

Surgical Outcomes of Patients Receiving GLP-1 Receptor Agonists Undergoing Breast Reduction

A Propensity Score-Matching Analysis

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BACKGROUND

- GLP-1 receptor agonists (semaglutide, tirzepatide) are widely prescribed for weight loss and glycemic control.
- Use among patients seeking elective plastic surgery is rising rapidly.
- Perioperative concern has focused on delayed gastric emptying and aspiration risk (ASA, 2023).
- Impact on wound healing and soft-tissue outcomes after body-contouring is largely unknown.
- Breast reduction is an ideal model: high volume, standardized, reliant on skin-flap healing.

OBJECTIVE

To evaluate 30-, 90-, 180-, and 365-day postoperative outcomes in patients undergoing breast reduction with prior GLP-1 RA exposure compared with matched controls.

METHODS

Design: Retrospective cohort, TriNetX Research Database.
Procedure: Breast reduction (CPT 19318).
Exposure: Semaglutide (RxNorm 1991302) or tirzepatide (RxNorm 2601723), initiated ≥ 5 months prior to surgery.
Matching: 1:1 propensity score on 24 covariates — demographics, BMI, diabetes, hypertension, cancer, HbA1c, eGFR, chemo, radiation.
Matched cohorts: 1,143 per arm for 30-day analysis; 1,266 per arm for 90-, 180-, and 365-day analyses.
Analysis: Risk ratio (RR; also known as relative risk) and odds ratio (OR) with 95% CIs; chi-square, $p < 0.05$ significant.

POSTOPERATIVE OUTCOMES AT 30, 90, 180, AND 365 DAYS

$n = 1,143$ per cohort (30d) • $n = 1,266$ per cohort (90/180/365d) • **significant p -values shown in red**



KEY FINDINGS

1,143 / 1,266

matched pairs
per arm (30d / 90–365d)

RR 1.38

wound care at 1 yr
95% CI 1.14–1.66 • $p=0.001$

RR 0.67

fat necrosis at 1 yr
95% CI 0.48–0.93 • $p=0.017$

CONCLUSIONS

GLP-1 RA use was not associated with increased risk of major postoperative complications, including bleeding, hematoma, seroma, infection, or wound dehiscence.

Patients on GLP-1 therapy were consistently more likely to require post-procedural wound care (~5 pp absolute gap; 32–43% relative increase across all time points).

Fat necrosis was significantly lower in GLP-1 users at 1 year (RR 0.67, 95% CI 0.48–0.93), likely reflecting preoperative weight loss.

Overall, GLP-1 receptor agonists appear safe in the perioperative setting for patients undergoing breast reduction, though patients should be counseled about a higher likelihood of prolonged wound care after surgery.

LIMITATIONS

- Retrospective claims-based data; possible ICD/CPT misclassification.
- No granular data on GLP-1 dose, duration, or hold protocols.
- Residual confounding may persist despite PSM (smoking, weight-loss magnitude).