

Maternal health linked to child's risk of obesity

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Women's fat levels before and during pregnancy are linked to those of

their infants in ways that can vary depending on a mother's ethnicity, a Singapore-based study shows, and highlights the need for nuanced health advice.

In a rare exploration of these issues in Asian populations, this research focused on ethnic maternal differences as well as on general trends. These findings form one part of a large scale and ongoing study of [mothers](#) and infants before and after birth—called 'Growing up in Singapore Towards Healthy Outcomes (GUSTO)'—from a collaboration by Singapore's National University Health System (NUHS), KK Women's and Children's Hospital (KKH), and the A*STAR Singapore Institute for Clinical Sciences SICS.

"The implications are that different advice and intervention may be appropriate for different Asian ethnic groups," explains Yung Seng Lee of A*STAR.

With obesity a major public health problem, Lee explains that the GUSTO study group is trying to understand the ways in which a mother's nutrition and lifestyle might determine if her child is at increased risk of obesity.

A particular advantage of the GUSTO study is that it is able to compare participants from the three major ethnic groups of Singapore—Chinese, Malay and Indian, explains Lee. These three groups have different rates of obesity, diabetes and cardiovascular disease. "We want to identify early life factors that account for these differences, and use our findings to inform clinical practice," says Lee.

One example of ethnic differences is the link between a mother's weight gain during pregnancy and an infant's post-birth weight and length that was found in Chinese and Indian groups but not in Malays. Also interesting is that a mother's pregnancy weight gain and infant weight

and fat level was independent of pre-pregnancy Body Mass Index (BMI). In other words the two factors in the mother—weight gain during pregnancy and BMI before pregnancy—need to be considered as distinct and independent contributors to possible obesity in their children.

Factors such as BMI before pregnancy and [weight gain](#) during [pregnancy](#) can be modified by nutritional and lifestyle changes and so are useful for maternal health guidance. The discovery of ethnicity differences, however, emphasizes the need to explore these factors in more detail before assuming the same guidance will be appropriate for all groups.

"We now plan to investigate ethnic [differences](#) in more detail, and also look for underlying genetic and metabolic reasons behind them," says Xinyi (Cindy) Lin, also of the SICS team.

More information: Xinyi Lin et al. Ethnic Differences in Effects of Maternal Pre-Pregnancy and Pregnancy Adiposity on Offspring Size and Adiposity, *The Journal of Clinical Endocrinology & Metabolism* (2015). [DOI: 10.1210/jc.2015-1728](https://doi.org/10.1210/jc.2015-1728)

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