

Outcomes of Omental Fat-Augmented Free Flap Breast Reconstruction Across BMI Categories

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Objective

- BMI is a key determinant in autologous breast reconstruction.
- Low BMI: limited donor tissue, yet higher satisfaction with autologous vs. implant-based reconstruction.
- High BMI: adequate tissue but increased donor-site morbidity and wound complications.
- The omental fat-augmented free flap (O-FAFF) utilizes laparoscopic harvest and may broaden autologous reconstruction options across BMI groups.
- Objective: Compare outcomes across low (<18.5), normal (18.5–24.9), and high (≥25) BMI patients.

Methods

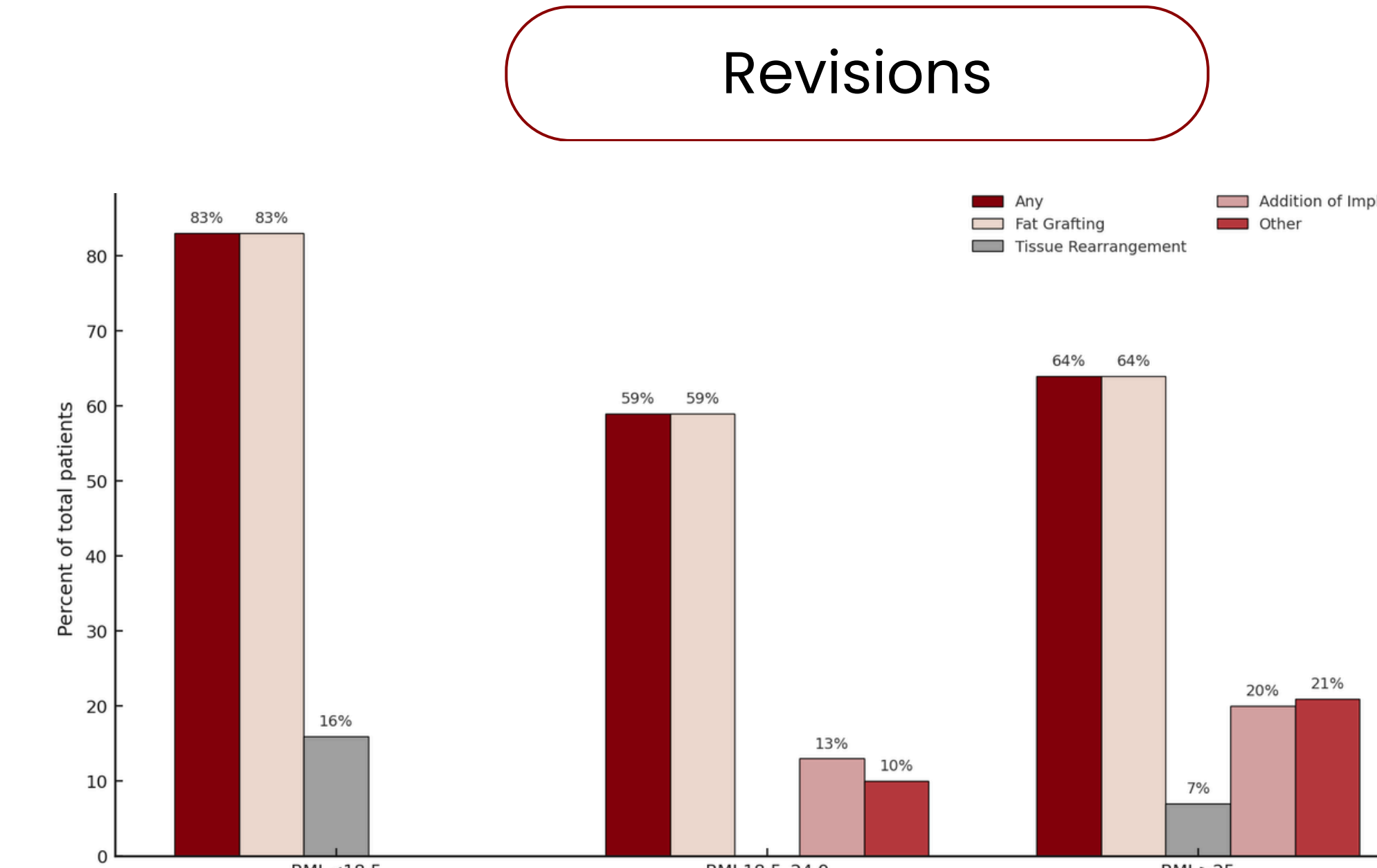
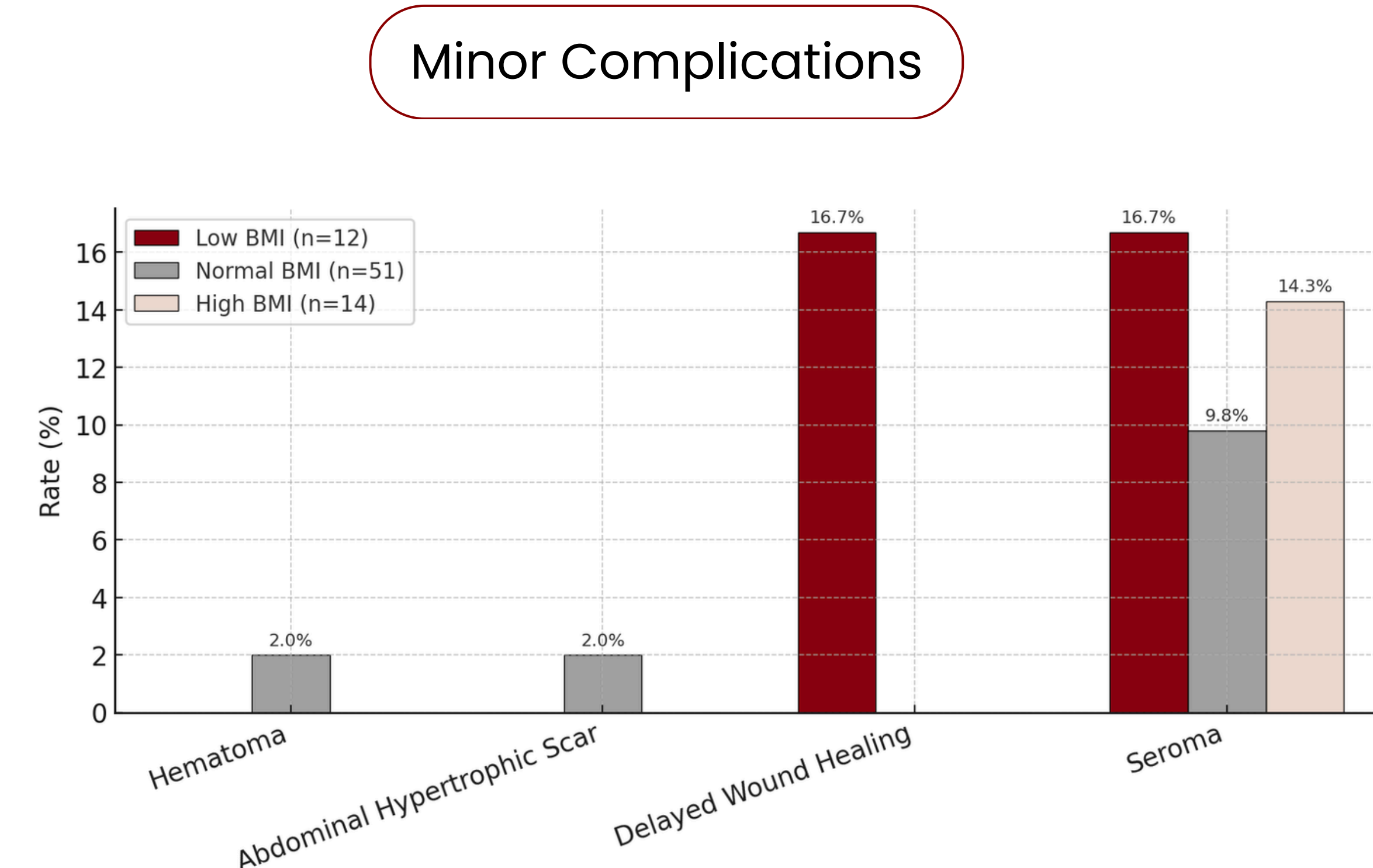
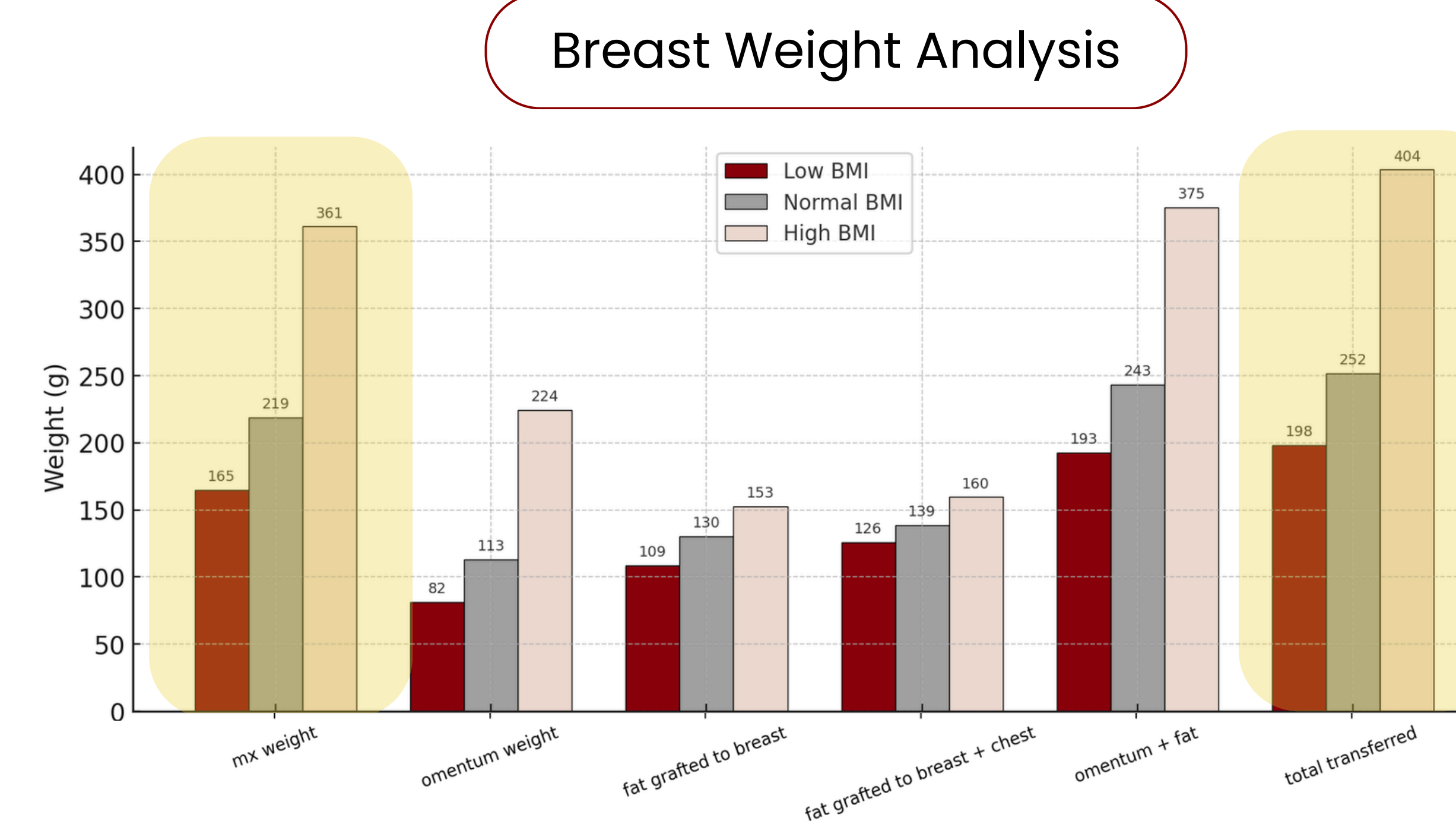
