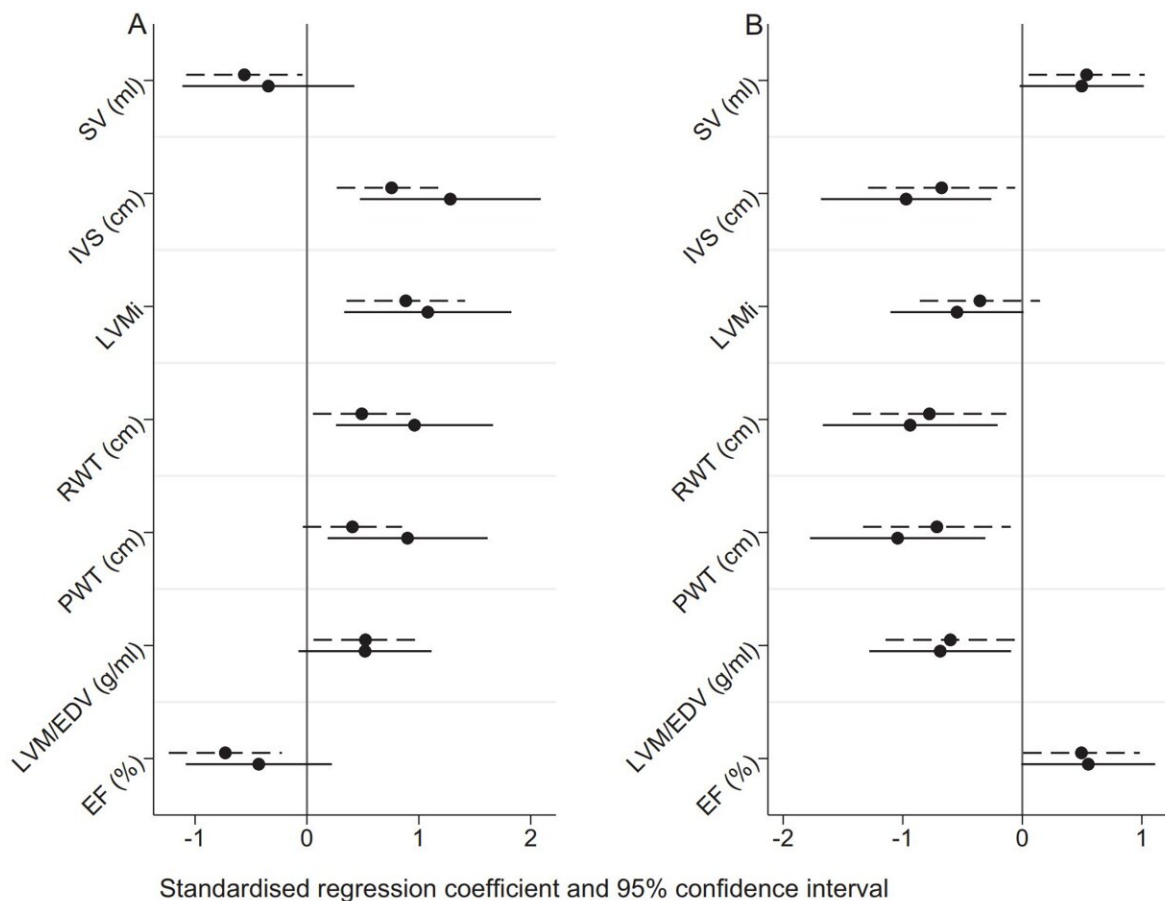


Diet and exercise for obese mothers protects against cardiovascular risk in infants

October 24 2022



Summary of Echocardiography parameters for Left Ventricular Geometry and function. Echocardiographic parameters in children showing A maternal obesity effect and B intervention effect. Difference in standard deviation (SD), plotted with 95% confidence intervals are unadjusted (dash line) and adjusted (solid line). A Mean differences associated with the UPBEAT standard care arm (n = 39) versus the normal BMI group [51] are shown on the left and B mean

differences associated with the UPBEAT intervention arm (n = 31) versus the UPBEAT standard care arm (n = 39) are shown on the right. Credit: *International Journal of Obesity* (2022). DOI: 10.1038/s41366-022-01210-3

A lifestyle intervention of diet and exercise in pregnancy protects against cardiovascular risk in infants, a new study has found.

The study, published recently in the *International Journal of Obesity* by researchers from King's College London, found that 3-year-old children were more likely to exhibit risk factors for future heart disease if their mother was clinically obese during [pregnancy](#). A behavioral lifestyle intervention reduced this risk.

In the UK, more than half the women attending antenatal care are clinically overweight or obese. There is increasing evidence to suggest that obesity in pregnancy is associated with cardiometabolic dysfunction in children, and that serious cardiovascular disease may begin in the womb.

The UPBEAT trial, conducted at Guy's and St Thomas' NHS Foundation Trust, randomized women with obesity (a BMI of over 30 kg/m²) in early pregnancy to a diet and exercise intervention or to standard pregnancy care.

The intervention included one-to-one counseling, restricting [dietary intake](#) of saturated fat, eating foods with a low glycemic index such as vegetables and legumes, moderate and monitored [physical activity](#) and tools to record exercise. The intervention arm saw improvements in [weight gain](#) in pregnancy, physical activity, a healthier diet, and a healthier metabolic profile across pregnancy.

Follow-up of the children at three years of age showed that children of women with clinical obesity had evidence of cardiac remodeling, a risk factor for future cardiovascular disease.

Changes included increased heart muscle thickness, elevated resting [heart rate](#), evidence of early impairment to the heart's relaxation function and increased sympathetic nerve activity ('fight or flight' response) compared to women of normal weight. The children of women who were allocated to the intervention arm were protected from these early changes in heart structure and function.

Study lead Dr. Paul Taylor, from King's College London, says that "maternal obesity appears to adversely impact the developing fetal nervous system and fetal heart development which is apparent up to 3 years-of-age. A complex lifestyle [intervention](#) in pregnancy was associated with protection against cardiac remodeling in infants. We can hypothesize that these changes to the heart and its function will get worse over time, putting the child at increased risk of cardiovascular disease in the future."

The study suggests that maternal obesity may have a lasting impact on the child's cardiovascular health. Promoting dietary changes and physical activity during pregnancy may reduce this risk.

More information: Paul D. Taylor et al, Lifestyle intervention in obese pregnancy and cardiac remodelling in 3-year olds: children of the UPBEAT RCT, *International Journal of Obesity* (2022). [DOI: 10.1038/s41366-022-01210-3](https://doi.org/10.1038/s41366-022-01210-3)

Provided by King's College London

Citation: Diet and exercise for obese mothers protects against cardiovascular risk in infants (2022, October 24) retrieved 21 June 2024 from <https://medicalxpress.com/news/2022-10-diet-obese-mothers-cardiovascular-infants.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.