

Elective Surgery in Adult Patients with Excess Weight: Can Preoperative Dietary Interventions Improve Surgical Outcomes?

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Objectives: Excess fat can complicate surgery and is a risk factor for postoperative complications, but the impact of intentional preoperative weight/fat loss on surgical outcomes is unclear. The objective of this systematic review was to summarize the literature regarding the impact of preoperative dietary interventions aimed at weight/fat loss on non-bariatric surgery outcomes.

Methods: PRISMA guidelines were followed, and four electronic databases were searched for non-bariatric surgery studies which evaluated surgical outcomes resulting from a preoperative dietary intervention which focused on weight loss, fat loss, or improvement of liver steatosis. Meta-analysis was unfeasible due to the extreme heterogeneity of variables.

Results: Fourteen studies, including five randomised controlled trials, were selected. Laparoscopic cholecystectomy, hernia repair, and liver resection were most studied. Diet duration was 1–68 weeks (median 9 weeks). Weight loss ranged from 3.3 to 55 pounds. Preoperative Very Low Calorie Diet (VLCD, ≤ 800 kcal) or Low Calorie Diet (LCD, ≤ 900 kcal) for 1–3 weeks had significant impact: reduction in blood loss for two liver resection and one gastrectomy study (-27 to -411 mL, $p < 0.05$), and for laparoscopic cholecystectomy, reduction in 6 minutes in operating time ($p < 0.05$) and reduced difficulty of dissection/visualisation of Calot's triangle ($p < 0.05$). There was no difference in length of stay ($n = 7$ studies). No other results could be collated due to lack of control groups and common outcomes.

Conclusions: Preoperative VLCD or LCD for 1–3 weeks could reduce operating time and surgical difficulty for laparoscopic cholecystectomy and reduce blood loss for liver resection and gastrectomy. Impact for other surgery types is still unknown and requires further randomised controlled trials with common surgical outcomes to establish.

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