

# Healthy diet and exercise during pregnancy could lead to healthier children, study finds

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New research shows improving the lifestyle of women with obesity during pregnancy could mean long-term cardiovascular benefits for their children.

The study, led by King's College London and supported by the British

Heart Foundation and Tommy's charity, examined how an antenatal [diet](#) and physical activity [intervention](#) in [pregnant women](#) with obesity could positively influence the [health](#) of the [women](#) and their [children](#) three years after giving birth.

The UPBEAT trial is a randomized controlled trial which aims to improve the diet and physical activity of obese pregnant women across the UK. Women who were given a diet and exercise intervention were compared to women in a control group, who made no changes to their lifestyle during [pregnancy](#).

Follow-up examinations three years after birth showed that the children born to the intervention arm of the trial had a lower resting [heart](#) rate of -5 bpm than children treated with standard care. A higher resting heart rate in adults is associated with hypertension and cardiovascular dysfunction.

The study also showed that mothers in the intervention arm maintained a healthier diet three years after birth.

While women reported lower glycaemic load, maternal energy and saturated fatty acids intake, and higher protein intake three years after delivery, there were no differences in self-reported physical activity or in measures of body composition.

Lead author Kathryn Dalrymple from King's College London said, "This research shows that an lifestyle intervention in pregnant women, which focused on improving diet and increasing physical activity, is associated with improved cardiovascular function in the child at three-years of age and a sustained improvement in the mothers diet, three years after the intervention finished. These findings are very exciting as they add to the evidence that pregnancy is a window of opportunity to promote positive health and lifestyle changes which benefit the mother and her child."

Senior author Professor Lucilla Poston, Tommy's Chair for Maternal and Fetal Health, commented "Obesity in pregnancy is a major problem because it can increase the risk of complications in pregnancy as well as affecting the longer-term health of the child. This study strengthens my resolve to highlight just how important it is that we give children a healthy start in life."

Tommy's Research and Policy Director, Lizzie D'Angelo, said, "Pregnancy can be higher risk for women who are obese, but trying to lose lots of weight while pregnant is not advised, so our research focuses on finding new ways to make pregnancy safer for these families. It's very reassuring to see that our researchers have been able to improve mothers' diets and children's heart health in the long term, helping to give these babies the best start in life."

Tracy Parker, Senior Dietitian at the British Heart Foundation, concluded: "Keeping physically active and maintaining a balanced diet are both important ways of keeping our hearts healthy. This research shows that for pregnant women, the benefits don't end there. A healthy diet before, during and after pregnancy can have positive long-term health benefits for both mother and child."

The team of researchers will follow-up these children again at 8-10 years of age to see if this improvement in cardiovascular function is maintained through childhood.

**More information:** Kathryn V. Dalrymple et al. Adiposity and cardiovascular outcomes in three-year-old children of participants in UPBEAT, an RCT of a complex intervention in pregnant women with obesity. *Pediatric Obesity*. First published: 11 September 2020

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