

The Effects of Body Mass Index on Postoperative Complications in Patients Undergoing Autologous Free Flap Breast Reconstruction

Kassra Garoosi, BS¹, YooJin Yoon, BS¹, Christodoulos Kaoutzanis, MD²

¹ University of Colorado School of Medicine, Aurora, CO

² Department of Plastic and Reconstructive Surgery, University of Colorado Anschutz Medical Center, Aurora, CO

Background

- The prevalence of obesity in the US exceeds 40%, yet perioperative effects of higher BMI in autologous breast reconstruction remain poorly studied

Objective

- Investigate BMI's impact on post-op complications in abdominal and gluteal-based autologous breast reconstruction

Methodology

- We conducted a retrospective analysis using TriNetX, a healthcare database with >250 million patients
- Using CPT and ICD-10 codes, we identified and compared outcomes rates in four cohorts: < 24.99 kg/m², 25-29.99 kg/m², 30-34.99 kg/m², and 35-39.99 kg/m²

Study Impact

Higher BMI classes are associated with increased risk of postoperative complications in autologous breast reconstruction

Table 1. Regression analysis evaluating associations between BMI class and post-operative outcomes following autologous breast reconstruction.

	Odds Ratio	95% CI	P-value
Cellulitis			
BMI 25-29.9 kg/m ²	1.427	(0.952, 2.140)	0.083
BMI 30-34.9 kg/m ²	1.708*	(1.147, 2.543)	0.008
BMI 35-39.9 kg/m ²	2.356*	(1.416, 3.920)	0.001
Surgical Site Infection			
BMI 25-29.9 kg/m ²	1.512*	(1.069, 2.140)	0.019
BMI 30-34.9 kg/m ²	2.040*	(1.428, 2.915)	< 0.0001
BMI 35-39.9 kg/m ²	1.930*	(1.238, 3.010)	0.003
Need for Debridement			
BMI 25-29.9 kg/m ²	1.496*	(1.062, 2.106)	0.020
BMI 30-34.9 kg/m ²	2.150*	(1.476, 3.132)	< 0.0001
BMI 35-39.9 kg/m ²	3.088*	(1.752, 5.441)	< 0.0001
Wound Dehiscence			
BMI 25-29.9 kg/m ²	1.367	(0.980, 1.907)	0.065
BMI 30-34.9 kg/m ²	1.855*	(1.319, 2.607)	< 0.0001
BMI 35-39.9 kg/m ²	1.909*	(1.208, 3.016)	0.005
Flap Failure			
BMI 25-29.9 kg/m ²	1.315	(0.863, 2.003)	0.201
BMI 30-34.9 kg/m ²	2.049*	(1.358, 3.091)	0.001
BMI 35-39.9 kg/m ²	1.838*	(1.073, 3.149)	0.025

Note: Only statistically significant outcomes included

Results

- We identified 8,791 patients who underwent autologous breast reconstruction
- Patients with a BMI of 25-29.99 kg/m² had a significantly increased risk of surgical site infection, need for debridement, and incisional bulge
- Patients with a BMI of 30-34.99 kg/m² and BMI of 35-39.99 kg/m² had a significantly increased risk of cellulitis, surgical site infection, need for debridement, wound dehiscence, incisional bulge, and flap failure

Conclusion

- Our study illustrates that there is an increased risk of postoperative complications associated with higher BMI classes

Disclosures: The authors have no relevant disclosures to share. This study is COMIRB exempt.

