

# Either too much or too little weight gain during pregnancy is associated with adverse outcomes in children aged 7 years

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New research published in *Diabetologia* (the journal of the European Association for the Study of Diabetes [EASD]) shows that if a woman gains either too much or too little weight during pregnancy, there are adverse effects in children at 7 years of age. The study is by Professor Wing Hung Tam and Professor Ronald C.W. Ma, at The Chinese University of Hong Kong, Shatin, Hong Kong, and colleagues.

There have been various studies on the effects of [weight gain](#) during pregnancy (gestational [weight](#) gain or GWG), however data on the metabolic effects in the children subsequently born have not been comprehensively studied. This study aims to evaluate the relationship between GWG and [cardiometabolic risk](#) in offspring aged 7 years.

The study included a total of 905 mother-child pairs who were enrolled in the follow-up visit of the multicentre Hyperglycemia and Adverse Pregnancy Outcome study, at the study centre in Hong Kong. Women were classified as having gained weight below, within or exceeding the 2009 Institute of Medicine (IOM) guidelines. Also factored in the study were standardised GWG values based on pre-pregnancy body-mass index (BMI).

Among the 905 women, the mean pre-pregnancy BMI was 21 kg/m<sup>2</sup>, the total prevalence of overweight and/or obese participants was 8.3%. The weight change from pre-pregnancy to delivery was 15kg on average,

with 17% having gained weight below, 42% having gained weight within and 41% having gained weight exceeding the IOM recommendation.

Independent of pre-pregnancy BMI, gestational hyperglycaemia and other confounders, women who gained more weight than the IOM recommendation had offspring with larger body size at age 7 years, and increased odds of higher body fat, high blood pressure and poor [blood sugar control](#), while women who gained less than the recommendation had offspring with increased risks of high blood pressure and poor blood sugar control at 7 years of age, compared with those who gained weight within the recommended range.

The authors say: "We found evidence of linkage between GWG and several cardiometabolic risk factors in the offspring aged 7 years, independently of maternal BMI prior to pregnancy and glucose level during pregnancy. These findings have important implications for both prevention and treatment. There is a need for greater awareness and monitoring of weight gain during [pregnancy](#). Pregnancy might be a potential window of opportunity for intervention through modifiable behaviours, including maternal nutrition and physical activity."

However, they add: "Although limiting excessive GWG may help minimise the intergenerational cycle of obesity, the benefits of lower weight gain must be balanced against other cardiometabolic risks—such as [high blood pressure](#) and poorer [blood](#) sugar control—and risk of stunted growth in the offspring if GWG is inadequate."

They conclude: "Long-term follow-up of these children is necessary to evaluate the effect of maternal GWG on cardiometabolic risk in adolescence and adulthood."

**More information:** Claudia H. T. Tam et al. The impact of maternal gestational weight gain on cardiometabolic risk factors in children,

*Diabetologia* (2018). [DOI: 10.1007/s00125-018-4724-x](https://doi.org/10.1007/s00125-018-4724-x)

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