

Department of Surgery
2026 Research Day
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Title:

Risk Factors Associated with Secondary Rhinoplasty Revision: An International Database Analysis

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Background:

Rhinoplasty is a commonly performed facial plastic surgery procedure, with a subset of patients requiring revision rhinoplasty. Given the technical complexity of secondary procedures, identifying factors associated with revision surgery can be beneficial in optimizing primary surgery and counseling patients preoperatively. This study evaluated patient-level characteristics correlated with increased likelihood of revision rhinoplasty.

Methods:

A retrospective cohort study was conducted using the TriNetX Research Network database, including patients who underwent rhinoplasty from 2012 to 2025. Patients were stratified into revision and non-revision cohorts using CPT, ICD-10, and SNOMED codes. Group differences were assessed using t-tests for continuous variables and a two-proportion z-test for categorical variables ($p < 0.05$).

Results (or Preliminary Results):

Among 50,342 patients undergoing primary functional rhinoplasty, 3,080 (6.12%) underwent revision rhinoplasty. Those needing revision were slightly younger (29.0 vs 30.9 years, $p < 0.0001$), more often female (61% vs 53%, $p < 0.0001$), and more likely African American or Asian (4% vs 3%, $p = 0.0017$; 7% vs 5%, $p < 0.0001$). Mental health disorders, including anxiety (27% vs 23%, $p < 0.0001$), and substance use, notably nicotine and cocaine dependence (11% vs 9%, $p = 0.0052$; 1% vs 0%, $p = 0.0074$), were associated with revision. BMI ≥ 25 (12% vs 11%, $p = 0.0142$), malnutrition (3% vs 2%, $p = 0.0001$), heparin use (12% vs 8%, $p < 0.0001$), and glucocorticoid use (77% vs 74%, $p = 0.0002$) were also more commonly associated with revision.

Conclusions (or Preliminary Conclusions):

Preoperative evaluation, including psychosocial screening and optimization of modifiable risk factors, may enhance patient preoperative counseling, improve outcomes, and reduce revision rates following primary functional rhinoplasty.