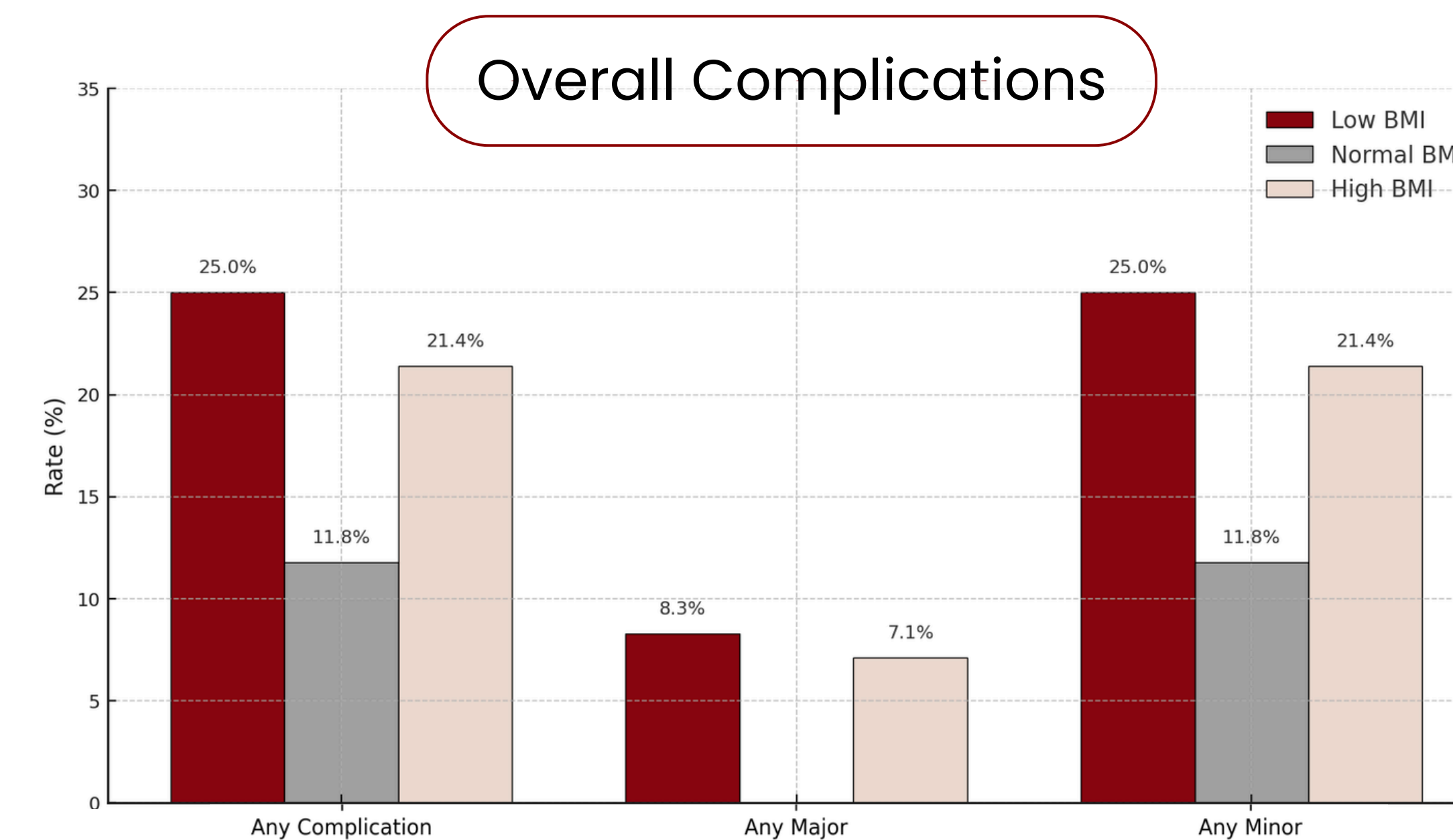
- Design: Retrospective review of consecutive O-FAFF breast reconstructions by a single surgeon.
- Outcomes: Major and minor complications, abdominal donor-site morbidity, and revision procedures.
- Analysis: Fisher's exact test for unadjusted comparisons.
- Adjusted analysis: Logistic regression controlling for preoperative radiotherapy.

