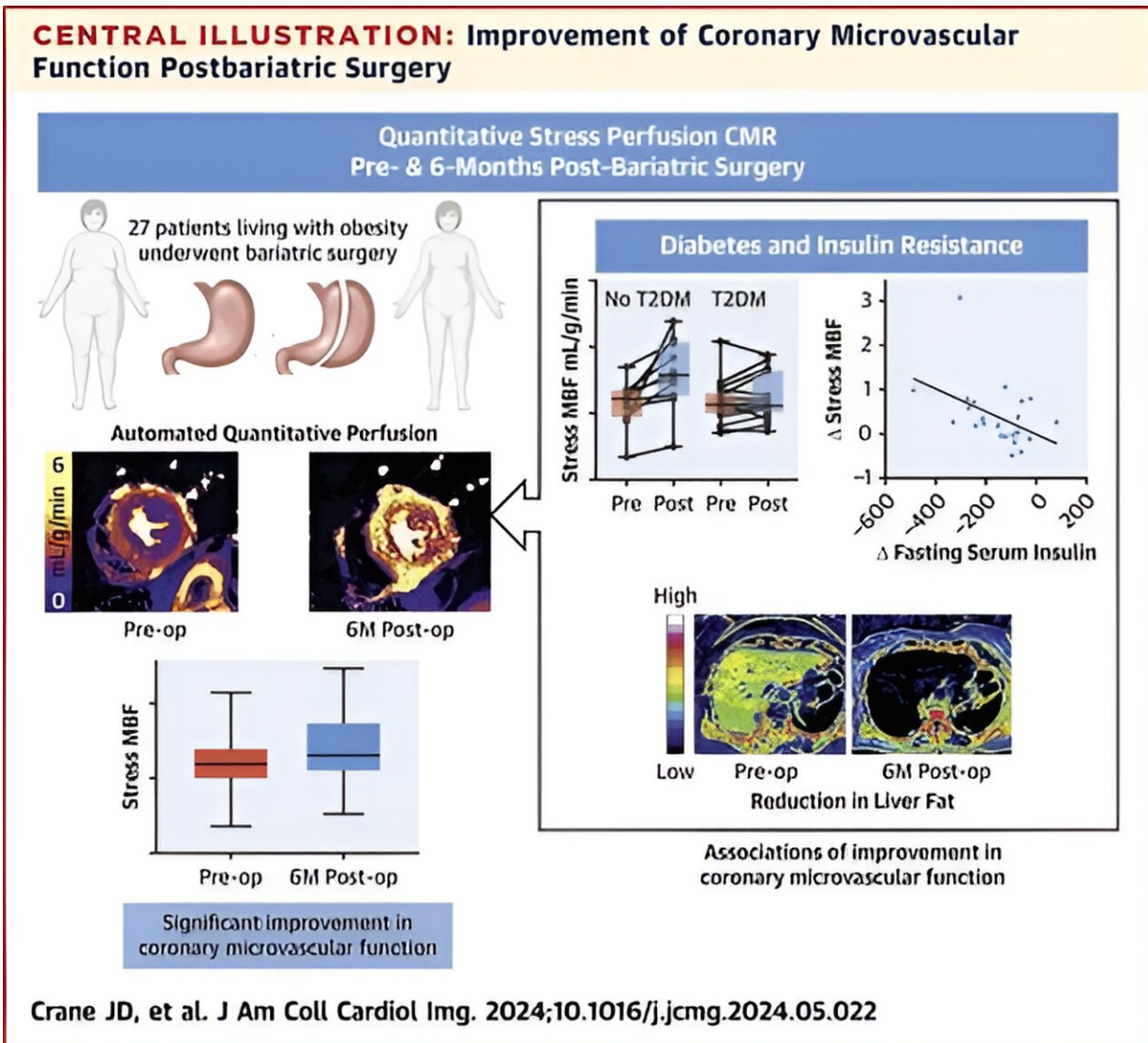


Weight loss surgery could cut heart failure risk

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Credit: *JACC: Cardiovascular Imaging* (2024). DOI: 10.1016/j.jcmg.2024.05.022

Weight loss surgery may reduce the risk of developing heart failure for people living with obesity by improving blood flow through their heart muscle, according to a new study led by UCL researchers.

People living with obesity are at increased risk of [heart failure](#). It's thought that this may be due, in part, to reduced blood flow through the small vessels in their hearts.

The study, from UCL and King's College London researchers, [published](#) in *JACC: Cardiovascular Imaging*, suggests that these harmful effects of obesity may be at least partly reversible.

Heart scans from 27 patients showed that, six months after [bariatric surgery](#), blood flow through these [small blood vessels](#) had increased, alongside improvements in other well-known risk factors for developing [heart disease](#).

Professor Charlotte Manisty (UCL Institute of Cardiovascular Science), who led the study, said, "Previous research has suggested that [weight loss surgery](#) can reduce the risk of developing or dying from cardiovascular disease in people living with obesity. Our work provides a new, additional explanation for the benefits of this intervention."

Researchers scanned patients' hearts before, and six months after they underwent bariatric surgery. The team used a technique called quantitative perfusion [magnetic resonance imaging](#), which allowed them to measure blood flow through the smallest vessels in the heart muscle.

Before their surgery, patients had a median body mass index (BMI) of 44kg/m^2 . Compared to volunteers the same age and sex, and with an average BMI of 25, patients had thicker heart walls (a sign that the heart

is having to work harder to pump blood) and lower blood flow through their [heart muscle](#).

Six months after their surgery, patients had lost an average of 29 kg, and 13 of the 17 patients with type 2 diabetes before surgery were in remission at follow up.

When the team repeated the heart scans, they found that blood flow through patients' hearts had increased. In addition, levels of triglycerides (a type of fat) in patients' blood had decreased, while their levels of HDL ("good") cholesterol increased. Patients also had less fat around their livers (a marker of the levels of fat stored around the abdominal organs) and lower blood pressure than before their surgery.

Dr. George Joy (UCL Institute of Cardiovascular Science), who was also involved with the study, said, "These promising results offer important insights into how weight loss associated with bariatric surgery could help to improve outcomes for patients living with obesity.

"With trials of other approaches to weight loss, such as medications, also reporting positive effects on the heart, more research is now needed to understand whether similar mechanisms could be contributing to these effects."

Dr. Sonya Babu-Narayan, Associate Medical Director at the British Heart Foundation and consultant cardiologist, said, "This research yet again underlines the connection between obesity and the risk of developing heart disease. While not everyone will need surgery or medication to lose weight, it's important that weight-loss treatment and support are available to everyone who needs it.

"We know that the world around us doesn't always make it simple for the healthy option to be the easy, affordable and accessible option. We must

press ahead with actions that address our food environment, including implementing restrictions on junk food advertising, so that everyone is supported to maintain a healthy weight."

More information: James D. Crane et al, The Impact of Bariatric Surgery on Coronary Microvascular Function Assessed Using Automated Quantitative Perfusion CMR, *JACC: Cardiovascular Imaging* (2024). [DOI: 10.1016/j.jcmg.2024.05.022](https://doi.org/10.1016/j.jcmg.2024.05.022)

Provided by University College London

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