

# Interpregnancy Weight Change and Gestational Diabetes Mellitus: A Systematic Review and Meta-Analysis

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## Abstract

**Objective:** This study aimed to synthesize evidence regarding the association between interpregnancy weight change (IPWC) and gestational diabetes mellitus (GDM) in the subsequent pregnancy. **Methods:** MEDLINE, EMBASE, Cochrane Library, and Web of Science were searched from inception to May 10, 2020. This review included studies that reported the association between IPWC and GDM in the subsequent pregnancy without restriction on study design, IPWC classification, or parity. The “no weight change” interpregnancy category was defined by each study, and data were synthesized to analyze the risk of GDM according to weight change. **Results:** Thirteen observational studies were included. A higher risk of GDM in the subsequent pregnancy when there was interpregnancy weight gain (odds ratio [OR] = 1.56; 95% CI: 1.30-1.83;  $I^2 = 82.30\%$ ) was found. However, interpregnancy weight loss was associated with lower risk of GDM in the subsequent pregnancy (OR = 0.83; 95% CI: 0.68-0.98;  $I^2 = 58.10\%$ ), but the decrease in the risk of GDM in the subsequent pregnancy was greater among women with pregestational BMI higher than 25 kg/m<sup>2</sup> (OR = 0.58; 95% CI: 0.39-0.77;  $I^2 = 0.00\%$ ). **Conclusions:** The risk of GDM in the subsequent pregnancy increases with interpregnancy weight gain, whereas it decreases with interpregnancy weight loss.