

The Association Between Smoking and Plastic Surgery Outcomes in 40,465 patients: An Analysis of the ACS-NSQIP Datasets

Naikhoba C.O. Munabi, MD; David Goltsman, MBBS; Jeffrey A. Ascherman, MD

Disclosure/Financial Support: None of the authors has a financial interest to disclose

Introduction: In plastic surgery, studies in smokers showing impaired post-operative wound healing and increased infection rates focus predominantly on breast procedures.¹⁻⁴ However, the effect of smoking on post-surgical outcomes may vary based on anatomic location and tissue type. Using the American College of Surgeons National Surgery Quality Improvement Program (ACS-NSQIP) datasets, we examined associations between smoking and post-operative complications after a wide range of plastic surgery procedures.

Materials and Methods: The 2007 to 2012 ACS-NSQIP datasets were reviewed for all plastic surgery procedures performed. Complications were categorized into four major dependent variables: major surgical or major medical complications, wound complications, and wound infections. Smoking status was the independent variable. Results were adjusted for confounding factors such as sex, race, age, year, and CPT code prior to analysis.

Results: Over 40,000 plastic surgery procedures were analyzed including implant-based (IBBR) and autologous breast reconstruction, reduction mammoplasty, abdominal reconstruction, upper (UE) and lower extremity (LE) procedures, and craniofacial (CF) procedures. Smoking significantly increased the likelihood of major surgical, major medical, and overall wound complications; and superficial wound infections. The anatomic location of the procedure was significantly associated with the risk of developing different types of complications. In smokers, surgical complications were most likely to occur after IBBR, UE, LE, or CF procedures. Medical complications were more likely in LE procedures. Wound complications occurred with greater frequency in LE, UE, and CF procedures. Specifically, wound dehiscence was more likely in reduction mammoplasty and LE procedures whereas wound infections were more likely in UE, LE, or CF procedures.

Conclusions: Smoking increases postoperative complications after plastic surgery procedures with variable effects depending on procedure type and location. Understanding the rates and risks of complications may assist plastic surgeons in counseling patients on expectations after surgery and encouraging pre-operative smoking cessation, particularly prior to elective procedures.

References:

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