Results

Characteristics	Low BMI (n=12)	Normal BMI (n=51)	High BMI (n=14)
BMI mean, range (SD)	17.9, 17.1–18.5 (0.48)	21.3, 19.3–24.2 (1.3)	28.4, 25.2–39.3 (4.0)
Age (SD)	45.9 (11.7)	49.7 (10.9)	49.1 (9.4)
Immediate Surgery	10	40	8
Delayed Surgery	2	11	6
Neoadjuvant Radiation Therapy	0	15	6
NSM	12	42	10
NNSM	0	9	4

Weight Category	Patient Count
Overweight (BMI 25.0–29.9)	11
Obesity Class I (BMI 30.0–34.9)	2
Obesity Class II (BMI 35–39.9)	1
Obesity Class III (BMI ≥40.0)	0

Statistical Significance Legend
* p < 0.05
** p < 0.01
*** p < 0.001
**** p < 0.0001
(No asterisk = not significant)



Conclusion

- O-FAFF demonstrates comparable safety across BMI groups, with no significant differences in overall or major complication rates.
- Major complications were rare, and delayed wound healing in low BMI patients did not remain significant after adjustment for radiation.
- No abdominal donor-site complications were observed in high BMI patients, supporting the benefit of laparoscopic harvest with minimal incision burden.
- Revision procedures were common across all cohorts as part of staged reconstruction, with no significant differences in overall revision patterns.
- Reconstructive volume was reliably achieved, with combined omentum and fat grafting approximating mastectomy specimen weight across BMI categories.
- Clinical implications:
 - Expands autologous options for low BMI patients beyond implants
 - May reduce donor-site morbidity in high BMI patients at increased risk for wound complications