of

life and lead to stroke. However, they did not have a higher risk of heart attack, stroke, or cardiovascular death then metabolically healthy people of normal weight.

Importantly, the analysis also showed that men face higher risks than women—compared to normal weight men with no metabolic abnormalities, men with metabolically healthy obesity had a 61% higher risk of cardiovascular events; while women with metabolically healthy obesity were 50% less likely to suffer heart attack than those of normal weight.

The authors acknowledge that their findings show observational associations rather than cause and effect. They note some limitations, including that the study included people taken from one country with a predominately white Caucasian population, so the findings cannot be generalised to all ethnic groups in other countries. They also note that they were unable to account for some potential confounders such as socioeconomic status, physical activity, diet, and metabolic control (eg, blood sugar levels, blood pressure, BMI), that may have influenced the results.

Provided by Diabetologia

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