



PRESS RELEASE

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Excessive weight gain during pregnancy can lead to higher risks of death

Excessive weight gain in pregnancy is associated with greater postpartum weight retention and pregnancy complications, yet its long-term implications on women, such as mortality rates, remain unknown

Singapore, 30 October 2023 —Weight gain is a common phenomenon during pregnancy, but excessive gain may be a sign of adverse health issues for mothers.

According to a recent study of pregnant women with low-risk pregnancy complications in Singapore, approximately 60% of them either gained too little or too much weight during pregnancy. Exceeding the recommended weight gain was associated with a higher risk of caesarean section (C-section) deliveries and the birth of larger babies – rendering this an increasingly alarming issue to be studied.

The impact of such weight gain is usually associated with greater postpartum weight retention, and pregnancy complications such as gestational diabetes, pregnancy-induced hypertension, as well as a higher chance of requiring a C-section. However, its long-term implications have hitherto remained unknown.

Professor Cuilin Zhang from the Department of Gynaecology and Obstetrics at the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), and Director of the Global Center for Asian Women's Health (GloW) at NUS Medicine and colleagues from the University of Pennsylvania and the US National Institutes of Health have investigated the association between weight gain during pregnancy, and mortality rate, with a follow-up period of over 50 years. The researchers found that for women with BMI in the normal and overweight range, excessive weight gain during pregnancy was associated with a 9% to 12% increase of all-cause mortality risk respectively. The findings were published in [The Lancet](#), one of the world's highest ranked academic journals.

Based on data from the Collaborative Perinatal Project (CPP), a prospective large U.S. pregnancy cohort of over 46,000 women from 1959 to 1965, the researchers estimated associations between gestational weight gain and loss and mortality. The outcomes of the study included all-cause mortality, which refers to death by any cause, and cause-specific mortality, such as death by conditions like cardiovascular diseases and cancers. These findings are significant as the underlying biological mechanisms of maternal weight gain during pregnancy and mortality are similar across populations.

The recommended amount of weight gain during pregnancy for each BMI category pre-pregnancy are as follows:

- Women who are underweight based on BMI (<18.5 kg/m²): 12.5-18 kg
- Women who are of normal weight based on BMI (18.5-24.9 kg/m²): 11.5-16 kg
- Women who are overweight based on BMI (25.0-29.9 kg/m²): 7-11.5 kg
- Women who are obese based on BMI (>30.0kg/ m²): 5-9 kg

Excessive weight gain for women with a pre-pregnancy BMI in the underweight and normal range, led to an 84% and 20% increased risk of mortality from cardiovascular disease respectively. At the same time, women with a BMI in the overweight range, held a 77% increased risk of mortality from diabetes.

Considering current knowledge and the phenomenon of weight gain during pregnancy, the lack of studies and information on this renders the novel findings critical. The findings from this large well-characterised study, with more than 50 years of follow-up data, provide important evidence on the significance of women's health for reproduction and their overall long-term health, wellbeing, and longevity.

“Promoting women's health and achieving healthy longevity should start early in women's lives. In particular, women's health at their reproductive age and during pregnancy, are critical time windows that have long-term health impacts over their lifespan, as well as intergenerational impact on the offspring and the family,” said Prof Zhang, the principal investigator and last author of the study.

As a significant public health issue with far-reaching implications, long-term follow-up data of women's health is warranted in Singapore. With that, GloW at NUS Medicine plans to work with investigators from existing pregnancy cohorts in Singapore and conduct follow-up studies of women's health over their lifespan. This will serve as data to fill in gaps in research on maternal health and women's long-term well-being.

GloW will be holding its inaugural conference, the Singapore Women's Health Conference, from 9 to 11 November 2023, at Fairmont Singapore. Centering on these two key aspects -- nutrition and diet, the theme of the Singapore Women's Health Conference 2023, “Promoting Women's Health and Healthy Longevity: from Laboratory TO KITCHEN”, is an illustration of GloW's commitment to explore the various facets of women's health.

The conference will bring together leading international and local scientists, experts, and practitioners in women's health, maternal and child health, healthy longevity, public health, omics technology, and nutrition to address and explore cutting-edge research on the health and well-being of women and their families.

Please visit <https://www.womenshealthconference2023.sg/> for more information on the Singapore Women's Health Conference.

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Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, research centres of excellence, corporate labs and more than 30 university-level research institutes focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

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Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of the leading medical schools in Asia and ranks among the best in the world (Times Higher Education World University Rankings 2023 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2023).

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