Which Septoplasty Patients Proceed to Rhinoplasty? A National Database Study

WashU Medicine

Matthew J. Wu, MD[1] · **Daniel K. Du, BAS[2]** · Eric R. Barbarite, MD[3] · Gregory H. Branham, MD[3] · John J. Chi, MD, MPHS[3] · Emily A. Spataro, MD[3]

[1]Department of Otolaryngology–Head & Neck Surgery, Washington University School of Medicine in St. Louis · [2]Washington University School of Medicine in St. Louis
[3]Division of Facial Plastic & Reconstructive Surgery, Washington University School of Medicine in St. Louis

121,418 septoplasty patients, 2009–2025 | **2,578 (2.1%)** had a later rhinoplasty | **4.2 years** mean follow-up after septoplasty

BACKGROUND

Septoplasty is among the most common otolaryngologic procedures in the United States with ~260,000 cases a year.[1] Some patients stay obstructed afterward from residual septal deviation, turbinate hypertrophy, or nasal valve collapse, none of which septoplasty alone corrects. Revision rates are known (1.1% in adults[2]), but the preoperative features that predict progression to rhinoplasty are not.

Aim. Identify baseline factors associated with rhinoplasty after endonasal septoplasty.

METHODS

- **Design:** Retrospective cohort, TriNetX US Collaborative Network, 170 healthcare organizations[3]
- **Patients:** Adults ≥18 y with endonasal septoplasty (CPT 30520), 2009–2025; prior rhinoplasty excluded
- **Outcome:** Any later rhinoplasty, functional or cosmetic (CPT 30400, 30410, 30420, 30430, 30435, 30450, 30460, 30462, 30465)
- **Diagnoses:** ICD-10-CM codes on or before septoplasty
- **Statistics:** Unadjusted odds ratios from 2×2 tables, Pearson chi-square; significant if the CI excluded 1.0

RESULTS

Higher odds · Lower odds · Not significant

Figure 1. Structure and trauma

3 of 3 higher

	OR (95% CI)
Acquired nasal deformity	**39.4 (36.1–43.0)**
Nasal bone fracture	**5.19 (4.70–5.72)**
Dentofacial anomalies	**2.03 (1.81–2.29)**

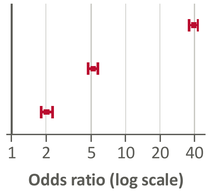


Figure 2. Sinonasal disease and sleep

5 of 6 lower

	OR (95% CI)
Sleep apnea, unspecified	**0.45 (0.41–0.50)**
Chronic sinusitis	**0.57 (0.53–0.62)**
Obstructive sleep apnea	**0.79 (0.72–0.87)**
Vasomotor/allergic rhinitis	**0.80 (0.73–0.86)**
Sleep disorders	**0.89 (0.82–0.97)**
Primary central sleep apnea	**1.55 (1.03–2.34)**

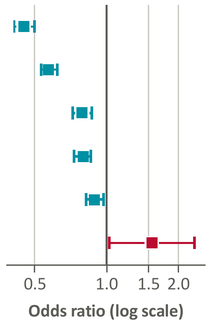


Figure 3. Metabolic and systemic disease

4 of 7 lower

	OR (95% CI)
Overweight and obsity	**0.68 (0.62–0.74)**
Hypertensive disease	**0.72 (0.66–0.78)**
Type 2 diabetes	**0.72 (0.63–0.82)**
Lipid disorders	**0.78 (0.72–0.85)**
Hypothyroidism	**1.22 (1.09–1.37)**
GERD	1.06 (0.98–1.15)
Circulatory disease	1.00 (0.92–1.08)

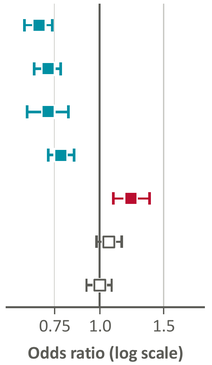


Figure 4. Psychiatric and behavioral

2 of 2 higher

	OR (95% CI)
Anxiety, stress, somatoform	**1.41 (1.30–1.53)**
Mood disorders	**1.34 (1.24–1.46)**

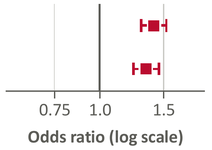


Figure 5. Headache

3 of 3 higher

	OR (95% CI)
Other headache syndromes	**1.30 (1.17–1.45)**
Migraine	**1.26 (1.13–1.39)**
Headache	**1.13 (1.04–1.23)**

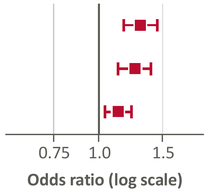
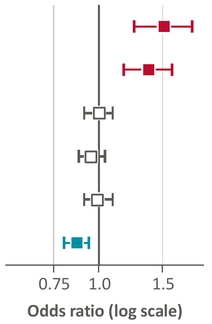


Figure 6. Pain and somatic symptoms

2 of 6 higher

	OR (95% CI)
Chronic pain syndrome	**1.51 (1.25–1.81)**
Fibromyalgia	**1.37 (1.17–1.59)**
Chronic pain, other	1.00 (0.91–1.09)
Back pain	0.95 (0.88–1.04)
Malaise and fatigue	0.99 (0.91–1.09)
Joint pain	**0.87 (0.80–0.94)**



CONCLUSION

Nasal trauma and structural deformity identified the septoplasty patients who went on to rhinoplasty. They carried less sinusitis, rhinitis, sleep apnea, and cardiometabolic disease, but more anxiety, mood, headache, fibromyalgia, and chronic pain syndrome.

COHORT

Characteristic	Rhinoplasty (n = 2,578)	No rhinoplasty (n = 118,840)
Age, mean (SD), y	46.2 (16.5)	47.6 (16.7)
Female, No. (%)	1,366 (53.0)	49,913 (42.0)
Follow-up, mean (SD), d	1,112 (1,301)	1,528 (1,514)

All three P < .001.

LIMITATIONS

- Odds ratios are unadjusted; the cohorts differed in age and sex (46.2 vs 47.6 y; 53.0% vs 42.0% female).
- Diagnoses only counted if they were coded on or before the index septoplasty, so each count depends on the look-back time in the network, which was not measured and may differ between groups.
- 2.1% is a lower bound; patients still in follow-up may yet undergo rhinoplasty.

References. 1. Bhattacharyya N. Laryngoscope. 2010;120(3):635-8. 2. Youn GM, et al. Facial Plast Surg Aesthet Med. 2023;25(2):153-8. 3. TriNetX, LLC. https://trinetx.com/ (accessed September 20, 2026).

Disclosures. None.

Presenting author. Daniel K. Du, BAS · d.k.du@wustl.edu

Corresponding author. Matthew J. Wu, MD · mjwu@wustl.edu