

# Expecting Change: The Impact of Pregnancy on Weight Loss After Bariatric Surgery - A Systematic Review and Meta-analysis

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## Introduction

Bariatric surgery is effective for long-term weight loss, but the impact of pregnancy on postoperative outcomes remains uncertain. Physiological and behavioral changes during pregnancy may influence weight trajectories. This study aimed to systematically evaluate the effect of pregnancy on weight loss after bariatric surgery.

## Methods

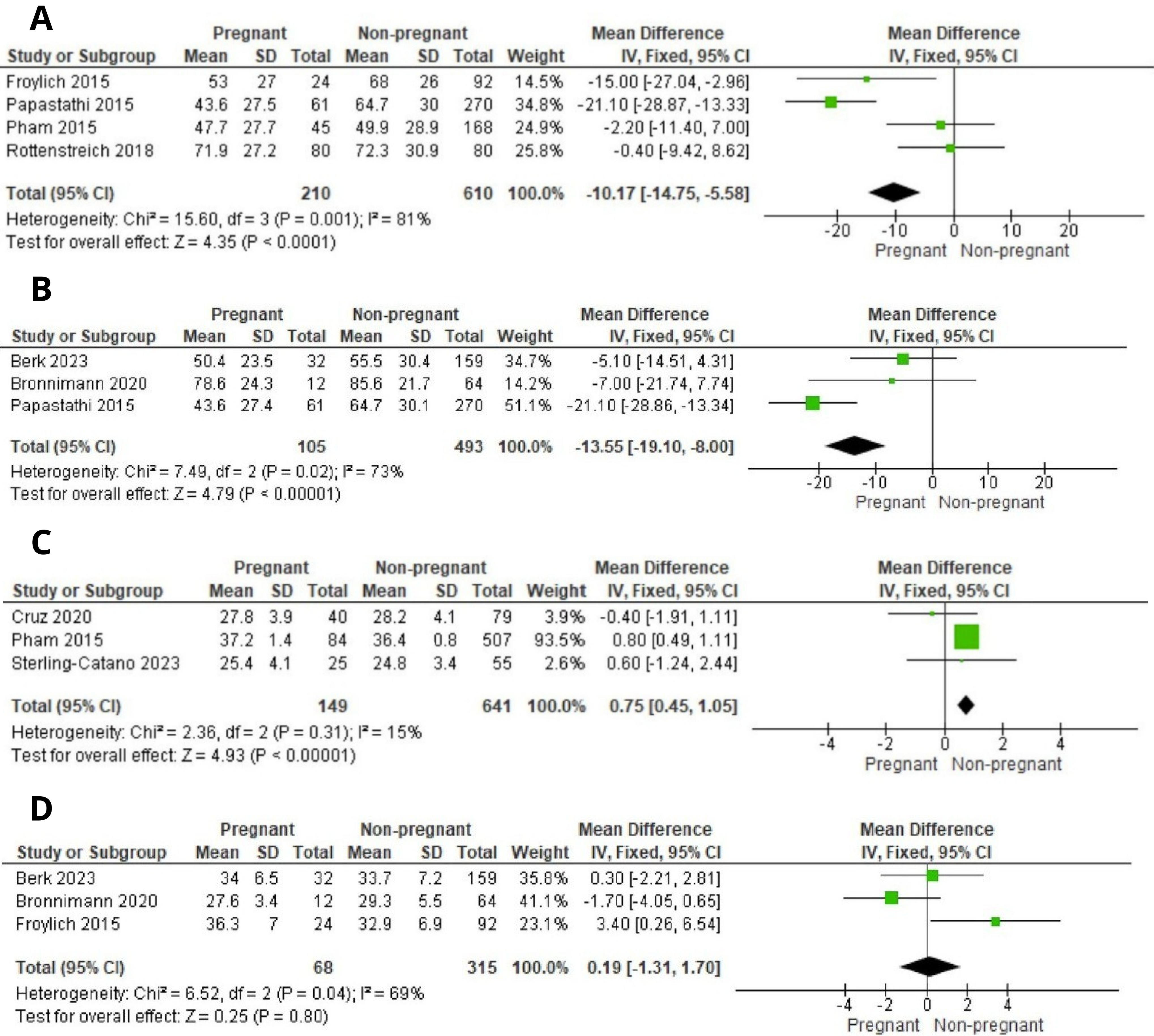
Systematic search of PubMed/MEDLINE, EMBASE, ClinicalTrials.gov, and Cochrane Library (through August 2025) identified studies comparing postoperative weight outcomes between pregnant and non-pregnant women after bariatric surgery. Primary outcomes were BMI variation and %EWL; secondary outcomes included %TWL and %EBL. Meta-analysis was performed using RevMan 5.4 with heterogeneity assessed by  $I^2$ .

## Results

Eight studies (2,746 patients) were included. Preoperative BMI was similar between groups. Short-term weight loss was comparable, but long-term outcomes favored non-pregnant patients. Meta-analysis showed lower EWL (MD -10.2; 95% CI -14.7 to -5.6;  $P < .0001$ ;  $I^2 = 81\%$ ) and EBL (MD -13.5; 95% CI -19.1 to -8.0;  $P < .00001$ ;  $I^2 = 73\%$ ) in pregnant patients after 3 years (Fig. 1A and Fig. 2B). BMI was higher at 1 year (MD 0.7; 95% CI 0.4 to 1.0;  $P < .00001$ ;  $I^2 = 15\%$ ) but not different at 4 years (MD 0.2; 95% CI -1.3 to 1.7;  $P = .80$ ;  $I^2 = 69\%$ ) (Fig. 1C and Fig 1D).

## Conclusion

Pregnancy after bariatric surgery is associated with slightly higher BMI in the short term and reduced long-term weight loss, as evidenced by lower excess weight loss and excess BMI loss at  $\geq 3$  years. These findings suggest that pregnancy may modestly attenuate long-term weight outcomes, although short-term effects are minimal.



**Figure 1. Weight outcomes after bariatric surgery in pregnant vs non-pregnant patients. Forest plots showing (A) excess weight loss (%EWL) at  $\geq 3$  years, (B) excess BMI loss (%EBL) at  $\geq 3$  years; (C) BMI at 1 year; and (D) BMI at 4 years.**